ಕರ್ನಾಟಕ ಸರ್ಕಾರ
ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಳಿ

ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ – 1

ತರಗತಿ : ದ್ವಿತೀಯ ಪಿಯುಸಿ **ಶೈಕ್ಷಣಿಕ ವರ್ಷ** : 2024–25

ವಿಷಯ: ಕನ್ನಡ (01) **ಗರಿಷ್ಠ ಅಂಕಗಳು** : 80

ಸಮಯ: 3 ಗಂಟೆಗಳು **ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ** : 52

ಸೂಚನೆ :
"ಅ– ವಿಭಾಗ"ದಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳಿಗೆ ಪ್ರಥಮವಾಗಿ ಬರೆದ ಉತ್ತರಗಳನ್ನು ಮಾತ್ರವೇ ಮೌಲ್ಯಮಾಪನದಲ್ಲಿ ಪರಿಗಣಿಸಲಾಗುವುದು.

ಅ– ವಿಭಾಗ

(ಅ) ಈ ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನೀಡಿರುವ ಉತ್ತರಗಳಲ್ಲಿ ಸರಿಯಾದುದನ್ನು ಆರಿಸಿ ಬರೆಯಿರಿ. **10x1=10**

1) ಯಾರನ್ನು ಕೊಲ್ಲುವುದಿಲ್ಲವೆಂದು ವಿದ್ಯಾದೇವತೆ ಹೇಳಿತು?
ಅ) ವಿಭೀಷಣ ಮತ್ತು ಕುಂಬಕರ್ಣ ಆ) ಅಂಗದ ಮತ್ತು ಹನುಮಂತ
ಇ) ರಾಮ ಮತ್ತು ಲಕ್ಷ್ಮಣ ಈ) ರಾಮ ಮತ್ತು ಸೀತೆ

2) ಯಾರು ಅನ್ಯಲಿಂಗವನ್ನು ನೆನೆಯುವುದಿಲ್ಲ?
ಅ) ದೇವಾಲಯದಲ್ಲಿದ್ದವರು ಆ) ತೀರ್ಥಯಾತ್ರೆಗೆ ಹೋದವರು
ಇ) ಸಾಮಾನ್ಯ ಭಕ್ತ ಈ) ಅಂಗದ ಮೇಲೆ ಲಿಂಗ ಧರಿಸಿದವನು

3) "ಹೆಣ್ಣು ಹರಿಬಕ್ಕೋಸುಗವೆ ತ
ಮ್ಮಣ್ಣನಾಜ್ಞೆಯ ಮೀರಿ ಕುಂತಿಯ
ಚಿಣ್ಣ ಬದುಕಿದನೆಂದು ನುಡಿವರು ಕುಜನರಾದವರು – ಈ ಪದ್ಯಭಾಗದಲ್ಲಿ ಬರುವ 'ಕುಂತಿಯ ಚಿಣ್ಣ' ಯಾರು?
ಅ) ಧರ್ಮರಾಯ ಆ) ಭೀಮ
ಇ) ನಕುಲ ಈ) ಅರ್ಜುನ

4) ಜಾಲಿಯ ರಸಸ್ವಾದ ಹೀಗಿರುತ್ತದೆ
ಅ) ಒಗರಾಗಿರುತ್ತದೆ ಆ) ಸಿಹಿಯಾಗಿರುತ್ತದೆ
ಇ) ವಿಷದಂತಿರುತ್ತದೆ ಈ) ಹಿತವಾಗಿರುತ್ತದೆ

5) ಯಾವುದು ಚಿಂತನದಿ ಮುಳುಗಿರಲಿ ಎಂದು ಕವಿ ಆಶಿಸುತ್ತಾನೆ?
ಅ) ಬಾಲ್ಯ ಆ) ಯವ್ವನ
ಇ) ಮುಪ್ಪು ಈ) ಜೀವನ

6) ಮೂಲೆಮನೆ ಮುದ್ದೇಗೌಡರಿಗೂ ಮೂತ್ರಪಿಂಡದ ಕಲ್ಲಾಗಿತ್ತು ಎಂದು ತಿಳಿದಾಗ, ಅವರ ಮನೆಗೂ ಹೋದೆ. 'ಓಹ್ ಈಗದೇನೂ ದೊಡ್ಡ ಆಪರೇಷನ್ ಅಲ್ಲಮ್ಮ, ನಾನು ನಾಲ್ಕು ಬಾರಿ ಮಾಡಿಸಿಕೊಂಡಿದ್ದೇನೆ' ಎಂದು ಅಂಗಿ ಎತ್ತಿ ತೋರಿಸಿದರು. – ಈ ಸಾಲುಗಳಲ್ಲಿ ಮುದ್ದೇಗೌಡರಿಗೆ ಮೂತ್ರಪಿಂಡದ ಕಲ್ಲಿನ ನಿರ್ವಹಣೆ ಬಗ್ಗೆ ಇರುವ ಅಭಿಪ್ರಾಯವೇನು?
ಅ) ಜಾಗರೂಕತೆ ಆ) ಭಯ
ಇ) ಸಂಶಯ ಈ) ಅಜಾಗರೂಕತೆ

7) ಯಾವ ಕತೆ ಹೇಳಬೇಕೆಂದು ಮನೋರಮೆ ಕೇಳಿದಳು?
ಅ) ಸೀತಾಸ್ವಯಂವರ ಆ) ಸೀತಾಪಹರಣ
ಇ) ರಾಮಾಶ್ವಮೇಧ ಈ) ಸೀತಾಪರಿತ್ಯಾಗ

8) ನಾಗರಾಜ ಕೋವಿ ಹಿಡಿದು ಎಲ್ಲಿ ಕುಳಿತಿದ್ದ?

ಅ) ಶಿಕಾರಿ ಬಂಡಿ ಆ) ಶಿಕಾರಿ ಗುಂಡಿ

ಇ) ಶಿಕಾರಿ ಮಂಡಿ ಈ) ಶಿಕಾರಿ ಗಂಡಿ.

9) ಹಳೇಕೊಪ್ಪದ ಸುಬ್ಬಣ್ಣನಿಗೆ ಆನೆಯಿಂದಾದ ತೊಂದರೆ

ಅ) ಮರ ಉರುಳಿಸಿದ್ದು ಆ) ಕೊಟ್ಟಿಗೆ ಉರುಳಿಸಿದ್ದು

ಇ) ಮನೆ ಉರುಳಿಸಿದ್ದು ಈ) ಮೇಕೆ ಉರುಳಿಸಿದ್ದು

10) " ಏನ್ ಸ್ವಾಮಿ, ಸಾಯೋದಕ್ಕೆ ಹೆದರೋವ ನಾನು ಅಂತ ತಿಳುಕೊಂಡ್ರ? ಲೈನ್ ಮನ್ ಕೆಲಸಕ್ಕೆ ಸೇರಿದ ಮೇಲೆ ಪ್ರಾಣದ ಆಸೆ ಇಟ್ಕೊಂಡ್ರೆ ಆಗುತ್ತ? ನಮ್ಮ ಡಿಪಾರ್ಟ್‌ಮೆಂಟಿನ ಲೈನ್ ಮನ್ ಗಳ್ಯಾರಾದ್ರೂ ಈವರೆಗೆ ಸರ್ವಿಸ್ ಮುಗಿಸಿ ರಿಟೈರಾಗಿರೋದನ್ನ ನೋಡಿದ್ದೀರಾ?" ಲೈನ್ ಮನ್ ದುರ್ಗಪ್ಪನ ಮಾತುಗಳು ಆತನ ಕೆಲಸದ ಬಗ್ಗೆ ಏನನ್ನು ಸೂಚಿಸುತ್ತದೆ.

ಅ) ಸುಲಭದ ಕೆಲಸ ಆ) ಕಷ್ಟಕರವಾದ ಕೆಲಸ

ಇ) ಕಿಡಿಗೇಡಿತನದ ಕೆಲಸ ಈ) ಅಪಾಯಕಾರಿ ಕೆಲಸ

(ಆ) ಬಿಟ್ಟ ಸ್ಥಳಗಳಿಗೆ ಆವರಣದಲ್ಲಿ ಕೊಟ್ಟಿರುವ ಉತ್ತರಗಳಲ್ಲಿ ಸೂಕ್ತವಾದುದನ್ನು ಆರಿಸಿ ಬರೆಯಿರಿ. **5x1=05**

(ಕನ್ನಡಿಗರು, ಪುದುತೋಟಂ, ಅಣ್ಣಾಮಲೈ, ಪೆನ್ ಶನ್ ದಾರರಿಗೆ, ಶಿವಸುಬ್ರಮಣ್ಯ ಅಯ್ಯರ್, ಕುದುಪನಿಗೆ,)

11) ವಾಲ್ ಪರೈ ಮಧ್ಯದಲ್ಲಿ _____ ತೋಟವಿದೆ.

12) ತಮ್ಮ ರಾಜ್ಯದಲ್ಲಿ ತಾವೇ ತಬ್ಬಲಿಗಳಾಗುತ್ತಿರುವವರು _____

13) ಧಣಿಗಳು ಹೊಳೆಯ ಹೂಳೆತ್ತಲು _____ಸೂಚಿಸಿದರು.

14) ಕಲಾಂ ಅವರು _____ ವಿಶ್ವವಿದ್ಯಾನಿಲಯದಲ್ಲಿ ಸಂದರ್ಶಕ ಪ್ರೊಫೆಸರ್ ಆಗಿದ್ದರು.

15) ಬಾಯಿ ಚಪಲ _____ ಜಾಸ್ತಿ ಇರುತ್ತದೆ.

(ಇ) ಹೊಂದಿಸಿ ಬರೆಯಿರಿ **5x1=05**

16.	ಅ) ಕೀರ್ತನೆ	1) ತೆರೆದ ದಾರಿ
	ಆ) ಮುಂಬೈ ಜಾತಕ	2) ಒಮ್ಮೆ ನಗುತ್ತೇವೆ
	ಇ) ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್	3) ಟಿ.ಯಲ್ಲಪ್ಪ
	ಈ) ಹತ್ತಿ_ಚಿತ್ತ...ಮತ್ತು_	4) ಜಾಲಿಯ ಮರ
	ಉ) ನಾನೆಂಬ ಮಾಯೆ	5) ಶಿಲುಬೆ ಏರಿದ್ದಾನೆ
		6) ದ.ರಾ.ಬೇಂದ್ರೆ

ಆ – ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು – ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **3x2=06**

17. ರಾವಣನಿಗೆ ಸೀತೆಯ ಬಗ್ಗೆ ವೈರಾಗ್ಯ ಮೂಡಿದ ಸಂದರ್ಭವನ್ನು ವಿವರಿಸಿ.

18. ಕೊಲಲಕ್ಷಮರೆಂದು ದ್ರೌಪದಿ ಯಾರನ್ನು ಕುರಿತು ಹೇಳಿದ್ದಾಳೆ?

19. ಬೆಳಕು – ಬೇಟೆಗಾರ ಹೇಗೆ ಬರುತ್ತಾನೆ?

20. ಶಿಲುಬೆಗೇರಿದ ಯೇಸುವಿನ ದೇಹ ಯಾರಿಗೆ, ಏನನ್ನು ಅನ್ನುವಂತಿದೆ?

(ಆ) ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು – ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **2x2=04**

21. ಅನ್ಯ ಡಾಕ್ಟರುಗಳು ಬಸಲಿಂಗನ ಕಾಯಿಲೆ ಬಗ್ಗೆ ಏನೆಂದು ಪ್ರತಿಕ್ರಿಯಿಸಿದರು?

22. ತ್ರಿಭಾಷಾ ಸೂತ್ರದ ಬಳಕೆ ಹೇಗಿರಬೇಕು?

23. ಕಲಾಂ ಅವರು ಬಂಡೆಗಳ ಬಸಿರಲ್ಲಿ ಕಂಡದ್ದೇನು ?

24. ಪಟ್ಟಣದ ಹೊಟೇಲಿನ ಕಟ್ಟಡ ಹೇಗಿದೆ?

(ಇ) ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು – ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 3x2=06

25. ದುರ್ಗಪ್ಪ ಏಕೆ ಬಂದಿರಬಹುದೆಂದು ನಿರೂಪಕರು ಯೋಚಿಸಿದರು?
26. ಕಾಡಾನೆಗಳ ಹಾವಳಿಗೆ ಪ್ರಕಾಶ್ ನೀಡಿದ ಕಾರಣಗಳೇನು?
27. ನಾಗರಾಜ ದುರ್ಗಪ್ಪನ ಮೇಲೆ ಏನೆಂದು ರೇಗಿದನು?
28. ಜಬ್ಬಾರ ನಿರೂಪಕರಿಗೆ ಅಂಚೆ ವಿಲೇವಾರಿ ಬಗ್ಗೆ ಅಸಡ್ಡೆಯಿಂದ ಏನು ಹೇಳಿದ ?

ಇ – ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಎರಡು ವಾಕ್ಯಗಳ ಸಂದರ್ಭ ಸೂಚಿಸಿ ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ. 2x3=06

29. ಜ್ಯೋತಿ ನಿನ್ನಾಸ್ಯರ ಹೋಲರ
30. ಕುಳಿತು ಕೆಮ್ಮುವ ಪ್ರಾಣಿ
31. ಅಲ್ಲಿಯ ಮಾತು ಅವನಿಗೆ ಸಸೇಮಿರ ಬರದು

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ವಾಕ್ಯದ ಸಂದರ್ಭ ಸೂಚಿಸಿ ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ. 1x3=03

32. ಹಾಡುವುದು ಅವುಗಳಿಗೆ ಅನಿವಾರ್ಯ, ಅವುಗಳ ಕರ್ಮ
33. "ಈ ಅದೃಷ್ಟ ನಿನಗೂ ಇತ್ತಲ್ಲೇ?"
34. ನೀರಿಳಿಯ ಗಂಟಲೊಳ್ ಕಡುಬಂ ತುರುಕಿದಂತಾಯ್ತು

(ಇ) ಯಾವುದಾದರೂ ಒಂದು ವಾಕ್ಯದ ಸಂದರ್ಭ ಸೂಚಿಸಿ ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ. 1x3=03

35. ಹೊರಗಡೆಯಿಂದ ಎಕ್ಸ್ ಪೋರ್ಟ್ ಆದವು
36. ಈ ಕಂಬದೊಳ್ಗೆ ಏನೋ ಸೇರ್ಕೊಂಡಿದೆ

ಈ – ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಐದಾರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 2x4=08

37. 'ಕದಡಿದ ಸಲಿಲಂ ತಿಳಿವಂದದೆ' ಕಾವ್ಯಭಾಗದಲ್ಲಿ ಕಂಡುಬರುವ ರಾವಣನ ವ್ಯಕ್ತಿತ್ವವನ್ನು ವಿಮರ್ಶಿಸಿ.
38. ರಕ್ಷಿಸಬೇಕಾದವರೇ ಭಕ್ಷಕರಾದರೆ ಒದಗುವ ವಿಘಟನೆಯನ್ನು ಬಸವಣ್ಣನವರು ಹೇಗೆ ಚಿತ್ರಿಸಿದ್ದಾರೆ?
39. ದ್ರೌಪದಿ ಅವಮಾನಕ್ಕೊಳಗಾದ ಮೂರು ಪ್ರಸಂಗಗಳನ್ನು ವಿವರಿಸಿ?
40. ಈ ಕೆಳಗಿನ ಪದ್ಯಭಾಗವನ್ನು ಅರ್ಥೈಯಿಸಿಕೊಂಡು ಕೇಳಿರುವ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

ಉಣದಿರ್ಪಾ ಧನವಿರ್ದೊಡೇನು ಸುತನಿರ್ದೇಂ ಮುಪ್ಪಿನಲ್ಲಾಗದಾ
ಒಣಗಲ್ಪೈರಿಗೆ ಬಾರದಿರ್ದ ಮಳೆ ತಾಂ ಬಂದೇನಾಪತ್ತಿನೊಳ್
ಮಣಿದುಂ ನೋಡದ ಬಂಧುವೇತಕೆಣಿಸಲ್ ಕಾಲೋಚಿತಕ್ಕೈದಿದಾ
ತೃಣವೇ ಪರ್ವತವಲ್ಲವೇ ಹರಹರಾ ಶ್ರೀಚೆನ್ನಸೋಮೇಶ್ವರಾ

ಅ) ಬೆಳೆಗೆ ಮಳೆ ಯಾವಾಗ ಬೇಕು? (1 ಅಂಕ)

ಆ) ಈ ಪದ್ಯದ ಕವಿಯ ಅಂಕಿತ ಯಾವುದು? (1 ಅಂಕ)

ಇ) ಸಮಯೋಚಿತಕ್ಕಾದ ಹುಲ್ಲುಕಡ್ಡಿಯು ಕೂಡ ಪರ್ವತಕ್ಕೆ ಸಮಾನ ಎಂಬ ಹೇಳಿಕೆಯನ್ನು ಸಮರ್ಥಿಸಿ. (2 ಅಂಕ)

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಐದಾರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 1x4=04

41. ಬಸಲಿಂಗ ಕೊನೆಯಲ್ಲಿ ತೆಗೆದುಕೊಂಡ ನಿರ್ಧಾರ ಯಾವುದು? ಅದಕ್ಕೆ ಕಾರಣಗಳೇನು?
42. ಚಿನ್ನಮ್ಮನ ಕುಟುಂಬ ಹೊಳೆಯ ಬಗ್ಗೆ ಅಸಹನೆ ಹೊಂದಬಾರದೆಂದು ಲೇಖಕಿ ಬಯಸುವುದೇಕೆ ವಿವರಿಸಿ?

(ಇ) ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಐದಾರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 1x4=04

43. ಡ್ರೈವರ್ ಅಬ್ಬಾಸ್ ಮತ್ತು ಕ್ಲೀನರ್ ಕೃಷ್ಣನ ಸಾವಿಗೆ ಕೃಷ್ಣೇಗೌಡರ ಆನೆ ಕಾರಣವೇ ವಿವರಿಸಿ?
44. ತನ್ನ ಆನೆಯ ಬಗ್ಗೆ ಕೃಷ್ಣೇಗೌಡನಲ್ಲಿ ಬೇಸರ ಮೂಡಲು ಕಾರಣಗಳೇನು?

ಊ – ವಿಭಾಗ

(ಭಾಷಾಭ್ಯಾಸ)

(ಅ) ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಯಾವುದಾದರೂ ನಾಲ್ಕಕ್ಕೆ ಸೂಚನೆಗೆ ಅನುಗುಣವಾಗಿ ಉತ್ತರಿಸಿ. **4x2=08**

45. ಕೆಳಗಿನ ಎರಡು ಶಬ್ದಗಳಿಗೆ ತದ್ಭವ ರೂಪ ಬರೆಯಿರಿ.

ವೀರ, ಆಕಾಶ, ಮುಖ

46. ಕೆಳಗಿನ ಎರಡು ಪದಗಳ ಗುಣವಾಚಕಗಳನ್ನು ಗುರುತಿಸಿ, ಬರೆಯಿರಿ.

ಹಾಸುಗಂಬಿ, ಶುದ್ಧನೀರು, ದೂರದೃಷ್ಟಿ

47. ಕೆಳಗಿನ ಎರಡು ಪದಗಳ ವಿಭಕ್ತಿಗಳನ್ನು ಹೆಸರಿಸಿ.

ಗುರುವಿಗೆ, ತಿಮ್ಮಪ್ಪನವರಲ್ಲಿ, ಕಟ್ಟಿಗೆಯ

48. ಕೆಳಗಿನ ಎರಡು ಕ್ರಿಯಾಪದಗಳ ಕಾಲವನ್ನು ಬರೆಯಿರಿ.

ಹೋದವು, ಓದಿದಳು, ನಲಿಯುತ್ತಾರೆ

49. ಕೆಳಗಿನ ಎರಡು ನುಡಿಗಟ್ಟುಗಳನ್ನು ನಿಮ್ಮ ಸ್ವಂತ ವಾಕ್ಯಗಳಲ್ಲಿ ಬಳಸಿ ಬರೆಯಿರಿ.

ಕೈಯೊಡ್ಡು, ರೈಲುಬಿಡು, ರಾಮಬಾಣ

50. ಯಾವುದಾದರೂ ಎರಡು ಅನ್ಯದೇಶ್ಯ ಪದಗಳನ್ನು ಬರೆಯಿರಿ.

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ವಿಷಯವನ್ನು ಕುರಿತು ಪ್ರಬಂಧವನ್ನು ಬರೆಯಿರಿ. **1x4=04**

51. ವಿದ್ಯಾರ್ಥಿ ಜೀವನದಲ್ಲಿ ಸಾಂಸ್ಕೃತಿಕ ಚಟುವಟಿಕೆಗಳ ಮಹತ್ವ

ಅಥವಾ

ಪ್ಯಾರಿಸ್ ಒಲಿಂಪಿಕ್ಸ್ ನಲ್ಲಿ ಭಾರತೀಯ ಕ್ರೀಡಾಪಟುಗಳ ಸಾಧನೆ.

(ಇ) ಯಾವುದಾದರೂ ಒಂದು ವಿಷಯವನ್ನು ಕುರಿತು ಪತ್ರ ಬರೆಯಿರಿ. **1x4=04**

52. ಮೋಹನ/ಸುನಂದಾ, ದ್ವಿತೀಯ ಪಿಯುಸಿ, ಮದರ್ ತೆರೇಸಾ ಪದವಿ ಪೂರ್ವ ಕಾಲೇಜು, ಜಗಳೂರು, ದಾವಣಗೆರೆ ಈ ವಿಳಾಸದಲ್ಲಿರುವವರು ನೀವೆಂದು ಭಾವಿಸಿ ರಾಜಶೇಖರ, ಕಾರಂತ ರಸ್ತೆ, ಲಕ್ಷ್ಮೀಪುರ, ಬ್ರಹ್ಮಾವರ ತಾಲ್ಲೂಕು, ಉಡುಪಿ ಜಿಲ್ಲೆ ಈ ವಿಳಾಸದಲ್ಲಿ ವಾಸವಿರುವ ನಿಮ್ಮ ತಂದೆಗೆ ಪ್ರವಾಸಕ್ಕೆ ಹೋಗಲು ಹಣ ಮತ್ತು ಅನುಮತಿಯನ್ನು ಕೋರಿ ಪತ್ರ ಬರೆಯಿರಿ.

ಅಥವಾ

ಗಂಗಾ/ಭೀಮೇಶ, ದ್ವಿತೀಯ ಪಿಯುಸಿ, ಅಬ್ದುಲ್ ಕಲಾಂ ಪಿಯು ಕಾಲೇಜು, ಆಳಂದ, ಕಲಬುರಗಿ ಜಿಲ್ಲೆ ಈ ವಿಳಾಸದಲ್ಲಿರುವವರು ನೀವೆಂದು ಭಾವಿಸಿ ನಿಮ್ಮ ಕಾಲೇಜಿನ ಪ್ರಾಂಶುಪಾಲರಿಗೆ ಅಂಕಪಟ್ಟಿ ಮತ್ತು ವರ್ಗಾವಣೆ ಪತ್ರ ಕೋರಿ ಪತ್ರ ಬರೆಯಿರಿ.

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION & ASSESSMENT BOARD
MODEL QUESTION PAPER – 1

Class: II Year PUC **Academic Year: 2024-25**
Subject: ENGLISH 02 **Maximum Marks:** 80
Time: 3.00 hours **Number of questions:** 36

Instructions

1. Answer the questions in all the sections.
2. Follow the prescribed limit while answering the questions.
3. Write the correct question number as it appears on the question paper.
4. For multiple choice questions (MCQ's), choose the correct answer and rewrite it.
5. Answers to the question number 30A (a-i) or 30 B (a-i) should be in sequence and at one place.
6. For question numbers 30, 31, 32 and 36, internal choices are there. Hence, answer either A or B.
7. For Part - A questions, only the first written answers will be considered for evaluation.

PART- A

I. Answer the following questions by choosing the right option. 10x1=10

1. The expression '*day in night*' in 'Romeo and Juliet' refers to _____.

   a) Roseline b) Romeo c) Juliet d) Ethiope

2. What was the initial hitch in executing the criminal in 'Too Dear'?
   a) The King prohibited execution
   b) They didn't have a guillotine and an executioner
   c) There was only an executioner but no guillotine
   d) There was a guillotine but no executioner

3. The metaphor '*bows and arrows*' in 'On Children' stands for _____.
   a) Parents and Prophets b) Parents and Children c) Parents and Teachers d) Parents and God

4. According to Vandana Shiva, the failure to understand bio-diversity and its many functions is at the root of _____.
   a) Impoverishment of nature and culture b) Improvement of nature and culture
   c) Reconnecting with nature and culture d) Transformation of nature and culture

5. In 'A Sunny Morning', Dona Laura used to carry a _____ in her free hand.
   a) Hand kerchief b) Snuff box c) Parasol d) packet of Bread Crumbs

6. Complete the following line that appears in poem 'When You Are Old', the line
   "And hid his face amid _____".
   a) a crowd of stars b) a crowd of people c) a group of people d) a group of trees

7. In the poem 'To the Foot from it Child', while descending underground the foot finds everything _____
   a) dark b) rough c) light d) coarse

8. Match the writers from column A with their works in column B with reference to 'I Believe that Books will Never Disappear'

A	B
(A) Homer	(i) The Decline of the West.
(B) Spengler	(ii) Fairy Tales
(C) Grimms'	(iii) The Odessey

   a) A-iii, B-i, C-ii b) A-ii, B-iii, C-i c) A-i, B-ii, C-iii d) A-iii, B-ii, C-i

9. The famous and fast Tokaido Line connect _____ of Japan.
   a) Tokyo and Nara b) Tokyo and Osaka c) Osaka and Nara d) Tokyo and Kyoto
10. Identify the right sequence of activities by Sheela Rani Chunkath in promoting literary drive of Pudukottai district in 'Where There Is a Wheel'.
   a) got the female activists trained - included mobility as a part of literacy drive - pushed banks to give loans - monitored personally
   b) monitored personally – pushed banks to give loans – got the female activists trained – included mobility as a part of literacy drive
   c) pushed banks to give loans – monitored personally – got the female activists trained – included mobility as a part of literacy drive
   d) included mobility as a part of literacy drive – pushed banks to give loans – monitored personally – got the female activists trained

11. Fill in the blanks with the passive form of the verb given in the brackets. 3x1=3

Pudukkottai _____(take) by storm by 1500 female cyclists. The town's inhabitants _____ (stun) by the All Women Cycle Rally. The craze for cycling _____ (observe) everywhere.

12. Fill in the blanks by choosing the appropriate expressions given in the brackets. 2x1 = 2

(getting out of hand, went along, shied away)

The plantation improved drastically with the arrival of the gardener. The owner became lazy and _____ from hard work. He indulged himself in all sorts of vices. The owner's wife was worried that their life was gradually_____.

13. Read the following paragraph and match the pronouns in side A with the nouns / noun phrases in side B they refer to 5x1=5

It was late evening. Everything was getting dark. I, Joesph, was going home and had rarely gone a furlong or two when **I** (a) saw a huge glare **which** (b) was high above the roofs of the houses. I saw that Anna's house was on fire. The fire was huge and tremendous. People **who** (c) were moving here and there, were throwing sand and water on **it** (d). **Their** (e) faces looked ghastly in the yellow flames.

	A (Pronouns)	**B (Nouns/Noun Phrases)**
a)	I	i) huge glare
b)	which	ii) people
c)	who	iii) Joseph
d)	it	iv) people's
e)	their	v) fire
		vi) sand and water

PART – B

II. Answer any three of the following questions in one or two sentences each 3x2=6

14. Mention any two expressions that Juliet uses to glorify Romeo's charm in 'Romeo and Juliet'.
15. In 'When You Are Old', how does the poet want his beloved to read the book of poems?
16. Name the two wishes of the child's foot in the poem 'To the Foot from its Child'.
17. Name any two benefits that Roof avails from Marcus Ibe in the short story 'The Voter'.

III. Answer any four of the following questions in about 60 words each 4x3=12

18. Why was the criminal reluctant to go away from the prison in 'Too Dear'?
19. Write a note on Navdanya Farm.
20. Dona Laura accuses Don Gonzalo as an 'ill natured man' in the beginning of the play 'A Sunny Morning'. Give reasons.
21. What are Borges' views on his mother?
22. Describe the complicated hierarchy of 'bowing' in Japan?

23. The agony of the Panchamas is effectively brought out in the poem 'Water'. Explain.

IV. **Answer any three of the following questions in about 100 words each 3x4=12**

24. Kahlil Gibran's 'On Children' does not focus merely on the lives of children but also talks about the responsibilities of parents. Discuss.
25. Describe the story of Gonzalo as narrated by himself in 'A Sunny Morning'.
26. How did Tammanna avenge himself in the story 'The Gardener'?
27. 'The beauty in nature makes earth a heavenly place'. Illustrate this statement with reference to 'Heaven, if you are not here on Earth'.
28. 'Roof's breach of trust has no excuse'. Justify this statement with reference to the story 'The Voter'.
29. How did cycling help to improve the economic status of women in 'Where There is a Wheel'?

PART – C

V. 30. A. Read the following passage and answer the questions set on it 9 x 1 = 9

This story is about a wedding feast and an elderly cook. My wife and I were attending my school- mate's wedding. The wedding is a grand affair with music, dance and a lavish feast.

While the food is being served on the plantain leaf, I have this habit of asking only food items that I want to eat to be served, while politely refusing other food items. So generally, when the meal is over, my leaf will be the cleanest (as if no food has been served or eaten), as good as a new leaf.

While the wedding dinner was in progress and I was thoroughly relishing the feast, from the corner of my eye, I could see and hear some whispers among the serving staff. As I continued with the delicious meal, I could see and hear some whispers among the serving staff and clearing staff looking at my plantain leaf and commenting internally, much to the obvious discomfort of my spouse. When I finished my meal, my leaf was as clean as it was at the beginning of the meal.

As I walked up to wash my hand, an elderly man walked up to me with his hands folded, his eyes filled with tears, and thanked me. I was a bit startled, and I asked him why he thanked me. He mentioned that he was the head cook and had been cooking for the last five decades, and he had never seen anyone's leaf after meal so clear, not wasting anything, and also who relished his meal so well. He mentioned that he had attained the fulfilment or success of his life's purpose and a meaning to his decades of cooking. It had a profound effect on me, as I am also a trained chef. God resides in food; the one who eats is God, and what you are eating is also a god.

According to the United Nations, about 25000 people, including more than 10000 children, die from hunger and related cause daily across the globes that is, approximately 17 people die from hunger each minute. It is important to teach our children and the next generation the importance of food and how not to waste it, even though we can afford it.

Today I am very happy that my kids and wife follow mindful eating at social functions, and after the meal, we proudly flaunt our leaves, not closed but open, to show that we haven't wasted a single morsel of food. Let's start the open leaf policy!

a. What is the profession of narrator in this story?
b. Mention any one of the habits the narrator have while the food is being served.
c. What happened while the wedding dinner was in progress?
d. Why did the elderly man thank the narrator?
e. The elderly man who thanked the narrator was_____
   i. a rich man
   ii. a serving staff
   iii. a head cook
   iv. an officer of UN

f. How many people die from hunger each minute in a day across the globe?
g. According to narrator, we have to teach our children about _____
   i. not to waste plantain leaf
   ii. not to disrespect food
   iii. types of food
   iv. maintain quality in food
h. Which word in the passage means '*a period of ten years*'?
i. Write the antonym of the word 'obvious'.

OR

B. Read the following poem and answer the questions set on it **9 x 1 = 9**

Home They Brought Her Warrior Dead

by Alfred Tennyson

Home they brought her warrior dead:
She nor swoon'd nor utter'd cry:
All her maidens, watching, said,
"She must weep or she will die."

Then they praised him, soft and low,
Call'd him worthy to be loved,
Truest friend and noblest foe;
Yet she neither spoke nor moved.

Stole a maiden from her place,
Lightly to the warrior stepped,
Took the face-cloth from the face;
Yet she neither moved nor wept.

Rose a nurse of ninety years,
Set his child upon her knee—
Like summer tempest came her tears—
"Sweet my child, I live for thee."

a. How did the warrior,s wife react when her husband was brought dead?
b. How did the warrior's wife react when she saw face of her husband?
c. What did the maidens say looking at the warrior's wife?
d. Where was the warrior brought dead?
e. How old was the nurse?
f. What did the warrior's wife say at last?
g. What are the warrior's wife's tears compared to?
h. Which word in the poem is the antonym of 'friend'?
i. Complete the analogy: low : foe :: cry : _____

PART – D

31. A. Rewrite as directed **4×1=4**

i. In an interview _____candidate was asked about his native place.
(Use proper article)

ii. plays/ democracy/ an important/ in /role/ the media
(Rearrange the following segments into a meaningful sentence)

iii. The number of dropouts_____ (was/were) quite large.
(Choose the right verb that agrees with the subject)

iv. One day a wolf _____ (be, drink) water from a stream to quench its thirst.
(Use appropriate form of verb)

OR

B. Fill in the blanks with right linkers **1x4=4**

(because, then, thus, after)

Butter-making begins with the cow. _____the milk of Jerseys has a high percentage of milk fat in it, they are sometimes called 'the butter breeds.' _____the milk is obtained, the cream is separated. The cream is_____ 'sourced' by letting it stand at room temperature. Souring gives its flavour and makes it easier to churn. The cream is pasteurised to kill all the bacteria and enzymes. _____ butter can last longer.

32. A. Rewrite as directed **2x1=2**

i. Abhijith sang the song melodiously,_____?
(**Add a question tag**)

ii. The book is the most astounding invention of man.
(**Frame a Wh' question to get underlined word as answer**)

OR

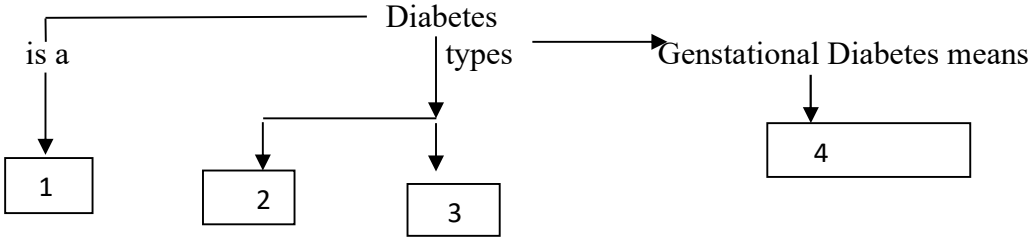
B. Rectify the errors in the following sentences and rewrite them. **2x1=2**

i. Indian Olympians returned back from Paris.

ii. Neeradhi worked very hardly to secure a rank.

33. Read the following passage and make notes by filling the boxes given below. **4x1/2=2**

Diabetes is a chronic disease that affects how our body turns food into energy. There are three main types of diabetes. They are Type-1, Type-2 and Gestational diabetes, means diabetes while pregnant. A huge population of the world are living with diabetes. It usually affects children, teens, adults and aged ones.



34. Report the following conversation. **5x1=5**

Roof : What greater honour can a village have?
Do you know why we are singled out for this recognition?
Think of the pipe borne water PAP has promised us.
Ezenwa: We believe every word of you. We shall drop our paper for Marcus.

35. Complete the following conversation. **3X1=3**

(Two friends at the campus)

Anagha: Hello Jaswanth, good morning. How are you?

Jaswanth: _____ **(responds to greeting)**

Anagha : You played very well in the volleyball match yesterday. It was a treat to watch.

Jaswanth: Thanks for the complement.

Anagha : _____**(enquires about the next match)**

Jaswanth: _____**(gives information)**

Anagha: Best of luck. Play well. See you later. Bye.

PART – E

36. A. Write a letter of application in response to the following advertisement which appeared in DECCAN CHRONICLE dated 10th August 2024. **5**

Fortis Hospitals, Bengaluru invites application for the post of Orthopaedic surgeon.

Qualification: MS in Orthopaedics,
4 to 5 years of experience in any reputed hospital
Knowledge of English and Regional language is desirable

Salary and additional perks: No constraint for extraordinary candidates

Apply within 10 days to: The Chairman (HR),
Fortis Hospitals,
Cunningham road,
Vasanta Nagara,
Bengaluru-560054.

[Use XXXX for your name and YYYY for your address]

OR

B. Imagine you are the president of your college union. You are asked to introduce the chief guest Dr. DEVI PRASAD SHETTY on the occasion of World Health Day. Based on the information given below, write an introductory speech in about 120 words. **5**

Full Name : Dr. DEVI PRASAD SHETTY
Profession : Cardiologist
Place of birth : Kinniigoli, Mangalore, Karnataka in 1953.
Education : MBBS, MS in KMC, Mangalore. Cardio Surgery in United Kingdom
Career : Returned to India in 1989. Started Manipal Heart Foundation Bangalore, conducted more than One lakh Cardio surgery, launched Yashaswini scheme.
Established Narayana Hridayalaya.
Awards : Padma Shri (2004)
BC Roy Award (2003)
Karnataka Rathna (2001)

xxx

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
MODEL QUESTION PAPER-1 2024-25
II PUC - PHYSICS (33)

Time: 3 hours. **Max Marks: 70**

No of questions: 45

General Instructions:

1. ***All parts A to D are compulsory. Part-E is only for visually challenged students.***
2. ***For Part – A questions, first written-answer will be considered for awarding marks.***
3. ***Answers without relevant diagram / figure / circuit wherever necessary will not carry any marks.***
4. ***Direct answers to numerical problems without relevant formula and detailed solutions will not carry any marks.***

PART – A

I. Pick the correct option among the four given options for ALL of the following questions: **15 × 1 = 15**

1. The S.I. unit of electric charge is

(A) coulomb metre (B) coulomb per metre (C) coulomb (D) per coulomb

2. The angle between equipotential surface and electric field is

(A) 90º (B) 0º (C) 180º (D) 45º

3. Statement-I: The resistivity of metals increases with increase in temperature.

Statement-II: Increasing the temperature of metals causes more frequent collisions of electrons.

(A) both I and II are true and II is the correct explanation of I.

(B) both I and II are true but II is not the correct explanation of I.

(C) I is true but II is false.

(D) both I and II are false.

4. A moving coil galvanometer can be converted into a voltmeter by connecting

(A) a low resistance in parallel with galvanometer.

(B) a low resistance in series with galvanometer.

(C) a high resistance in parallel with galvanometer.

(D) a high resistance in series with galvanometer.

5. When a bar magnet is suspended freely, it points in the direction of

(A) east-west (B) north-south

(C) northeast-southeast (D) northwest-southwest

6. The energy stored in an inductor of inductance *L* in establishing the current *I* in it is

(A) $\frac{1}{2}LI$ (B) LI^2 (C) LI (D) $\frac{1}{2}LI^2$

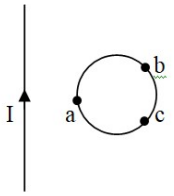
7. The direction of current induced in the loop 'abc' shown in the figure is

(A) along 'abc' if I is increasing

(B) along 'abc' if I is decreasing

(C) along 'acb' if I is increasing

(D) along 'acb' if I is constant



8. An ideal step-up transformer decreases _____ .

(A) current (B) voltage (C) power (D) frequency

9. The displacement current is due to

(A) flow of electrons (B) flow of protons

(C) changing electric field (D) changing magnetic field

10. An object of finite height is placed in front of a concave mirror within its focus. It forms

(A) a real enlarged image (B) a real diminished image

(C) a virtual enlarged image (D) a virtual diminished image

11. A beam of unpolarised light of intensity I_0 is passed through a pair of polaroids with their pass-axes inclined at an angle of θ. The intensity of emergent light is equal to

(A) $I_0 \cos^2\theta$ (B) $I_0 \cos\theta$ (C) $\frac{I_0}{2} cos\,\theta$ (D) $\frac{I_0}{2}\cos^2\theta$

12. Emission of electrons from a metal surface by heating it is called

(A) photoelectric emission (B) thermionic emission

(C) field emission (D) secondary emission

13. When alpha particles are passed through a thin gold foil, most of them go undeviated because

(A) most of the region in an atom is empty space

(B) alpha particles are positively charged particles

(C) alpha particles are heavier particles

(D) alpha particles move with high energy

14. Nuclei with same atomic number are called

(A) isotopes (B) isobars (C) isomers (D) isotones

15. The column-I is the list of materials and the column-II, the list of energy band gaps E_g. Identify the correct match.

Column-I	Column-II
(i) conductors	(a) $E_g < 3\ eV$
(ii) insulators	(b) $E_g = 0\ eV$
(iii) semiconductors	(c) $E_g > 3\ eV$

(A) (i) - (a), (ii) - (b), (iii) - (c) (B) (i) - (b), (ii) - (a), (iii) - (c)

(C) (i) - (c), (ii) - (a), (iii) - (b) (D) (i) - (b), (ii) - (c), (iii) - (a)

II. Fill in the blanks by choosing appropriate answer given in the bracket for ALL the following questions: **5 × 1 = 5**

(photon, polar, zero, infinite, phase, phasor)

16. A molecule possessing permanent dipole moment is called _____ molecule.

17. The net magnetic flux through any closed surface is _____.

18. A rotating vector used to represent alternating quantities is called _____.

19. A wavefront is a surface of constant _____.

20. In interaction with matter, light behaves as if it is made up of packet of energy called _____.

PART – B

III. Answer any FIVE of the following questions: **5 × 2 = 10**

21. State and explain Gauss's law in electrostatics.

22. Define drift velocity and mobility of free electrons in conductors.

23. A long air-core solenoid of 1000 turns per unit length carries a current of 2 A. Calculate the magnetic field at the mid-point on its axis.

24. Give the principle of AC generator. Why is a current induced in an AC generator called alternating current?

25. Write any two uses of ultraviolet radiations.

26. Name the objective used in

a) refracting type telescope and

b) reflecting type telescope.

27. Write the two conditions for the total internal reflection to occur.

28. Name the majority and the minority charge carriers in n-type semiconductor.

PART – C

IV. Answer any FIVE of the following questions: **5 × 3 = 15**

29. Write any three properties of electric field lines.

30. Obtain the expression for the effective capacitance of two capacitors connected in parallel.

31. What is Lorentz force? Write its expression and explain the terms.

32. Write any three differences between diamagnetic and paramagnetic materials.

33. Describe an experiment to demonstrate the phenomenon of electromagnetic induction using a bar magnet and a coil.

34. Give any three results of experimental study of photoelectric effect.

35. Write the three postulates of Bohr's atom model.

36. Find the energy equivalent of one atomic mass unit, first in joule and then in MeV. Given: $1u = 1.6605 \times 10^{-2}\ \ kg$, $e = 1.602 \times 10^{-19}\ C$ and $c = 2.9979 \times 10^{8}\ m\ s^{-1}$.

PART – D

V. Answer any THREE of the following questions: **3 × 5 = 15**

37. Derive the expression for the electric field at a point on the axis of an electric dipole.

38. Two cells of different emfs and different internal resistances are connected in series. Derive the expression for effective emf and effective internal resistance of the combination.

39. Derive the expression for the magnetic field at a point on the axis of a circular current loop.

40. a) Two coherent waves of a constant phase difference undergo interference. Obtain the expression for the resultant displacement. **(3)**

b) Write the conditions for constructive and destructive interference in terms of phase difference. **(2)**

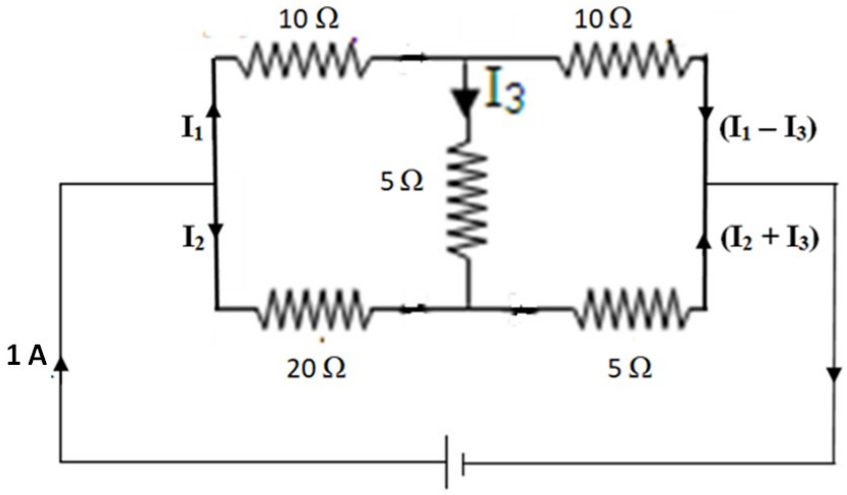
41. What is a rectifier? Explain the working of a full-wave rectifier using a neat circuit diagram. Draw its input-output waveforms.

VI. Answer any TWO of the following questions: **2 × 5 = 10**

42. a) Calculate the potential at point P due to a charge of 400nC located 9 cm away.

b) Obtain the work done in moving a charge of 2nC from infinity to the point P. Does the answer depend on the path along which the charge is moved?

43. In the following network, find the current I_3.



44. An AC source of frequency 50Hz is connected in series with an inductor of 1H, a capacitor of 90μF and a resistor of 100Ω. Does the current leads or lags the voltage? Calculate the phase difference between the current and the voltage.

45. An equilateral prism is made of glass of unknown refractive index. A parallel beam of light is incident on a face of the prism. The angle of minimum deviation is 40º. Find the refractive index of the material of the prism. If the prism is placed in water of refractive index 1.33, find the new angle of minimum deviation of a parallel beam of light.

PART – E

(For Visually Challenged Students only)

7) A circular conducting loop is placed in the plane of the paper to the right of a long straight conductor carrying current I in the upward direction. The direction of current induced in the loop is

(A) clockwise if I is increasing
(B) clockwise if I is decreasing
(C) anti clockwise if I is increasing
(D) anti clockwise if I is constant

43) In a Wheatstone bridge, AB = 10Ω , BC = 10Ω , CD = 5Ω and DA = 20Ω are connected in cyclic order. A galvanometer of 2Ω is connected between B and D. A current of 1A enters at A and leaves the network at C. Find the current through the galvanometer.

*****

GOVERNMENT OF KARNATAKA

KARNATAKA SCHOOL EXAMINATION & ASSESSMENT BOARD

MODEL QUESTION PAPER – 1

Class: II Year PUC **Academic Year:** 2024-25

Subject: Chemistry (34) **Maximum Marks:** 70

Time: 3.00 Hours **No. of Questions:** 46

Instructions

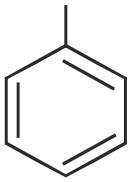
1. Question paper has FIVE parts. All parts are compulsory.
2. a. Part-A carries 20 marks. Each question carries 1 mark.
   b. Part-B carries 06 marks. Each question carries 2 marks.
   c. Part-C carries 15 marks. Each question carries 3 marks.
   d. Part-D carries 20marks. Each question carries 5 marks.
   e. Part-E carries 09 marks. Each question carries 3 marks.
3. In Part-A questions, **first attempted answer** will be considered for awarding marks.
4. Write balanced chemical equations and draw neat labeled diagrams and graphs wherever necessary.
5. Direct answers to the numerical problems without detailed steps and specific unit for final answer will not carry any marks.
6. Use log tables and simple calculator if necessary (use of scientific calculator is not allowed).
7. For a question having circuit diagram/figure/ graph/ diagram, alternate questions are given at the end of question paper in a separate section for visually challenged students.

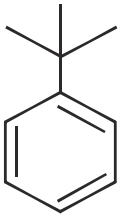
PART-A

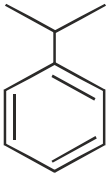
I. Select the correct option from the given choices. **15 ×1 = 15**

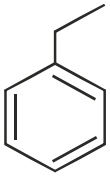
1. The role of CO_2 in Kolbe's reaction is
   a) acts as catalyst b) act as nucleophile
   c) act as weak electrophile d) act as strong electrophile.
2. In DNA, the linkage between different nitrogenous bases is
   a) phosphate linkage b) glycosidic linkage
   c) peptide linkage d) hydrogen bonding.
3. The complex $PtCl_2.4NH_3Br_2$ is treated with excess of $AgNO_3$ solution, two mole of AgBr is precipitated. The primary and secondary valence of this complex is
   a) 6 and 1 b) 6 and 2
   c) 4 and 6 d) 3 and 6
4. **Statement I:** Enantiomers are non-superimposable mirror images on each other.
   Statement II: A racemic mixture shows zero optical rotation.
   Identify the correct statement
   a) Both statement I and II are correct
   b) Both statement I and II are incorrect
   c) Statement I is correct and statement II is incorrect.
   d) Statement I is incorrect and statement II is correct.
5. The most stable manganese compound is
   a) Mn_2O_7 b) MnF_4 c) MnO_2 d) $MnSO_4$

6. Among the following alkyl benzenes which one will not give the benzoic acid on oxidation with acidic $KMnO_4$ solution.

a) 

b) 

c) 

d) 

7. An ambidentate ligand is

a) Cl^- b) CN^-

c) OH^- c) NO_2^+

8. The E^o of Fe^{2+}/Fe, Zn^{2+}/Zn and Sn^{2+}/Sn are –0.44 V, –0.76 V and –0.14 V respectively. Which metal/s is/are act as sacrificial electrode to protect iron from rusting?

a) Both Zn and Sn b) Zn only

c) Sn Only d) neither Zn nor Sn.

9. The chemical name of phosgene is

a) chromyl chloride b) triphenylphosphine

c) phosphorusoxychloride d) carbonyl chloride.

10. In a solution containing non-volatile solute, the mole fraction of solvent is 0.9. The relative lowering of vapour pressure is

a) 1 b) 0.1

c) 0.9 d) 1.1

11. All natural and artificial radioactive decay of unstable nuclei take place by

a) zero order kinetics b) half order kinetics

c) first order kinetics d) second order kinetics

12. Match the following

List-I	List-II
A) Glucocorticoids	i) Responsible for development of secondary female characteristics.
B) Mineralocorticoids	ii) Responsible for preparing the uterus for implantation of fertilised egg
C) Testosterone	iii) Control carbohydrates metabolism
D) Estradiol	iv) Responsible for development of secondary male characteristics.
	v) Control level of excretion of water and salt by kidney.

a) A-(iv), B- (v), C-(ii), D-(i) b) A-(iii), B-(v), C-(iv), D-(i)

c) A-(ii), B-(i), C-(v), D-(iv) d) A-(iii), B-(ii), C-(iv), D-(i)

13. p-Aminoazobenzene is prepared from benzenediazonium chloride and aniline in

a) acidic medium b) basic medium

c) neutral medium d) both acidic and basic medium.

14. The chemicals used to convert commercial alcohol into denatured alcohol are

a) $CuSO_4$ and Pyrolidine b) Cu_2S and Pyrolidine

c) $CuSO_4$ and Pyridine d) Cu_2S and Pyridine.

15. During osmosis, the solvent molecules are moving from

a) Hypotonic solution to hypertonic solution

b) Hypertonic solution to hypotonic solution

c) Higher concentrated solution to lower concentrated solution

d) Higher osmotic pressure solution to lower osmotic pressure solution.

II. **Fill in the blanks by choosing the appropriate word from those given in the brackets:**

(aldehydes, phenol, fluorobenzene, decreases, greater, benzene) **5×1= 05**

16. The melting point of interstitial compound is _____ than the pure metal.

17. Benzenediazonium fluoroborate on heating decomposes to give_____

18. The simplest hydroxy derivative of benzene is _____

19. When a non-volatile solute is added to the pure solvent, the freezing point of solvent_____

20. Ozonolysis of alkenes followed by reaction with zinc dust and water gives ____

PART-B

III. Answer ANY THREE of the following. Each question carries two marks. **3 × 2 = 06**

21. Explain Swartz reaction with an example.

22. Write the reactions show that glucose contains a) five hydroxyl groups b) aldehyde group.

23. Define half-life period of a reaction. Write the relationship between half-life period and initial concentration of zero order reaction.

24. Write the reactions involved in preparation of phenol from cumene.

25. Iron (III) catalyses the reaction between iodide and persulphate ions in the reaction:

$$2I^- + S_2O_8^{2-} \longrightarrow I_2 + 2SO_4^{2-}.$$

Explain the catalytic action of catalyst iron (III) by using chemical reactions.

PART-C

IV. Answer ANY THREE of the following. Each question carries three marks. **3 × 3 = 09**

26. Study of actinoids elements is more difficult? Give any three reasons.

27. For the complex, Mercury (I) tetrathiocyanato-S-cobaltate (III)

a) What is coordination number of Co.

b) Identify the ligand present in this complex.

c) Does ionization isomer for the following compound exist?

28. A student of 2nd PU performs two trails of reactions between KI and $KMnO_4$. In first trail student add small amount of acid to reaction mixture and in second trail student forgot to add acid to reaction mixture. Then student observed that different colour was obtained in first and second trail. Give reason for above observation. Write the possible chemical reactions to both the trails.

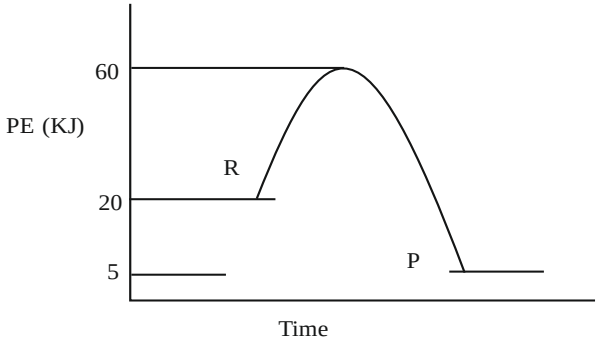
29. Define Crystal field splitting. Sketch the energy level diagram for the crystal field splitting of d-orbital in a tetrahedral complex.

30. What is the significance of synergic effect in metal carbonyls? How many bridged and non-bridged CO (carbonyl) ligands are present in octacarbonyldicobalt (0) complex compound?

V. Answer ANY TWO of the following. Each question carries three marks. **2 × 3 = 06**

31. Direct measurement of conductivity of ionic solutions by Wheatstone bridge is not possible. Give reasons. Suggest a remedy to resolve it.

32. For the reaction R(s) → P(g), the potential energy diagram is given below:



By observing the above diagram, answer the following.

a) What is the value of activation energy of the reaction?

b) What is the value of ΔH of the reaction?

c) Draw potential energy diagram for the reaction P(g) → R(s).

33. State Faraday's II law of electrolysis. Mention any two factors which determines the product of electrolysis.

34. Name the two components present in binary solution. Which component determines the physical state of binary solution?

PART-D

VI. Answer ANY FOUR of the following. Each question carries five marks. **4 × 5 = 20**

35. a) How do you distinguish between primary, secondary and tertiary amines by using Hinsberg's reagent with chemical equations involved?

b) Give the preparation of p-hydroxyazobenzene. (3+2)

36. a) Between methanal and ethanal, which would undergo aldol condensation? Write the chemical reaction involved in it.

b) Although phenoxide ion has more number of resonating structures than carboxylate ion, carboxylic acid is a stronger acid than phenol. Why? (3+2)

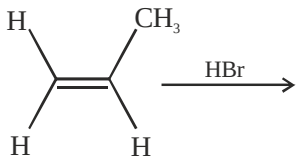
37. a) What is peptide bond? Give an example for dipeptide.

b) What are oxidoreductase enzymes? Name the enzyme that catalyses hydrolysis of maltose into glucose

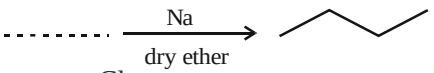
c) Give any one main natural source of Vitamin K? (2+2+1)

38. a) Complete the following equation:

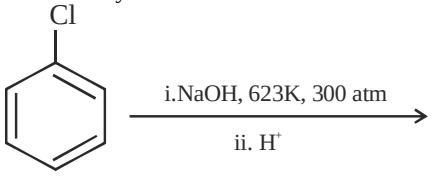
i)



ii)



iii)



b) Explain Saytzeff rule with an example. (3+2)

39. a) Give the chemical equation for the Conversion of propanenitriles into corresponding ketones by using phenyl magnesium bromide. Write the IUPAC name of the product.

b) Explain Hell-Volhard-Zelinsky (HVZ) reaction with an example. (3+2)

40. a) Write the reaction involved in the mechanism of acid catalyzed dehydration of alcohol to alkene.

b) Explain the preparation of anisole by Williamson synthesis. (3+2)

PART–E

(NUMERICAL PROBLEMS)

VII. Answer ANY THREE of the following. Each question carries three marks. 3 × 3 = 09

41. Show that in a first order reaction, time required for completion of 99.9% is 10 times of half-life ($t_{1/2}$) of the reaction.

42. A 5% solution (w/w) of cane sugar ($C_{12}H_{22}O_{11}$) in water has freezing point of 271 K. calculate the freezing point depression constant. Given freezing point of pure water is 273.15 K.

43. The molar conductivity of 0.025 mol L^{-1} methanoic acid is 46.1 S cm^2 mol^{-1}. Calculate its degree of dissociation. Given $\lambda^{o}_{(H^+)} = 349.6 \text{ S cm}^2 \text{ mol}^{-1}$ and $\lambda^{o}_{(HCOO^-)} = 54.6 \text{ S cm}^2 \text{ mol}^{-1}$.

44. Henry's law constant for the molality of methane in benzene at 298 K is 4.27 × 10^5 mm Hg. Calculate the mole fraction of methane in benzene at 298 K under 760 mm Hg.

45. Two electrolytic cells A and B containing solutions of $AgNO_3$ and $CuSO_4$ respectively are connected in series. A steady current of 1.5 amperes was passed through them until 1.45 g of silver is deposited at the cathode of cell A. How long did the current flow and What mass of copper was deposited? [Atomic mass of copper = 63.5 and silver = 108].

46. The rate constant of a reaction is given by: $\log k = 13.25 - \frac{(1.28\times10^3)K}{T}$. Calculate the activation energy and pre-exponential factor (A).

PART – F

(For visually challenged students only)

32. Give any three factors which affect a rate of reaction. 3

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
WEIGHTAGE FRAMEWORK FOR MQP 1: II PUC MATHEMATICS(35):2024-25

Chapter	CONTENT	Number of Teaching hours	PART A 1 mark		PART B 2 mark	PART C 3 mark	PART D 5 mark	PART E		Total
			MCQ	FB				6 mark	4 mark	
1	RELATIONS AND FUNCTIONS	9	1			1	1			9
2	INVERSE TRIGONOMETRIC FUNCTIONS	6	1		1	1				6
3	MATRICES	9	1			1	1			9
4	DETERMINANTS	12	1		1		1		1	12
5	CONTINUITY AND DIFFERENTIABILITY	20	2	1	1	1	1		1	17
6	APPLICATION OF DERIVATIVES	10	2	1	1	1				8
7	INTEGRALS	22	2		1	1	1	1		18
8	APPLICATION OF INTEGRALS	5					1			5
9	DIFFERENTIAL EQUATIONS	10		1	1		1			8
10	VECTOR ALGEBRA	11	2	1	1	1				8
11	THREE D GEOMETRY	8	1		1	1				6
12	LINEAR ROGRAMMING	7						1		6
13	PROBABILITY	11	2	1	1	1				8
	TOTAL	**140**	**15**	**5**	**9**	**9**	**7**	**2**	**2**	120

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD

Model Question Paper -1

II P.U.C : MATHEMATICS (35): 2024-25

Time : 3 hours **Max. Marks : 80**

Instructions :

1) *The question paper has five parts namely A, B, C, D and E. Answer all the parts.*

2) *PART A has 15 MCQ's ,5 Fill in the blanks of 1 mark each.*

3) *Use the graph sheet for question on linear programming in PART E.*

4) *For questions having figure/graph, alternate questions are given at the end of question paper in separate section for visually challenged students.*

PART A

I. Answer ALL the Multiple Choice Questions **15×1 = 15**

1. Let the relation R in the set A = { x ∈ Z: 0 ⩽ x ⩽ 12}, given by

R={(a, b):|a-b| is multiple of 4}, then [3], the equivalence class containing 3 is

A) {1,5,9} B) ϕ C)A D) {3, 7,11}

2. If $\cot^{-1} x = y$, then

(A) $0 \le y \le \pi$ (B) $0 < y < \pi$ (C) $-\frac{\pi}{2} \le y \le \frac{\pi}{2}$ (D) $-\frac{\pi}{2} < y < \frac{\pi}{2}$.

3. If $A = [a_{ij}]$ is a symmetric matrix of order $m \times n$ then

(A) m=n and a_{ij}=0 for i=j B) m=n and $a_{ij}=a_{ji}$ for all i,j

(C) $a_{ij}=a_{ji}$ for all i,j D) m=n and $a_{ij}=-a_{ji}$for all i,j

4. If $\begin{vmatrix} 3 & x \\ x & 1 \end{vmatrix} = \begin{vmatrix} 3 & 2 \\ 4 & 1 \end{vmatrix}$ then the value of x is equal to

A) 2 B) 4 C) 8 D) $\pm 2\sqrt{2}$.

5. Statement 1**:** Left hand derivative of $f(x) = |x|$ at x = 0 is -1.
Statement 2**:** Left hand derivative of f(x) at x = a is $\lim_{h \to 0} f(a-h)$

A) Statement 1 is true, and Statement 2 is false.
B) Statement 1 is true, and Statement 2 is true, Statement 2 is correct Explanation for Statement 1
C) Statement 1 is true, and Statement 2 is true, Statement 2 is not a correct Explanation for Statement 1
D) Statement 1 is false, and Statement 2 is false.

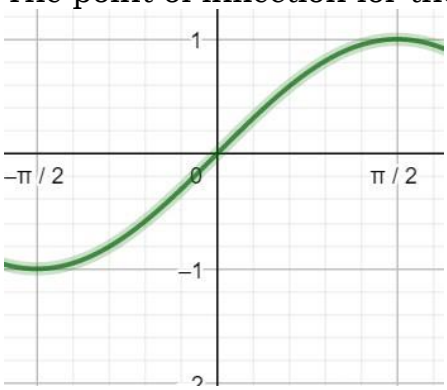
6. The derivative of log(secx+tanx) with respect to x is

A)secx B) tanx C) secx.tanx D) $\frac{1}{secx+tanx}$

7. The absolute maximum value of the function f given by $f(x) = x^3$, $x \in [-2, 2]$ *is*

A)-2 B)2 C)0 D)8

8. The point of inflection for the following graph is



A)$-\frac{\pi}{2}$ B) $\frac{\pi}{2}$ C) 0 D) point of inflection does not exist

9. $\int e^x \left(\frac{1}{x} - \frac{1}{x^2}\right) dx =$

A) $e^x + c$ B) $\frac{e^x}{x^2} + c$ (C) $\frac{e^x}{x} + c$ (D) $\frac{-e^x}{x} + c$

10. $\int x \sin x dx =$

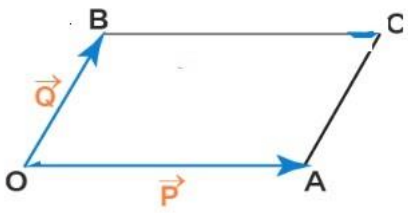
A) $-xcosx - sinx + c$ B) $xcosx + sinx + c$

C) $xcosx - sinx + c$ D) $-cosx - sinx + c$

11. The projection vector of the vector $\overrightarrow{AB}$ on the directed line l, if angle $\theta = \frac{\pi}{2}$ will be.

A) *Zero* vector. B) $\overrightarrow{AB}$ C) $\overrightarrow{BA}$ D) *Unit* vector.

12. For the given figure, $\vec{P} - \vec{Q}$ *is*



A) $\overrightarrow{OC}$ B) $\overrightarrow{CO}$ C) $\overrightarrow{BA}$ D) $\overrightarrow{AB}$

13. The direction cosines of negative z-axis.

(A) -1 , -1 , 0 (B) 0 , 0 , −1 (C) 0 , 0 , 1 (D) 1 , 1 , 0

14. If P(A) = $\frac{1}{2}$, P (B) = 0, then P (A | B) is

A) 0 B) $\frac{1}{2}$ C) 1 D) not defined

15. An urn contains 10 black and 5 white balls, 2 balls are drawn one after the other without replacement, then the probability that both drawn balls are black is

A) $\frac{3}{7}$ B) $\frac{4}{9}$ C) $\frac{2}{3}$ D) $\frac{2}{9}$

II. Fill in the blanks by choosing the appropriate answer from those given in the bracket (0, 1, 2, 3, 4, 5) **5 × 1 = 5**

16. The number of points in R for which the function f(x) = |x| + |x + 1| is not differentiable, is_____

17. The value of $\hat{\imath}.(\hat{\jmath} \times \hat{k}) - \hat{\jmath}.(\hat{k} \times \hat{\imath}) - \hat{k}.(\hat{\jmath} \times \hat{\imath})$ is_____

18. The sum of the order and degree of the differential equation.

$2x^2\left(\frac{d^2y}{dx^2}\right) - 3\left(\frac{dy}{dx}\right) + y$ *is*_____

19.The total revenue in rupees received from the sale of x unit of a product is given by R(x)=$2x^2 - 4x + 5$,The marginal revenue when x=2 is_____

20. If P(A) = $\frac{3}{k}$, P(A∩ B) = $\frac{2}{5}$ and P(B|A) = $\frac{2}{3}$, then k is _____

PART B

Answer any SIX questions: **6 × 2 = 12**

21. Show that $\sin^{-1}\left(2x\sqrt{1-x^2}\right) = 2\sin^{-1}(x)$, $-\frac{1}{\sqrt{2}} \leq x \leq \frac{1}{\sqrt{2}}$.

22. Show that points A (a, b + c), B (b, c + a), C (c, a + b) are collinear using determinants.

23. Find $\frac{dy}{dx}$, if $2x+3y=\sin x$.

24. Find the local maximum value of the function $g(x)=x^3-3x$.

25. Evaluate $\int \sin 3x \cos 4x \, dx$.

26. Find the general solution of the differential equation $\frac{ydx-xdy}{y} = 0$.

27. Find $|\vec{x}|$, if for a unit vector $\vec{a}$, $(\vec{x}-\vec{a})\cdot(\vec{x}+\vec{a}) = 15$.

28. Find the equation of the line in vector form that passes through the point with position vector $2\hat{\imath} - \hat{\jmath} + 4\hat{k}$ and is in the direction $\hat{\imath} + 2\hat{\jmath} - \hat{k}$.

29. Prove that if E and F are independent events, then so are the events E and F'.

PART C

Answer any SIX questions: **6×3 = 18.**

30. Show that the relation R in the set of real numbers **R** defined as $R = \{(a,b) : a \le b\}$, is reflexive and transitive but not symmetric.

31. Prove that $\cos^{-1}\frac{4}{5} + \cos^{-1}\frac{12}{13} = \cos^{-1}\frac{33}{65}$.

32. Express $\begin{bmatrix} 3 & 5 \\ 1 & -1 \end{bmatrix}$ as the sum of a symmetric and a skew symmetric matrix.

33. Find $\frac{dy}{dx}$ if $x = a(\cos\theta + \theta\sin\theta)$ and $y = a(\sin\theta - \theta\cos\theta)$.

34. Find the intervals in which the function $f(x)=(x-2)^3(x+4)^3$ is

a) increasing b)decreasing.

35. Find $\int \frac{x}{(x+1)(x+2)}dx$.

36. If $\vec{a}, \vec{b}$ & $\vec{c}$ are three vectors such that $|\vec{a}| = 3$, $|\vec{b}| = 4$, $|\vec{c}| = 5$ and each vector is orthogonal to sum of the other two vectors then find $|\vec{a} + \vec{b} + \vec{c}|$.

37. Find the distance between the lines $\vec{r} = 6\hat{\imath} + 2\hat{\jmath} + 2\hat{k} + \lambda(\hat{\imath} - 2\hat{\jmath} + 2\hat{k})$ and $\vec{r} = -4\hat{\imath} - \hat{k} + \mu(3\hat{\imath} - 2\hat{\jmath} - 2\hat{k})$.

38. Bag I contains 4 Red and 4 Black balls, Bag II contains 2 Red and 6 Black balls .One bag is selected at random and a ball is drawn is found to be Red. What is the probability that bag I is selected?

PART D

Answer any FOUR questions: **5× 4 = 20.**

39. State whether the function f: **R** $\to$**R** defined by $f(x) = 3 - 4x$ is one-one, onto or bijective. Justify your answer.

40. If $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}$, prove that $A^3 - 6A^2 + 7A + 2I = O$.

41. Solve the following system of equations by matrix method:
$2x + y - z = 1$; $x + y = z$ and $2x + 3y + z = 11$.

42. If $y = 3\cos(\log x) + 4\sin(\log x)$, prove that $x^2\frac{d^2y}{dx^2} + x\frac{dy}{dx} + y = 0$.

43. Find the integral of $\frac{1}{\sqrt{a^2 - x^2}}$ with respect to x and evaluate $\int \frac{dx}{\sqrt{7 - x^2}}$.

44. Solve the differential equation $\frac{dy}{dx}$ + y secx = tanx $(0 \leq x \leq \pi/2)$.

45. Find the area of the circle $x^2 + y^2 = a^2$ by the method of integration.

PART E

Answer the following questions:

46. Maximize and Minimise ; $z = 3x + 9y$ subject to constraints $x + 3y \leq 60,\ x + y \geq 10,\ x \leq y,\ x \geq 0,\ y \geq 0$ by graphical method.

OR

Prove that $\int_a^b f(x)\,dx = \int_a^b f(a+b-x)\,dx$ and hence evaluate $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{1}{1+\sqrt{\tan x}}\,dx$. **6**

47. Find the value of k so that the function $f(x) = \begin{cases} kx+1, & if\ \ x \leq 5 \\ 3x-5, & if\ \ x > 5 \end{cases}$, at $x = 5$ is a continuous function.

OR

If A = $\begin{bmatrix} 2 & 3 \\ 1 & -4 \end{bmatrix}$ and B = $\begin{bmatrix} 1 & -2 \\ -1 & 3 \end{bmatrix}$ then verify that $(AB)^{-1} = B^{-1}A^{-1}$.

4

PART F

(For Visually Challenged Students only)

8. The point of inflection of the function f(x)=sinx in the interval $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ is

A) $-\frac{\pi}{2}$ B) $\frac{\pi}{2}$ C) 0 D) point of inflection does not exist

12. In a parallelogram OACB, $\overrightarrow{OA} = \vec{P}$ and $\overrightarrow{OB} = \vec{Q}$, then $\vec{P} - \vec{Q}$ is

A) $\overrightarrow{OC}$ B) $\overrightarrow{CO}$ C) $\overrightarrow{BA}$ D) $\overrightarrow{AB}$

****

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESEMENT BOARD
MODEL QUESTION PAPER - 1 (2024 - 25)
II PU SUBJECT – BIOLOGY (36)

Duration: 3hr **Max. Marks: 70**

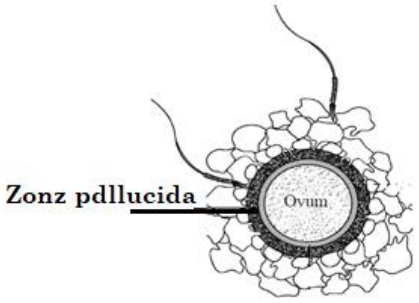
General Instruction:

- **This Question paper consists of parts A, B, C, D and E**
- **Part – A consists of I and II and Part D consists of V and VI**
- **All the parts are compulsory**
- **The answers for Part – A, written in the first two pages of the answer booklet are only considered for evaluation**
- **Part – E consists of questions for visually challenged students only**

PART – A

I. Select the correct alternative from the choices given below: **15 x 1 = 15**

1. Statement I: Apomixis is the production of seeds from unfertilized ovules
   Statement II: Embryos produced from apomictic seeds are not generally identical to the parent plant.
   a) Statement I is true, statement II is false
   b) Statement I is false, statement II is true
   c) Statement I and statement II both are true
   d) Statement I and statement II both are false
2. Choose the correct option from the table given below for the formation and dissolution of the labeled part in the given diagram.



	Formed by	Dissolved
a)	Primary oocyte	before fertilisation
b)	Primary oocyte	after fertilisation
c)	Secondary oocyte	before fertilisation
d)	Secondary oocyte	after fertilisation

3. Out of the options given below choose the correct stage for transfer to the fallopian tube for successful IVF results.
   a) Embryo up to 8 blastomeres
   b) embryo up to 16 blastomeres
   c) Embryo up to 32 blastomeres
   d) Embryo up to 32 blastomeres
4. 37.2% recombinant *Drosophila* progeny obtained in the T. H. Morgan's dihybrid cross experiment with the phenotypes red eye color, normal body and white eye color, miniature body is due to;
   a) Loosely linked and shorter distance between genes
   b) Tightly linked and shorter distance between genes
   c) Loosely linked and longer distance between genes
   d) Tightly linked and longer distance between genes

5. The number of nucleotide pairs present in the DNA of the primary oocyte of a new born in human
   a) 3.3×10^9 b) 6.6×10^9 c) 13.2×10^9 d) 3.3×10^7
6. The factors that affect Hardy – Weinberg equilibrium are listed below;
   i) Crossing over, Independent assortment
   ii) Crossing over, Mutation,
   iii) Genetic drift, Crossing over
   iv) Independent assortment, Mutation
   Choose the correct options:
   a) i, ii and iii b) ii, iii and iv c) i, iii and iv d) i, ii, iii and iv
7. Interferons are most effective in making non-infected cells resistant against the spread of which of the following diseases in humans?
   a) AIDS b) Ascariasis c) Ringworm d) Amoebiasis
8. The human host cells in which the gametocytes of malarial parasite develop are
   a) Thrombocytes b) Liver cells c) Erythrocytes d) Leucocytes
9. Which of the following water samples in the table given below will have a higher concentration of organic matter?

Water Sample	Level of pollution	Value of BOD
a)	High	High
b)	Low	Low
c)	Low	High
d)	High	Low

10. The steps of Recombinant DNA technology are given below:
    i) Insertion of recombinant DNA into the host organism
    ii) Amplification of gene of interest using PCR
    iii) Cutting of DNA at specific locations
    iv) Obtaining the foreign product
    v) Downstream processing
    vi) Isolation of DNA
    Choose the correct option for the sequential steps of Recombinant DNA technology.
    a) vi, ii, iii, iv, v, i b) vi, i, iii, iv, v, ii c) vi, ii, iii, iv, v, i d) vi, iii ii, i, iv,, v,
11. DNA in a clone of cells followed by detection using autoradiography is called
    a) Template b) Probe c) Transcript d) Cistron
12. Jeeva was growing a bacterial colony in a culture flask under ideal laboratory conditions where the resources sooner or later become limiting. Which of the following equations will represents the correct growth in this case?
    a) $dN/dt = rN$ b) $dN/dt = KN$ c) $dN/dt = rN (K - N/K)$ d) $dN/dt = rN (K + N/K)$
13. Which of the following food chains is the major conduit for the energy flow in terrestrial and aquatic ecosystems respectively?

	Terrestrial	Aquatic
a)	Grazing	Grazing
b)	Detritus	Detritus
c)	Detritus	Grazing
d)	Grazing	Detritus

14. Which of the following is not an example of *in-situ* conservation?
    a) National park and seed bank

b) National park and Zoological parks
c) Seed bank and sacred groove
d) Seed bank and Botanical gardens

15. Exploration of molecular, genetic and species level diversity for novel products of economic importance is
a) Biofortification b) Bioprocessing c) Bioprospecting d) Biodiversity

II. Fill in the blanks by choosing the appropriate word/Words from those given below: 5 x 1 = 5

(Competent cells, Bacteria, non-living molecule, vectors, Competent cells, Recombinant cells)

16. The interstitial space in seminiferous tubules consists of immunologically ----------
17. The version of biogenesis is accepted by majority, as the first form of life arose slowly through evolutionary forces from ----------.
18. Filariasis pathogens are transmitted to a healthy person through ----------
19. Swiss cheese with large holes is produced from ----------
20. The host cells which have the ability to incorporate foreign DNA within them are called ----------

PART - B

III. Answer any FIVE of the following questions in 3 – 5 sentences wherever applicable: 5 x 2 = 10

21. Complete the tabular column given below with respect to the male gametophyte of angiosperms

Cells of the male gametophyte		
Shape of nucleus of the cells		

22. Mention the two medical grounds on which the pregnancies are subjected to termination.
23. Derive the phenotypic and genotypic ratio of a cross between AB blood group parents.
24. Which sequences of bases transcribed from DNA are found both in hnRNA and mRNA?
25. "Potato tubers and Sweet potato tubers are the result of convergent evolution". Justify the statement.
26. What are biofertilizers? Mention its significance.
27. Name any four recent extinct organisms as per IUCN Red list.

PART - C

IV. Answer any FIVE of the following questions in 40 – 80 words each wherever applicable: 5 x 3 = 15

28. Draw a labeled diagram of the fertilised female gametophyte and mention the ploidy of any one of the products of double fertilization.
29. Parturition is induced by complex neuroendocrine mechanism. Comment.
30. The popular and effective contraceptives include IUDs. Mention the types of IUDs with an example of each.
31. Write the salient feature of the following human ancestors;
i) Dryopithecus ii) Ramapithecus iii) Australopithecus iv) *Homo habilis*
v) Neanderthal man vi) *Homo erectus*
32. Describe any three properties of Cancerous cells.
33. Complete the below given tabular column with appropriate answers.

Name of the Microbe	Name of the Product	Uses
A	Lactic acid	B
Methanogens	C	D
E	F	Treatment of bacterial diseases

34. Represent diagrammatically the pyramid of number in a Terrestrial ecosystem.

PART – D

V. Answer any FOUR of the following questions in about 200–250 words each wherever applicable: 4x5 = 20

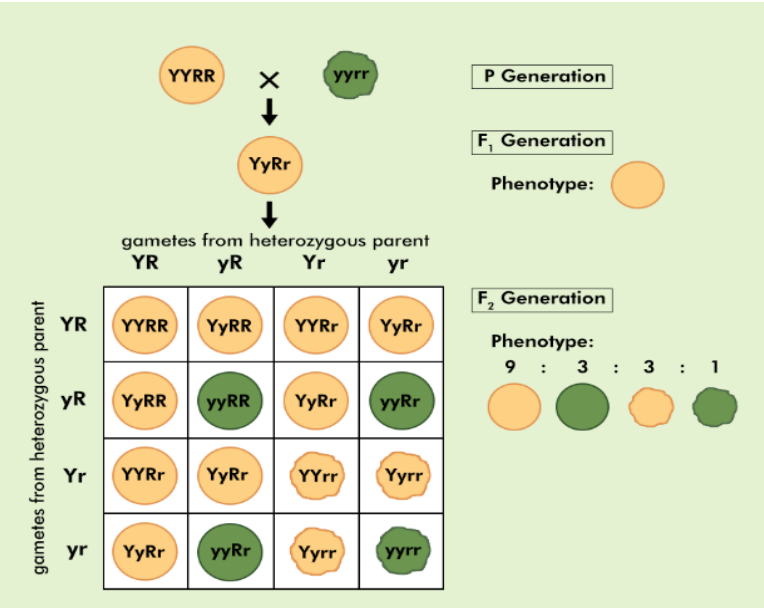
35. Flowering plants have developed many devices to discourage self-pollination and encourage cross-pollination. Comment.
36. Draw a labeled diagrammatic sectional view of the human female reproductive system.
37. Few autosome linked recessive gene blood diseases occur in human population. Among them some are related to qualitative and quantitative problem of synthesizing blood proteins. Explain.
38. DNA replication is fast, accurate, energetically expensive, substrate and enzyme dependent, initiated from specific site and cannot uncoil on its entire length. Explain the process of DNA replication considering all these features.
39. Some drug bottles had their name labels missing in a drug store of a hospital. The staff needs to identify the drugs with their actions still written on them. Analyse their actions listed below and identify the name of each drug and also the source of each one of them.

DRUG	EFFECT
Drug 1	Used by doctors as sedative and pain killer
Drug 2	Help patients to cope with insomnia and depression
Drug 3	Increases blood pressure and heart rate of consumer
Drug 4	Act as depressant and slows down body functions
Drug 5	Affects cardiovascular system of the body

40. Transgenic animals provide innumerable benefits to human beings. Justify the statement with common reasons.
41. Explain the fascinating forms of interactions in;
    a) Brood parasitism (3M)
    b) Sexual deceit (2M)

VI. Answer any ONE of the following questions in about 200–250 words each wherever applicable: 1 x 5= 5

42. Results of a Mendelian dihybrid cross are represented in the form of Punnett square.



Answer the following questions with respect to the results of a dihybrid cross.

a) Number of parental types progeny
b) Number of recombinant progeny
c) Number of homozygous recessive progeny

d) Number of homozygous dominant progeny
e) Number of homozygous progeny for both the traits
f) Number of heterozygous progeny for both the traits
g) Number of pure line progeny
h) Number of homozygous progeny for single trait
i) Number of heterozygous progeny for single trait
j) Number of recessive progeny for single trait

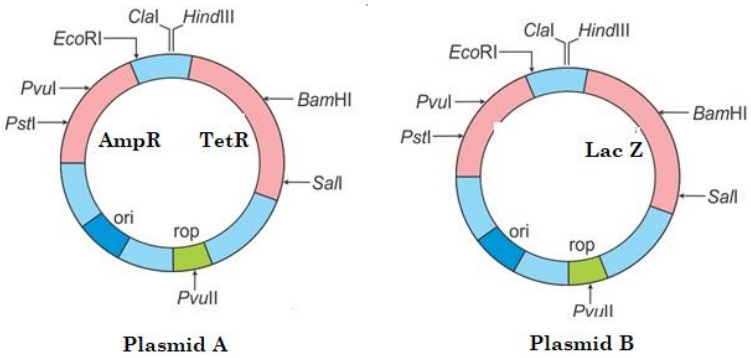
43. Given below are sequences of nucleotides in a particular mRNA and amino acids coded by it;

5'- AUG UUU UUC GAG UUA GUG UAA-3'

met phe phe glu leu val

Write the properties of genetic code that can be correlated from the above given data

44. Given below are the diagrams of plasmids A and B, observe meticulously and answer the questions that follows;



a) Which plasmid is/are you select for cloning and why? (1M)

b) What is insertional inactivation? (1M)

c) Will the number of culture plating you should make is same or different to select recombinant if insertional inactivation is possible. Comment (3M)

PART – E

(FOR VISUALLY CHALLENGED STUDENTS ONLY)

2. Choose the correct option for the formation and dissolution of the zona pellucida.

	Formed by	Dissolved
a)	Primary oocyte	before fertilisation
b)	Primary oocyte	after fertilisation
c)	Secondary oocyte	before fertilisation
d)	Secondary oocyte	after fertilisation

42. Represent schematically the results of incomplete dominance in snapdragon plant taking the flower color character.

44. a) Mention the tools of genetic engineering. (2M)

b) What is insertional inactivation? Mention its significance. (2M)

c) What is a recombinant protein? (1M)

****

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಳಿ

ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ – 2

ತರಗತಿ : ದ್ವಿತೀಯ ಪಿಯುಸಿ **ಶೈಕ್ಷಣಿಕ ವರ್ಷ :** 2024–25

ವಿಷಯ: ಕನ್ನಡ (01) **ಗರಿಷ್ಠ ಅಂಕಗಳು :** 80

ಸಮಯ: 3 ಗಂಟೆಗಳು **ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ :** 52

ಸೂಚನೆ :
"ಅ– ವಿಭಾಗ"ದಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳಿಗೆ ಪ್ರಥಮವಾಗಿ ಬರೆದ ಉತ್ತರಗಳನ್ನು ಮಾತ್ರವೇ ಮೌಲ್ಯಮಾಪನದಲ್ಲಿ ಪರಿಗಣಿಸಲಾಗುವುದು.

ಅ– ವಿಭಾಗ

(ಅ) ಈ ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನೀಡಿರುವ ಉತ್ತರಗಳಲ್ಲಿ ಸರಿಯಾದುದನ್ನು ಆರಿಸಿ ಬರೆಯಿರಿ. **10x1=10**

1) ರಾವಣನ ರೂಪು ಸೀತಾ
ದೇವಿಗೆ ತೃಣಕಲ್ಪಮಾಯ್ತು ಪತಿಭಕ್ತಿಯೊಳಾ
ರೀ ವನಿತೆಯ ತೆರದಿಂ ಸ
ದ್ಭಾವಮನೊಳಕೊಂಡ ಪುಣ್ಯವತಿಯರ್ ಸತಿಯರ್
ಈ ಪದ್ಯಭಾಗಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಕೆಳಗಿನ ಯಾವ ಹೇಳಿಕೆ ಸರಿಯಾಗಿದೆ
ಅ) ಎಲ್ಲ ಸತಿಯರೂ ಪುಣ್ಯವತಿಯರೆ
ಆ) ಸೀತೆಗೆ ರಾಮನಲ್ಲಿ ಹೆಚ್ಚು ಭಕ್ತಿ
ಇ) ಸೀತೆ ರಾಮನಲ್ಲಿ ಸದ್ಭಾವವೊಳಗೊಂಡ ಪುಣ್ಯವತಿ
ಈ) ಪತಿಭಕ್ತಿಯಲ್ಲಿ ಸದ್ಭಾವವು ತೃಣ ಸಮಾನ

2) ಗುರು ಹೇಗೆ ವರ್ತಿಸಬಾರದು?
ಅ) ಲಘುವಾಗಿ ಆ) ವಿನಯವಂತನಾಗಿ
ಇ) ಘನತೆಯುಳ್ಳವನಾಗಿ ಈ) ಹಸನ್ಮುಖಿಯಾಗಿ

3) ಹಗೆಯನ್ನು ಏನೆಂದು ಉಪೇಕ್ಷಿಸಬಾರದು?
ಅ) ವೀರನೆಂದು ಆ) ಶತ್ರುವೆಂದು
ಇ) ಬಾಲಕನೆಂದು ಈ) ಸ್ನೇಹಿತನೆಂದು

4) ದುರ್ಗಂಧ ಬಿಡದಿರುವುದು
ಅ) ಆನೆ ಆ) ಊರಹಂದಿ
ಇ) ಗೂಬೆ ಈ) ಕೋತಿ

5) ಹುಸಿನಿದ್ದೆ ಸಾಕು ಎಂದು ಕವಿ ಹೇಳಿರುವುದು
ಅ) ತೂಕಡಿಸುವವರಿಗೆ ಆ) ಮುದುಕರಿಗೆ
ಇ) ಗಾಢನಿದ್ರೆಯಲ್ಲಿರುವವರಿಗೆ ಈ) ಮಕ್ಕಳಿಗೆ

6) ನಾಗರಿಕತೆಯ ಉನ್ನತಿಯ ಆದರ್ಶದೊಡನೆ ಆರಂಭವಾಗುವ ಅಭಿವೃದ್ಧಿಯು ಏನಾಗುತ್ತದೆ?
ಅ) ದೂರದೃಷ್ಟಿ ಒಳನೋಟವಿರುವ ಅಭಿವೃದ್ಧಿಯಾಗಿರುತ್ತದೆ.
ಆ) ಮನುಕುಲದ ಪತನಕ್ಕೆ ಕಾರಣವಾಗುತ್ತದೆ.
ಇ) ಮಾನವ ಸಾಮರ್ಥ್ಯಕ್ಕೆ ದಕ್ಕಿದ ವಿಜಯಪತಾಕೆಯಾಗಿರುತ್ತದೆ.
ಈ) ಸದೃಢ ಆರ್ಥಿಕತೆಗೆ ಸಹಕಾರಿಯಾಗಿದೆ.

7) ಹಳ್ಳಿಯ ಚಹಾ ಫಳಾರದ ಅಂಗಡಿಯ ಹೆಸರು

ಅ) ಚಂದ್ರಭವನ ಆ) ಇಂದ್ರಭವನ

ಇ) ರಾಜಭವನ ಈ) ಗುರುಭವನ

8) "ಅಲ್ರೀ ಲೈನ್ ಮೇಲೆ ಬಿದ್ದ ಮರ ತೆಗೆದು ಹಾಕೋದು ಕಾನೂನುಬಾಹಿರ ಕೆಲಸ ಅಂತ ನಿಮ್ಮ ಬಾಯಲ್ಲೇ ನಾನು ಕೇಳ್ತಿರೋದು. ನಿಮ್ಮ ಡಿಪಾರ್ಟ್ಮೆಂಟಿನ ಮರ ಅವನ ಡಿಪಾರ್ಟ್ಮೆಂಟಿನ ಕಂಬದ ಮೇಲೆ ಬಿದ್ದರೆ ಅವನು ಅದನ್ನು ತೆಗೆದುಹಾಕಬೇಕೋ ಬೇಡವೋ ಹೇಳಿ?" ಲೇಖಕರ ಈ ಮಾತುಗಳಿಗೆ ಕೆಳಗಿನ ಯಾವ ಹೇಳಿಕೆ ಸೂಕ್ತ ಸ್ಪಷ್ಟನೆಯಾಗಿದೆ?

ಅ) ಮರ ತೆಗೆಯೋದು ಕಾನೂನುಬಾಹಿರ ಕೆಲಸ.

ಆ) ಮರ ಬೀಳುತ್ತಲೇ ಇರುತ್ತೆ ತೆಗೆಯುವುದು ನಿಮ್ಮ ಕರ್ತವ್ಯ.

ಇ) ಲೈನ್ ಮೇಲೆ ಮರ ಬೀಳೋದು ಸಾಮಾನ್ಯ ಸಂಗತಿ.

ಈ) ಲೈನ್ ಮೇಲೆ ಬಿದ್ದ ಮರ ತೆಗೆಯೋದು ತಪ್ಪಲ್ಲ.

9) ಆನೆ ಇಲ್ಲದ್ದರಿಂದ ವೇಲಾಯುಧ ಕೆಲಸಕ್ಕೆ ಸೇರಿದ್ದು

ಅ) ಕೃಷ್ಣೇಗೌಡರ ಹತ್ತಿರ ಆ) ಶಿವೇಗೌಡರ ಹತ್ತಿರ

ಇ) ಗೂಳೂರು ಮಠದಲ್ಲಿ ಈ) ಶಿವನೂರು ಮಠದಲ್ಲಿ

10) ಪೋಲೀಸರು ಏನೆಂದು ಮಹಜರು ಬರೆದುಕೊಂಡರು?

ಅ) ಹೆಣ ಸಿಕ್ಕಿದೆ ಆದರೆ ಕೋವಿ ಸಿಗಲಿಲ್ಲ. ಆ) ಕೋವಿಯೂ ಸಿಕ್ಕಿಲ್ಲ, ಹೆಣವೂ ಸಿಕ್ಕಿಲ್ಲ.

ಇ) ಕೋವಿ ಸಿಕ್ಕಿದೆ ಆದರೆ ಹೆಣ ಸಿಗಲಿಲ್ಲ. ಈ) ಕೋವಿಯೂ ಸಿಕ್ಕಿದೆ, ಹೆಣವೂ ಸಿಕ್ಕಿದೆ.

(ಆ) ಬಿಟ್ಟ ಸ್ಥಳಗಳಿಗೆ ಆವರಣದಲ್ಲಿ ಕೊಟ್ಟಿರುವ ಉತ್ತರಗಳಲ್ಲಿ ಸೂಕ್ತವಾದುದನ್ನು ಆರಿಸಿ ಬರೆಯಿರಿ. **5X1=05**

(ಅದೃಷ್ಟ, ಶ್ರೀರಾಮಾಶ್ವಮೇಧ, ಪ್ರಶ್ನೆ ಕೇಳುವುದು, ದ್ವೀಪಜೀವಿ, ಕಿಡ್ನಿ ಸ್ಟೋನ್, ಒಕ್ಕಲ ಮಕ್ಕಳ)

11) _____ ಬಗ್ಗೆ ತಿಳಿಯಲು ಲೇಖಕಿ ಕಮಲಮ್ಮ ಮೇಡಂ ಅವರನ್ನು ಭೇಟಿ ಮಾಡಿದರು.

12) ಸ್ಥಳೀಯ ಭಾಷೆ ಕಲಿಯದ ಅನ್ಯಭಾಷಿಕರು _____ ಆಗುತ್ತಾರೆ.

13) ಧಣಿ ಎಂದಿಗೂ _____ನಂಬುವುದಿಲ್ಲ.

14) ವಿಜ್ಞಾನದ ಅಡಿಪಾಯ _____.

15) ಮನೋರಮೆ _____ ಕತೆ ಹೇಳಬೇಕೆಂದು ಕೇಳಿದಳು.

(ಇ) ಹೊಂದಿಸಿ ಬರೆಯಿರಿ **5X1=05**

16) ಅ) ಕುಮಾರವ್ಯಾಸ

ಆ) ಜಾಲಿಯ ಮರದಂತೆ

ಇ) ಒಂದು ಹೂ ಹೆಚ್ಚಿಗೆ ಇಡುತೀನಿ

ಈ) ಚಿಟ್ಟೆ ಮತ್ತು ಜೀವಯಾನ

ಉ) ಒಮ್ಮೆ ನಗುತ್ತೇವೆ

1) ಗರತಿಯ ಹಾಡು

2) ಲಲಿತಾ ಸಿದ್ಧಬಸವಯ್ಯ

3) ಹತ್ತಿ_ಚಿತ್ತ...ಮತ್ತು_

4) ಇನ್ನು ಹುಟ್ಟದೆಯಿರಲಿ ನಾರಿಯರೆನ್ನವೊಲು

5) ಸುಕನ್ಯಾ ಮಾರುತಿ

6) ಪುರಂದರದಾಸರು

ಆ – ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು – ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 3X2=06

17) ರಾವಣನು ಅಂತಿಮವಾಗಿ ಯಾವ ನಿರ್ಧಾರಕ್ಕೆ ಬರುತ್ತಾನೆ?

18) ಉಳಿದ ನಾಲ್ವರು ಪಾಂಡವರ ಭಿನ್ನ ಸ್ವಭಾವಗಳ ಬಗ್ಗೆ ದ್ರೌಪದಿಯ ಅಭಿಪ್ರಾಯವೇನು?

19) ಕವಿಯ ಪ್ರಕಾರ ಮುಪ್ಪು ಮತ್ತು ಹರೆಯದ ನಡುವಿನ ವ್ಯತ್ಯಾಸವೇನು?

20) ಮುದುಕ ಏನೆಂದು ಗೋಗರೆಯುತ್ತಾನೆ?

(ಆ) ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು – ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 2X2=04

21) ಕೊನೆಯಲ್ಲಿ ಬಸಲಿಂಗನಿಗೆ ಏನೆಂದು ನಿಶ್ಚಿತವಾಗತೊಡಗಿತ್ತು?

22) ಕರ್ನಾಟಕದಲ್ಲಿ ಕನ್ನಡಕ್ಕೆ ಯಾವ ಸ್ಥಾನವಿರಬೇಕೆಂದು ಹಾ ಮಾ ನಾಯಕ ಅಪೇಕ್ಷಿಸಿದ್ದಾರೆ?

23) ಕಲಾಂ ಅವರು ತಾವು ಆತ್ಮಕತೆ ಬರೆದುದು ಏತಕ್ಕಾಗಿ ?

24) ಹಳ್ಳಿಯ ಚಹಾದ ಅಂಗಡಿಯೆಂದರೆ ಹೇಗಿರುತ್ತದೆ?

(ಇ) ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು – ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 3X2=06

25) ಮಠದವರಿಗೆ ಆನೆಗಿಂತ ವೇಲಾಯುಧನನ್ನು ಸಾಕಲು ತ್ರಾಸಾದುದೇಕೆ?

26) ಫಾರೆಸ್ಟ್ ಡಿಪಾರ್ಟಮೆಂಟಿನ ನಂಬರ್ ಒನ್ ಎನಿಮಿಗಳು ಯಾರು ಯಾರು?

27) ದುರ್ಗಪ್ಪ ತನ್ನ ಕೆಲಸ ಅತ್ಯಂತ ಅಪಾಯಕಾರಿಯೆಂದು ಹೇಗೆ ವಿವರಿಸುತ್ತಾನೆ?

28) ಆನೆಯನ್ನು ಹದ್ದುಬಸ್ತಿನಲ್ಲಿಡುವುದರ ಬಗ್ಗೆ ವೇಲಾಯುಧನ ಅಪ್ಪ ಏನು ತಿಳಿಸಿದ್ದ?

ಇ – ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಎರಡು ವಾಕ್ಯಗಳ ಸಂದರ್ಭ ಸೂಚಿಸಿ ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ. 2X3=06

29) ಕೆಲವಂ ಬಲ್ಲವರಿಂದ ಕಲ್ತು

30) ಹಬ್ಬಲಿ ಅವರ ರಸಬಳ್ಳಿ

31) ಮನ್ನಿಸಲಿ ನಿಮ್ಮನ್ನ ಆ ದೇವರೆ!

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ವಾಕ್ಯದ ಸಂದರ್ಭ ಸೂಚಿಸಿ ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ. 1X3=03

32) ಅದು ಅವರು ಆವರೆಗೂ ನೋಡಿರದ ಪ್ರಾಣಿ

33) ನೋಡು ನಿನ್ನ ಎದುರು ಎರಡು ಆಯ್ಕೆಗಳಿವೆ

34) ಕನ್ನಡಂ ಕತ್ತುರಿಯಲ್ತೆ

(ಇ) ಯಾವುದಾದರೂ ಒಂದು ವಾಕ್ಯದ ಸಂದರ್ಭ ಸೂಚಿಸಿ ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ. 1X3=03

35) ಆನೆ ಸಾಕುವುದು ಎಲೆಕ್ಷನ್ನಿಗೆ ನಿಂತ ಹಾಗೆ

36) ನಂಗೇನು ಈ ನಾಯಿಗಳನ್ನು ಕಂಡರೆ ಪ್ರೀತಿನಾ ಸ್ವಾಮಿ!

ಈ – ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಐದಾರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 2X4=08

37) ರಾವಣನು ಬಹುರೂಪಿಣೀ ವಿದ್ಯೆಯನ್ನು ಒಲಿಸಿಕೊಂಡ ಸಂದರ್ಭವನ್ನು ವಿವರವಾಗಿ ಬರೆಯಿರಿ.

38) ಶಿವಪಥವನ್ನರಿಯದವನ ಭಕ್ತಿ ನಿರರ್ಥಕವೆಂದು ಹೇಳಿದ ಬಸವಣ್ಣನ ವಿಚಾರಗಳನ್ನು ಉದಾಹರಣೆಗಳ ಮೂಲಕ ಸ್ಪಷ್ಟಪಡಿಸಿ.

39) ಮುಂಬೈಜಾತಕ ಕವಿತೆಯ ಹಿನ್ನಲೆಯಲ್ಲಿ ನಗರ ಜೀವನವನ್ನು ವಿಶ್ಲೇಷಿಸಿ.

40) ಈ ಕೆಳಗಿನ ಪದ್ಯಭಾಗವನ್ನು ಅರ್ಥೈಯಿಸಿಕೊಂಡು ಕೆಳಗಿನ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

ರಮಣ ಕೇಳುಳಿದವರು ತನ್ನನು
ರಮಿಸುವರು ಮಾನಾರ್ಥವೆನೆ ನಿ
ರ್ಗಮಿಸುವರು ನೀನಲ್ಲದುಳಿದವರುಚಿತ ಬಾಹಿರರು
ಮಮತೆಯಲಿ ನೀ ನೋಡು ಚಿತ್ತದ
ಸಮತೆಯನು ಬೀಳ್ಕೊಡು ಕುಠಾರನ
ಯಮನ ಕಾಣಿಸಿ ಕರುಣಿಸೆಂದಳು ಕಾಂತೆ ಕೈಮುಗಿದು

ಅ) ಪದ್ಯಭಾಗದಲ್ಲಿ ಮಾನಾರ್ಥವೆನೆ ನಿರ್ಗಮಿಸುವ ಆ ಉಳಿದವರು ಯಾರು? (1 ಅಂಕ)

ಆ) ನೀನೆ ಸೂಕ್ತವಾದವನೆಂದು ಯಾರನ್ನು ಕುರಿತು ಹೇಳಲಾಗಿದೆ? (1 ಅಂಕ)

ಇ) ದ್ರೌಪದಿ ಕೈಮುಗಿದು ಏನೆಂದು ಪ್ರಾರ್ಥಿಸುತ್ತಿದ್ದಾಳೆ ವಿವರಿಸಿ? (2 ಅಂಕ)

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಐದಾರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 1X4=04

41) ಬಸಲಿಂಗ ಡಾ. ತಿಮ್ಮಪ್ಪನವರ ಸೂಚನೆಗಳನ್ನು ಪಾಲಿಸದೆ ಇರಲು ಕಾರಣವೇನು?

42) ಚಿನ್ನಮ್ಮ ಬೆಳ್ಳಿಲೋಟವನ್ನು ಮತ್ತೆ ಹೊಳಗೆ ಎಸೆಯಲು ಕಾರಣವೇನು? ವಿಶ್ಲೇಷಿಸಿ.

(ಇ) ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಐದಾರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. 1X4=04

43) ಪೋಸ್ಟಮನ್ ಜಬ್ಬಾರನ ಬವಣೆಗಳನ್ನು ನಿರೂಪಕರು ಹೇಗೆ ವಿವರಿಸಿದ್ದಾರೆ?

44) ಟೆಲಿಫೋನ್ ಲೈನ್ ಮನ್ ತಿಪ್ಪಣ್ಣನ ಸಾವು ಹೇಗಾಯಿತು ಎಂಬುದನ್ನು ನಿಮ್ಮ ಮಾತುಗಳಲ್ಲಿ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ಬರೆಯಿರಿ.

ಊ – ವಿಭಾಗ
(ಭಾಷಾಭ್ಯಾಸ)

(ಅ) ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಯಾವುದಾದರೂ ನಾಲ್ಕಕ್ಕೆ ಸೂಚನೆಗೆ ಅನುಗುಣವಾಗಿ ಉತ್ತರಿಸಿ. 4X2=08

45) ಕೆಳಗಿನ ಎರಡು ಪದಗಳಿಗೆ **ಸಮಾನಾರ್ಥ**ಗಳನ್ನು ಬರೆಯಿರಿ.

ಚಿತ್ತ, ಮಾರ, ತಾಳ್ಮೆ

46) ಕೆಳಗಿನ ಎರಡು ಶಬ್ದಗಳಿಗೆ **ತದ್ಭವ** ರೂಪ ಬರೆಯಿರಿ.

ದೃಷ್ಟಿ, ಯೋಗಿ, ಸಂಸ್ಕೃತ

47) ಕೆಳಗಿನ ಎರಡು ಪದಗಳ **ಗುಣವಾಚಕ**ಗಳನ್ನು ಗುರುತಿಸಿ, ಬರೆಯಿರಿ.

ಮಣಆಯಾಸ, ದುರ್ಜನ, ಕೆನೆಹಾಲು,

48) ಕೆಳಗಿನ ಎರಡು ಕ್ರಿಯಾಪದಗಳ **ನಿಷೇಧ ರೂಪ**ಗಳನ್ನು ಬರೆಯಿರಿ.

ಹಾಡುವಳು, ತಿನ್ನುವನು, ನಿಲ್ಲುವುದು

49) ಕೆಳಗಿನ ಎರಡು **ನುಡಿಗಟ್ಟು**ಗಳನ್ನು ನಿಮ್ಮ ಸ್ವಂತ ವಾಕ್ಯಗಳಲ್ಲಿ ಬಳಸಿ ಬರೆಯಿರಿ.

ಮೊರೆಹೋಗು, ಕಾಲುಕೀಳು, ತಲೆಹಾಕು

50) ಯಾವುದಾದರೂ ಎರಡು **ಅನ್ಯದೇಶ್ಯ** ಪದಗಳನ್ನು ಬರೆಯಿರಿ.

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ವಿಷಯವನ್ನು ಕುರಿತು ಪ್ರಬಂಧವನ್ನು ಬರೆಯಿರಿ. 1X4=04

51) ಸ್ತ್ರೀ ಭ್ರೂಣ ಹತ್ಯೆಯಿಂದ ಎದುರಾಗುವ ಸಮಸ್ಯೆಗಳು

ಅಥವಾ

ಅರಣ್ಯ ಮತ್ತು ವನ್ಯಜೀವಿ ಸಂರಕ್ಷಣೆಯಲ್ಲಿ ನಾಗರಿಕ ಸಮಾಜದ ಪಾತ್ರ.

(ಇ) ಯಾವುದಾದರೂ ಒಂದು ವಿಷಯವನ್ನು ಕುರಿತು ಪತ್ರ ಬರೆಯಿರಿ. 1X4=04

52) ರಾಜು/ರಮ್ಯ, ದ್ವಿತೀಯ ಪಿಯುಸಿ, ಕುವೆಂಪು ಪದವಿ ಪೂರ್ವ ಕಾಲೇಜು, ಜಯನಗರ, ಮೈಸೂರು, ಈ ವಿಳಾಸದಲ್ಲಿರುವವರು ನೀವೆಂದು ತಿಳಿದು ಕುಸುಮ/ವಿಜಯ್, ದ್ವಿತೀಯ ಪಿಯುಸಿ, ಸರ್ಕಾರಿ ಪದವಿ ಪೂರ್ವ ಕಾಲೇಜು, ರಾಜಾಜಿನಗರ, ಬೆಂಗಳೂರು ಈ ವಿಳಾಸದಲ್ಲಿರುವ ನಿಮ್ಮ ಗೆಳೆಯ/ಗೆಳತಿಗೆ ವಾರ್ಷಿಕ ಪರೀಕ್ಷೆಗೆ ನೀವು ಮಾಡಿಕೊಂಡಿರುವ ಸಿದ್ಧತೆಯನ್ನು ಕುರಿತು ಪತ್ರ ಬರೆಯಿರಿ.

ಅಥವಾ

ಪ್ರದೀಪ/ಸುನೀತ, ದ್ವಿತೀಯ ಪಿಯುಸಿ, ಜೆ. ಎಸ್. ಎಸ್ ಪದವಿ ಪೂರ್ವ ಕಾಲೇಜು, ಮಣಿಪಾಲ, ಉಡುಪಿ ಇದು ನಿಮ್ಮ ವಿಳಾಸ ಎಂದು ತಿಳಿದು ಮಣಿಪಾಲದಲ್ಲಿರುವ ಸ್ಟೇಟ್ ಬ್ಯಾಂಕ್ ಆಫ್ ಇಂಡಿಯಾ ಶಾಖೆಯ ವ್ಯವಸ್ಥಾಪಕರಿಗೆ ನಿಮ್ಮ ಉಳಿತಾಯ ಖಾತೆಯನ್ನು ತೆರೆಯುವಂತೆ ಕೋರಿ ಪತ್ರ ಬರೆಯಿರಿ.

Government of Karnataka
KARNATAKA SCHOOL EVALUATION & ASSESSMENT BOARD
MODEL QUESTION PAPER -2

Class: II Year PUC **Academic Year: 2024-25**
Subject: English (02) **Maximum Marks: 80**
Time: 3.00 hours **No. of Questions: 36**

Instructions

1. Answer the questions in all the sections.
2. Follow the prescribed limit while answering the questions.
3. Write the correct question number as it appears on the question paper.
4. For multiple choice questions (MCQ's), choose the correct answer and rewrite it.
5. Answers to the question number 30A (a-i) or 30 B (a-i) should be in sequence and at one place.
6. For question numbers 30, 31, 32 and 36, internal choices are there. Hence, answer either A or B.
7. For Part - A questions, only the first written answers will be considered for evaluation.

PART- A

I. Answer the following questions by choosing the right option. 10x1=10

1. Romeo says "So shows a snowy dove trooping with crows" in the poem 'Romeo and Juliet'. To whom does the word 'snowy dove' refer to?

a. Rosaline b. Juliet
c. Romeo d. Capulet

2. In the poem 'On Children', the word 'Arrows' refers to ……

a. parents b. mother c. women d. children

3. Whom does Dona Laura call 'an ill-natured man'?

a. Petra b. Juanito c. Cousin d. Don Gonzalo

4. In the poem 'When You Are Old', the speaker says, ……loved his beloved's moments of glad grace.

a. some b. many c. all d. none

5. Identify the sequence of events that led to change in the owner's life style with reference to 'The Gardener.'

a. old man was hired-petty thefts stopped-income improved-plantation expanded dramatically
b. plantation expanded dramatically-income improved-old man was hired-petty thefts stopped
c. old man was hired-petty thefts stopped-plantation expanded dramatically-income improved
d. plantation expanded dramatically-old man was hired-income improved-petty thefts stopped

6. Who creates heaven on earth, according to the poet in 'Heaven, If You Are Not Here on Earth'?

a. nymph b. god c. poet d. devil

7. The author says that "Bowing is neither less nor more silly than shaking hands or kissing the cheek, but it is quainter; more formal, more oriental; it is also infectious" in Japan and Brazil Through a Traveler's Eye. Here the word 'oriental' means

a. West b. North c. East d. South

8. Match the column A with column B with reference to the lesson 'I Believe Books Will Never Disappear' and choose the correct option.

A	B
A. Telephone	i. extension of arms
B. Microscope	ii. extension of voice
C. Ploughs	iii. extension of eyes

a. A-iii, B-ii, C-i b. A-ii, B-iii, C-i c. A-i, B-ii, C-iii d. A-i, C-ii, B-iii

9. Who told Roof, "We want your vote" and placed five-pound note on the floor in the story 'The Voter'?

a. Leader of the PAP campaign team b. Leader of the POP campaign team

c. Leader of the village campaign team d. Leader of the state campaign team

10. In what name does water rise a storm and takes to skies, according to the poem 'Water'?

a. Bottled water b. Filtered water c. Pumped water d. Mineral water

11. **Fill in the blanks with the passive form of the verb given in the brackets. 3x1=3**

A speeding lorry hit a car, yesterday, on the highway. The lorry driver ……(arrest) by the police. The passengers in the car ……..(hurt). The injured passengers ……..(admit) to a nearby hospital.

12. Fill in the blanks by choosing the appropriate expressions given in brackets 2x1=2

Sharan wanted to purchase a mobile phone. His friends gave many suggestions. He couldn't decide. He was …… . His mother asked him to speak to his aunt as She was …… in the matters of mobile phone.

(well versed, in a fix, put with)

13. Read the following paragraph and match the pronouns in side A with the nouns/noun phrases in side B they refer to 5x1=5

Mobile phones are very useful these days. **They (a)**are very efficient tools for communication. Youngsters are experts in using mobile phones. **Their** (b) skills in using mobile phones are exemplary. They can take a photo of a scenery **which(c)** they like while traveling. If they like a song, they can record **it(d)** on their mobile phone. People **who(e)** are fond of their mobile phones always keep them in their pockets.

A	B
a. They	i. Scenery
b. Their	ii. Song
c. Which	iii. Mobile Phones
d. It	iv. Days
e. who	v. Youngsters'
	vi. People

PART - B

II. Answer any three of the following questions in one or two sentences each 3x2=6

14. Name the two countries that recognised and declared 'Rights of Nature' according to Vandana Shiva.

15. When Don Gonzalo prepares to read, he takes out things from his pocket in the play 'A Sunny Morning'. Which are they?

16. What did the narrator love in his beloved in the poem 'When You Are Old'?

17. Mention any two things in nature which make this earth heaven.

III. Answer any four of the following questions in about 60 words each 4x3=12

18. How does Romeo express his love for Juliet in the poem 'Romeo and Juliet'?

19. Why was Navdanya Movement started by Vandana Shiva? What are its achievements?

20. How does the foot spend its days in the shoes in the poem 'To the Foot from its Child"?

21. Write a note on Borge's thoughts on metaphors.

22. What does George Mikes observe about the behaviour of car drivers in Brazil? Explain briefly.

23. Water is not simply H_2O for the poet in the poem 'Water'. Why?

IV. Answer any three of the following questions in about 100 words each 3x4=12

24. "Man lives for some kind of vengefulness. Without it, there would be no reason for his existence." Evaluate this statement in the light of the story 'The Gardener'.

25. "Parents can give their love but not their thoughts" says the Prophet in the poem 'On Children'. Why do you think the Prophet says so? Discuss.

26. The story 'Too Dear' reflects on the issue of governance and human greed for power. Substantiate.

27. Do you agree that the play 'A Sunny Morning' deals with the human folly for lying? Elucidate with suitable examples.

28. Write a note on Roof's character in the story 'The Voter'.

29. How does cycling bring changes in the lives of women of Pudukkottai district? Explain briefly with examples.

PART - C

V. 30. A. Read the following passage and answer the questions set on it 9x1=9

Most mother snakes do not tend their offsprings. They find a safe place to lay eggs and leave immediately. If they give birth to live young, they vanish as soon as the last one comes out. New born snakes face the dangers on their own. Out of 3,400 snake species of snakes in the world, only 150 species show maternal care.

The King Cobra is the only species to make a nest and guard its eggs. The Indian rock python coils it complete body around its eggs and incubates them. But both species do not stay with younger ones once they come out of eggs. One snake goes an extra mile to protect its offsprings. It is Southern African Python. Graham Alexander studied the behaviour of Southern African Python snakes for the first time.

Graham Alexander was a student of a university in South Africa. He spent seven years studying Southern African Pythons. He studied thirty-seven Southern African Pythons in Dinokeng Game Reserve near Pretoria.

Southern African Pythons are easy to trace in the forest. They are the largest snakes of African continent. They grow up to five metres and weigh sixty kilograms on average. Alexander caught them and inserted transmitter chips in their bodies. He monitored their movement through these chips. He also measured their body temperature.

Southern African Pythons lay eggs in burrows created by other animals. The mother Southern African Python coils her body around the eggs for three months. The mother snake stays with the eggs for three months. It does not eat anything during these months. It loses 40% of its weight during this period. After three months, the baby snakes come out of the eggs. The mother snake stays with the baby snakes for two more weeks before moving out of the burrow. Hence, the Southern African Python is the most caring snake of all snakes.

a. What is the average weight of a Southern African Python?

b. Which snake prepares a nest for its eggs?

c. ……..snake goes an extra mile to protect its offsprings.

d. Where does the Southern African Python lay its eggs?

e. Where did Alexander study the Southern African Pythons for seven years?

f. What percentage of weight does a mother Southern African Python snake lose in three months?

g. How many snakes did Alexander study to understand the behaviour of Southern African Pythons?

h. The idiom 'to go an extra mile' means …….

(i) go more miles (ii) put more effort (iii) put more pressure (iv) go one mile

i. The antonym for the word caring is ……

Or

B. Read the following poem and answer the questions set on it 9x1=9

The Road Not Taken

Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveller. Long I stood
And looked down one as far as I could,
To where it bent in the undergrowth:

Then took the other as just as fair
And having perhaps the better claim;
Because it was grassy and wanted wear
Though as for that the passing there
Had worn them really about the same.

And both that morning equally lay
In leaves no step had trodden black,
Oh, I kept the first for another day,
Yet knowing how way lends on to way

I doubted if I should ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence
Two roads diverged in a wood, and I,
I took the one less travelled by,
And that has made all the difference.

a. Why did the speaker choose the other road?

b. What did the speaker do at the place where two roads diverged?

c. Where did two roads diverge?

d. What made the difference to the speaker?

e. In the statement, I kept the first for another day, what does the word 'first' refer to?

i. Wood ii. Road

iii. day iii. Walk

f. What time of the day is indicated in the given poem?

g. Who took the road that was less travelled by?

h. How will be the speaker saying after some ages?

i. The antonym for 'less' is ……

PART - D

VI. 31. A. Rewrite as directed **4x1=4**

(i) Rani saw an old woman on her way to school. ……old woman was singing and dancing under a tree. **(Use proper article)**

(ii) rules/certain/and regulations/follow/must/we **(Rearrange the segments into a meaningful sentence)**

(iii) Indian sportspersons ……. (has/have) won some medals in Paris Olympics.

(choose the verb that agrees with the subject)

(iv) Robert ……(send) many messages to his friend yesterday.

(Fill in the blanks with appropriate form of the verb given)

Or

B. Fill in the blanks with the right linker **4x1=4**

(Though, When, As, So)

……. Mr. Elephant requested help, the man couldn't refuse …… he was his friend. ….. , he decided to help Mr. Elephant …… it was raining heavily.

32. A. Rewrite as directed **2x1=2**

(i). The farmers have taken to organic farming, ……..? **(Add a suitable question tag)**

(ii) **The police** were providing security to the visiting officials. **(Frame 'Wh' question to get the underlined words as answer)**

Or

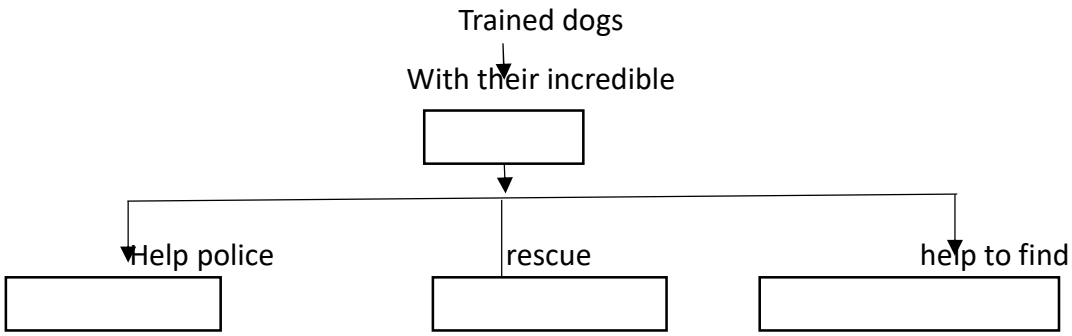
B. Rectify the errors in the following sentences and rewrite them. **2x1=2**

(i) Students were prepare well for their exams.

(ii) Guru adviced his sister.

33. Read the following passage and make notes by filling the boxes given below 4x1/2=2

Trained dogs with their incredible sense of smell help police in tracking criminals and in rescuing buried people. They also help to find bombs and drugs. They are very good friends of police in general.



34. Report the following conversation. 5x1=5

Minister: Why do you stay in the prison?

Prisoner: Do you want me to go?

Minister: Certainly. I don't have any problem.

Prisoner: I won't go away.

Minister: I can give you pension.

35. Complete the following dialogue 3x1=3

(Two friends meet at a book shop)

Vinay : ……, how are you? (Greeting)

Vincent: Fine. Are you buying books?

Vinay : …….. (responding)

Vincent: Did you find them?

Vinay : ……..(giving information)

PART - E

VII. 36. A. Write a letter of application in response to the following advertisement that appeared in The Hindu dated 16th August 2024. 5

Wanted
English Teachers
Qualification: B A B.Ed.
Apply to
The Secretary
MM School,
Chamarajanagar 571313

Write XXXX for name and YYYY for address

Or

B. Imagine that you are the Secretary of your students' union. Prepare a speech of about 150 words on 'Road Safety' to create awareness among your classmates. 5

Use the following information.

Importance of traffic rules – importance of following traffic rules-behaviour of bicycle riders and bike riders-importance of helmets -importance of seat belts in cars- rules to be followed by pedestrians.

xxx

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
MODEL QUESTION PAPER-2 2024-25
II PUC - PHYSICS (33)

Time: 3 hours. **Max Marks: 70**

No of questions: 45

General Instructions:

1. ***All parts (A TO D) are compulsory. PART-E is only for visually challenged students.***
2. ***For Part – A questions, first written-answer will be considered for awarding marks.***
3. ***Answers without relevant diagram / figure / circuit wherever necessary will not carry any marks.***
4. ***Direct answers to numerical problems without relevant formula and detailed solutions will not carry any marks.***

PART – A

I. Pick the correct option among the four given options for ALL of the following questions: **15 × 1 = 15**

1. 'The total electric flux through a closed surface in air is equal to $\frac{1}{\varepsilon_0}$ times the total charge enclosed by that surface'. This is the statement of

(A) Coulomb's law in electrostatics (B) Gauss's law in magnetism

(C) Gauss's law in electrostatics (D) Ampere's circuital law

2. The electric potential due to a negative point charge at a distance 'r' is

(A) positive and it varies as $\frac{1}{r^2}$ (B) positive and it varies as $\frac{1}{r}$

(C) negative and it varies as $\frac{1}{r^2}$ (D) negative and it varies as $\frac{1}{r}$

3. Identify the WRONG statement from the following

(A) The drift speed acquired by free electrons per unit electric field is called mobility.

(B) The conductivity of semiconductors decreases with increase in temperature.

(C) The conductivity of conductors decreases with increase in temperature.

(D) Alloys are widely used in the construction of standard resistors.

4. The physical quantities related to magnetism are listed in column I and the dimensions are listed in column II. Identify the correct match

Column I	Column II
(i) Magnetic field	(a) $[MLT^{-2}A^{-2}]$
(ii) Magnetic permeability	(b) $[L^2 A]$
(iii) Magnetic moment	(c) $[M T^{-2}A^{-1}]$

(A) (i) - (b), (ii) - (c), (iii) - (a) (B) (i) - (c), (ii) - (b), (iii) - (a)

(C) (i) - (a), (ii) - (b), (iii) - (c) (D) (i) - (c), (ii) - (a), (iii) - (b)

5. The ferromagnetic material among the following is

(A) copper (B) nickel (C) lead (D) calcium

6. The following are the statements related to self-inductance:

(i) The self-inductance of a coil depends on its geometry and on the permeability of the medium inside it.

(ii) The self-inductance is a measure of electrical inertia and opposes the change in current in the coil.

(A) Both the statements are wrong (B) Only statement (i) is correct

(C) Both the statements are correct (D) Only statement (ii) is correct

7. In a transformer, N_P and N_S are the number of turns present in its primary and secondary coils respectively. The transformer is said to be a step-up transformer if

(A) $N_P < N_S$ (B) $N_P > N_S$ (C) $N_P = N_S$ (D) $N_P >> N_S$

8. The expression for displacement current i_d is

(A) $i_d = \varepsilon_0^2 \frac{d\phi_E}{dt}$ (B) $i_d = \mu_0 \varepsilon_0 \frac{d\phi_E}{dt}$ (C) $i_d = \mu_0 \frac{d\phi_E}{dt}$ (D) $i_d = \varepsilon_0 \frac{d\phi_E}{dt}$

9. Identify the statement which is true for a compound microscope from the following.

(A) Its objective is a convex lens of greater aperture.

(B) Its eyepiece is a convex lens of smaller aperture.

(C) The image formed by its objective is real and inverted.

(D) Its eyepiece produces the final image, which is virtual and diminished.

10. Diffraction effect is exhibited by _____ .

(A) only sound waves (B) only light waves

(C) only matter waves (D) all types of waves

11. In photoelectric effect experiment if only the frequency of incident radiation is increased, then

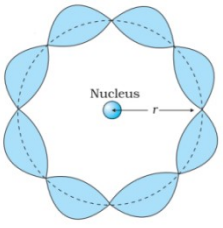
(A) the maximum kinetic energy of photoelectrons decreases. (B) the stopping potential increases.

(C) the photoelectric current increases. (D) the photoelectric current decreases.

12. The impact parameter is minimum in alpha (α) - scattering experiment for the scattering angle of

(A) 180^0 (B) 0^0 (C) 120^0 (D) 90^0

13. The standing wave pattern of matter waves associated with an electron revolving in a stable orbit is shown in the diagram. The principal quantum number (n) and radius (r_n) of the orbit are respectively



(A) 8 and $\frac{4\lambda}{\pi}$ (B) 4 and $\frac{4\lambda}{\pi}$

(C) 8 and $\frac{2\lambda}{\pi}$ (D) 4 and $\frac{2\lambda}{\pi}$

14. The radioactive decay in which very high energy photons are emitted is called _____.

(A) gamma decay (B) alpha decay (C) negative β decay (D) positive β decay

15. When a forward bias is applied to a p-n junction, it

(A) raises the potential barrier. (B) reduces the majority carrier current to zero.

(C) lowers the potential barrier. (D) raises the width of depletion region.

II. Fill in the blanks by choosing appropriate answer given in the bracket for ALL the following questions: **5 × 1 = 5**

(zero, paramagnetic, transverse, ac generator, one, diamagnetic)

16. The magnetic susceptibility is negative for _____ materials.

17. The device which works on the principle of electromagnetic induction is _____.

18. The power factor of an AC circuit containing pure resistor is _____.

19. The light waves are _____ in nature.

20. The charge of a photon is _____.

PART – B

III. Answer any FIVE of the following questions: **5 × 2 = 10**

21. 'The charges are additive in nature'. Explain.

22. What is an equipotential surface? What will be the shape of equipotential surfaces corresponding to a single point charge?

23. Give any two differences between current and current density.

24. A moving coil galvanometer gives a deflection of 10 divisions when 200 μA of current is passed through it. Find the current sensitivity of the galvanometer.

25. State Faraday's law and Lenz's law of electromagnetic induction.

26. Name the electromagnetic waves used for the following applications.

a) The radar systems used in aircraft navigation.

b) The remote switches of household electronic systems such as TV.

27. How is total energy of an electron revolving in an orbit of hydrogen atom related to the principal quantum number of the orbit? What is the significance of the negative sign in the expression for total energy of electron in a hydrogen atom?

28. What are intrinsic and extrinsic semiconductors?

PART – C

IV. Answer any FIVE of the following questions: **5 × 3 = 15**

29. What is an electric dipole? Define electric dipole moment. Give its direction.

30. What is a capacitor? Mention any two factors on which the capacitance of a parallel plate capacitor depends.

31. Derive an expression for angular frequency of revolution for a charged particle moving perpendicular to a uniform magnetic field.

32. Mention any three properties of magnetic field lines.

33. A horizontal straight wire 10 m long is falling with a speed of 5.0 m s^{-1}, at right angles to a magnetic field, 0.30×10^{-4} Wbm^{-2}. Find the instantaneous value of the emf induced in the wire.

34. Derive the relation between radius of curvature and focal length in case of a concave mirror.

35. Give Einstein's explanation of photoelectric effect and write Einstein's photoelectric equation.

36. Define 'binding energy' and 'mass defect'. Write the relation between them.

PART – D

V. Answer any THREE of the following questions: 3 × 5 = 15

37. a) Obtain an expression for potential energy of an electric dipole placed in a uniform electric field. **(3)**

b) Define energy density of a charged capacitor. How is the energy density related to electric field present between the plates of capacitor? **(2)**

38. Derive an expression for effective emf and effective internal resistance of two cells of different emfs and internal resistances connected in parallel.

39. Derive an expression for force per unit length on two infinitely long thin parallel straight conductors carrying currents and hence define 'ampere'.

40. a) What is a wavefront? **(1)**

b) Explain the refraction of a parallel plane wave through a thin prism with a neat diagram. **(2)**

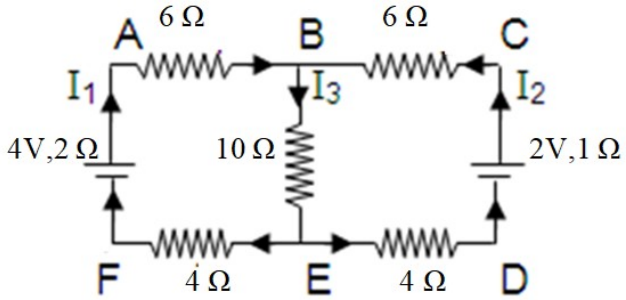
b) Give any two differences between constructive and destructive interferences of light. **(2)**

41. What is a half-wave rectifier? Explain the working of a half-wave rectifier using neat circuit diagram. Also draw input-output waveforms corresponding to it.

VI. Answer any TWO of the following questions: 2 × 5 = 10

42. Two point charges of +4 nC and +8 nC are placed at the points A and B respectively separated by a distance 0.2 m in air. Find the magnitude of the resultant electric field at the midpoint 'O' of the line joining A and B. What will be the magnitude of resultant electric field at 'O' if +4 nC is replaced by another +8 nC charge?

43. Find the currents I_1 and I_2 in the given electrical network.



44. A series LCR circuit contains a pure inductor of inductance 5 H, a capacitor of capacitance 20 μF and resistor of resistance 40 Ω. If the AC source of 200 V, 50 Hz is present in the circuit, find the impedance. Also find the resonant frequency of the circuit.

45. An object is placed at a distance 0.3 m from a convex lens of focal length 0.2 m. Find the position and nature of the image formed. Also find the distance through which the object should be moved to get an image of linear magnification '-1'.

PART – E

(For Visually Challenged Students only)

13) The standing wave pattern of matter waves associated with an electron revolving in a stable orbit is containing 4 complete waves. The principal quantum number (n) and radius (r_n) of the orbit are respectively

(A) 8 and $\frac{4\lambda}{\pi}$ (B) 4 and $\frac{4\lambda}{\pi}$ (C) 8 and $\frac{2\lambda}{\pi}$ (D) 4 and $\frac{2\lambda}{\pi}$

43) The positive terminals of two cells of emfs 4 V and 2 V with internal resistances 2 Ω and 1 Ω are connected by a uniform wire of resistance 12 Ω. Their negative terminals are connected by a second uniform wire of resistance 8 Ω. The mid points of these two wires are connected by a third uniform wire of resistance 10 Ω. Find the current through 4 V cell.

&&&&

`GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION & ASSESSMENT BOARD
MODEL QUESTION PAPER – 2

Class: II Year PUC **Academic Year:** 2024-25

Subject: Chemistry (34) **Maximum Marks:** 70

Time: 3.00 Hrs **No. of Questions:** 46

Instructions

1. Question paper has FIVE parts. All parts are compulsory.
2. a. Part-A carries 20 marks. Each question carries 1 mark.
   b. Part-B carries 06 marks. Each question carries 2 marks.
   c. Part-C carries 15 marks. Each question carries 3 marks.
   d. Part-D carries 20marks. Each question carries 5 marks.
   e. Part-E carries 09 marks. Each question carries 3 marks.
3. In Part-A questions, **first attempted answer** will be considered for awarding marks.
4. Write balanced chemical equations and draw neat labeled diagrams and graphs wherever necessary.
5. Direct answers to the numerical problems without detailed steps and specific unit for final answer will not carry any marks.
6. Use log tables and simple calculator if necessary (use of scientific calculator is not allowed).
7. For a question having circuit diagram/figure/ graph/ diagram, alternate questions are given at the end of question paper in a separate section for visually challenged students.

PART-A

I. Select the correct option from the given choices. **15 × 1 = 15**

1. Square planar complex of the type [MABXL] (where A, B, X, L are unidentate) shows
   a) Two Cis and one Trans b) Two cis and Two trans
   c) One Cis and two Trans d) one Cis and One Trans
2. Order of a reaction in which unit of rate of reaction and rate constant are same
   a) 0 b) 1
   c) 1/2 d) 2
3. **Statement I:** Tertiary alcohols heated with copper at 573 K yields 2-methyl propene.
   Statement II: Tertiary alcohols undergo dehydration when heated with Cu /573K.
   Identify the correct statement
   a) Both statement I and II are correct
   b) Both statement I and II are incorrect.
   c) Statement I is correct and statement II is incorrect.
   d) Statement I is in correct and statement II is correct.
4. The tanks used by most of scuba divers are filled with air diluted with helium of around
   a) 88.3% b) 56.2%
   c) 32.1% d) 11.7%
5. 1,2-dichloroethane is an example of
   a) alkylene dihalides b) alkylidene halides
   c) vinyl dihalides d) gem-dihalides.

6. A galvanic cell has electrical potential of 1.1 V. If an opposing potential of 1.1V is applied to this cell, what will happen to the cell reaction and current flowing through the cell?
   a) The reaction stops and no current flows through the cell.
   b) The reaction continuous but current flows in opposite direction.
   c) The concentration of reactants becomes unity and current flows from cathode to anode.
   d) The cell does not function as a galvanic cell and zinc is deposited on zinc plate

7. As the size of the aldehyde molecule increases, the odour becomes
   a) more pungent b) more fragrant
   c) less fragrant d) no change in the odour.

8. Sulphur containing amino acid is;
   a) cysteine b) tyrosine
   c) histidine d) proline

9. The C-O- bond angles of P, Q and R are found to be 111.7^o, 109^o, 108.9^o respectively, compound P, Q and R are
   a) P = Phenol, Q = Methanol, R = Methoxy Methane.
   b) P = Methoxy Methane, Q = Methanol, R = Phenol.
   c) P = Methanol, Q = Phenol, R = Methoxy Methane.
   d) P = Methoxy Methane, Q = Phenol, R = Methanol.

10. Compounds A and B react according to the following chemical equation $2A(g) + B(g) \longrightarrow 2C(g)$ concentration of either A or B were changed by keeping the concentrations of one of the reactants constant and the rates were measured as a function of initial concentration. Following results were obtained. Choose the correct option for the rate equation for this reaction.

Experiment trial	Initial Concentration of [A] mol L^{-1}	Initial Concentration of [B] mol L^{-1}	Initial Concentration of [C] mol L^{-1}
1	0.40	0.40	0.10
2	0.40	0.80	0.40
3	0.80	0.40	0.20

   a) Rate = k $[A]^2[B]$ b) Rate = k $[A][B]^2$
   c) Rate = k [A][B] d) Rate = k $[A]^2$

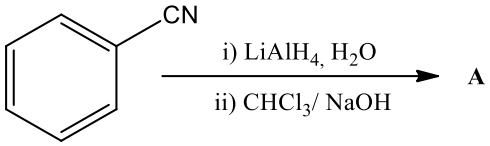
11. The reagent useful for separation and purification of aldehydes is
   a) silver nitrate solution b) sodium hydrogensulphite
   c) Fehling's solution d) sodium sulphate.

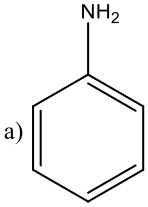
12. Match the following given in column I with Column II

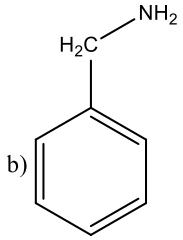
Column -I	**Column - II**
i) Chloramphenicol	A) Malaria
ii) Chloroquine	B) Anaesthetic
iii) Halothane	C) Typhoid fever
iv) Thyroxine	D) Goiter

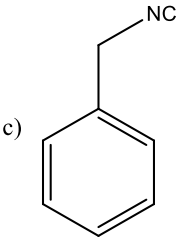
   a) i-C, ii-D, iii-B, iv -A b) i-C, ii-A, iii-B, iv -D
   c) i-D, ii-B, iii-C, iv -A d) i-A, ii-B, iii-C, iv -D

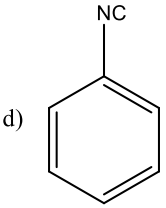
13. The product formed from the following reaction sequence is











14. The magnitude of CFSE (crystal field splitting complex, Δ_0) can be related to the configuration of d-orbitals in a coordination entity is

a) if $\Delta_0 < P$, the configuration is $t^3_{2g}e^1_g$ b) if $\Delta_0 > P$, the configuration is $t^3_{2g}e^1_g$

c) if $\Delta_0 > P$, the configuration is $t^2_{2g}e^2_g$ d) if $\Delta_0 < P$, the configuration is $t^4_{2g}e^0_g$

15. The correct order of melting point is.

a) Cr > Mn > Fe b) Fe >Mn>Cr

c) Cr > Fe >Mn d) Mn> Fe >Cr

II. Fill in the blanks by choosing the appropriate word from those given in the brackets:

(glycogen, starch, catalyst, cobalt, methanol, HNO_2) **5 × 1 = 05**

16. Storage polysaccharide present in animals is _____

17. Vitamin B_{12} is a coordination compound of _____metal

18. Primary aliphatic amines convert into aliphatic alcohols on reacting with _____ solution.

19. The chemical name of wood spirit is _____

20. Change in standard Gibbs free energy (ΔG^0) of a reaction is does not altered by the addition of ___.

PART-B

III. Answer ANY THREE of the following. Each question carries two marks. 3 × 2 = 06

21. Draw a graph to show variation of vapour pressure of solvent and solution with respect to temperature.

22. Explain the preparation of methoxyethane by Willamson's synthesis. Give equation.

23. What are heteroleptic complexes? What is the co-ordination number in complex $[Co(ox)_2Cl_2]^+$.

24. Chlorobenzene cannot be prepared by reacting phenol with $SOCl_2$. Give reasons.

25. What are hormones? Name a hormone that mediate responses to external stimuli.

PART-C

IV. Answer ANY THREE of the following. Each question carries three marks. 3 × 3 = 09

26. When a chromite ore **'A'** is fused with sodium carbonate in free excess of air and the product is dissolved in water, a yellow solution of compound **'B'** is obtained. After treatment of this yellow solution with sulphuric acid compound **'C'** can be crystallize from the solution. When compound **'C'** is treated with KCl orange crystals of compound **'D'** is crystallizes out. Write all the reactions involved in the conversion of **'A'** to **'D'**.

27. Write the IUPAC name of $[CoCl_2(en)_2]^{+1}$. Draw the geometrical isomers for this complex.
28. Fluorine has ability to stabilize most of transition metal in higher oxidation states. Give two reasons with an example.
29. Write any three limitations of Valence bond Theory (VBT) of coordination compounds.
30. What is lanthanoid contraction? Name two elements of actinoids which exhibits +7 oxidation state in their compounds.

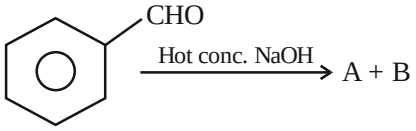
V. Answer ANY TWO of the following. Each question carries three marks. 2 × 3 = 06

31. What is the effect of temperature on the rate constant of reaction? How can this temperature effect on rate constant be represented quantitatively**?**
32. Plot a graph of molar conductivity v/s √c for strong and weak electrolytes in solution. For strong electrolytes, write the equation that represent the variation of molar conductivity with dilution.
33. Write three reasons to justify that osmotic pressure method has the advantage over other colligative methods for the measurement of molar mass of proteins and polymers.
34. During working of Leclanche cell, Write the anodic and cathodic reaction. What is the role of produced ammonia during cell reaction?

PART-D

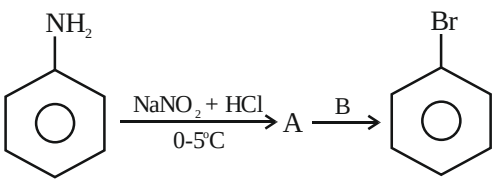
VI. Answer ANY FOUR of the following. Each question carries five marks. 4 × 5 = 20

35. a) Give any two differences between amylose and amylopectin.
    b) Name any two main forces which stabilize the secondary and tertiary structures of proteins.
    c) Which vitamin deficiency causes the increased fragility of RBC's and muscular weakness. (2+2+1)
36. a) Write the mechanism for the addition of HCN to carbonyl compound in the presence of base.
    b) Aromatic carboxylic acid does not undergo Friedel crafts reaction. Give reasons. (3+2)
37. a) Explain Hoffmann broamamide degradation reaction by taking butanamide as an example. Give the IUPAC name of the product.
    b) pK_b of aniline is more than that of methanamine. Give reasons. (3+2)
38. a) How do you prepare phthalimide from aromatic dicarboxylic acid? Give equation.
    b) Complete the following reaction:



(3+2)

39. a) An alkene X (C_3H_6) reacts with H_2O/H^+ to give compound Y, compound Y further undergo reaction with CrO_3-H_2SO_4 to produce compound Z. Write the IUPAC name of compounds X, Y and Z.
    b) Which among the following compounds have lowest and highest pK_a value? (3+2)
    p-nitrophenol, phenol, ethanol and o-cresol.
40. a) Write any three differences between S_N1 and S_N2 reaction mechanisms.
    b) Identify A and B in the given reaction



(3+2)

PART–E
(NUMERICAL PROBLEMS)

VII. Answer ANY THREE of the following. Each question carries three marks. 3 × 3 = 09

41. Calculate the mass of Vitamin C (ascorbic acid, $C_6H_8O_6$) to be dissolved in 78 g of acetic acid to lower its melting point by 1.5°C. Given: K_f of acetic acid is 3.9 K kg mol^{-1}.

42. Heptane and octane form an ideal solution. At 373 K, the vapour pressures of the two liquid components are 105.2 kPa and 46.8 kPa respectively. Calculate the vapour pressure of a solution containing of 26.0 g of heptane and 35 g of octane.

43. The electrical resistance of a column of 0.05 mol L^{-1} NaOH solution of diameter 1 cm and length 50 cm is 5.55×10^3 ohm. Calculate its resistivity, conductivity and molar conductivity.

44. Calculate the Gibbs free energy change and equilibrium constant for the cell reaction
$2Fe^{3+}(aq) + 2I^- \longrightarrow 2Fe^{2+}(aq) + I_2$. Given $E^o_{(Fe^{3+}/Fe^{2+})} = 0.77$ V and $E^o_{\left(\frac{1}{2}I_2/I^-\right)} = 0.54$ V.

45. The rate of a reaction quadruples when the temperature changes from 293 K to 313 K. Calculate the energy of activation of the reaction assuming that it does not change with temperature.

46. A reaction is first order in A and second order in B.
    (i) Write the differential rate equation.
    (ii) How is the rate affected on increasing the concentration of 'B' three times and decreasing the concentration of 'A' by half times?
    (iii) How is the rate affected when the concentrations of both 'A' and 'B' are tripled?

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
WEIGHTAGE FRAMEWORK FOR MQP 2: II PUC MATHEMATICS(35):2024-25

Chapter	CONTENT	Number Of Teaching hours	PART A 1 mark		PART B 2 mark	PART C 3 mark	PART D 5 mark	PART E		Total
			MCQ	FB				6 mark	4 mark	
1	RELATIONS AND FUNCTIONS	9	1			1	1			9
2	INVERSE TRIGONOMETRIC FUNCTIONS	6	2	1		1				6
3	MATRICES	9	1			1	1			9
4	DETERMINANTS	12	1		1		1		1	12
5	CONTINUITY AND DIFFERENTIABILITY	20	2	1	1	1	1		1	17
6	APPLICATION OF DERIVATIVES	10	1		2	1				8
7	INTEGRALS	22	1	1	1	1	1	1		18
8	APPLICATION OF INTEGRALS	5					1			5
9	DIFFERENTIAL EQUATIONS	10	1		1		1			8
10	VECTOR ALGEBRA	11	2	1	1	1				8
11	THREE D GEOMETRY	8	1		1	1				6
12	LINEAR ROGRAMMING	7						1		6
13	PROBABILITY	11	2	1	1	1				8
	TOTAL	**140**	**15**	**5**	**9**	**9**	**7**	**2**	**2**	120

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD

Model Question Paper -2

II P.U.C MATHEMATICS (35):2024-25

Time : 3 hours **Max. Marks : 80**

Instructions :

1) *The question paper has five parts namely A, B, C, D and E. Answer all the parts.*
2) *PART A has 15 MCQ's ,5 Fill in the blanks of 1 mark each.*
3) *Use the graph sheet for question on linear programming in PART E.*
4) *For questions having figure/graph, alternate questions are given at the end of question paper in separate section for visually challenged students.*

PART A

I. Answer ALL the Multiple Choice Questions **15×1 = 15**

1. If a relation R on the set {1, 2, 3} is defined by R = {(1, 1)}, then R is
(A) symmetric but not transitive (B) transitive but not symmetric
(C) symmetric and transitive. (D) neither symmetric nor transitive.

2. $\sin(\tan^{-1}x)$, $|x| < 1$ is equal to

(A) $\frac{\sqrt{1-x^2}}{x}$ (B) $\frac{x}{\sqrt{1-x^2}}$ (C) $\frac{1}{1+x^2}$ (D) $\frac{x}{\sqrt{1+x^2}}$.

3. Match List I with List II

List I	List II
a) Domain of $\sin^{-1}x$	i) $(-\infty, \infty)$
b) Domain of $tan^{-1}x$	ii) $[o, \pi]$
c) Range of $cos^{-1}x$	iii) [-1, 1]

Choose the correct answer from the options given below:
A) a-i , b-ii, c-iii B) a-iii, b-ii, c-i
C) a-ii, b-i, c-iii D) a-iii, b-i, c-ii

4. Statement 1: If A is a symmetric as well as a skew symmetric matrix, then A is a null matrix
Statement 2**:** A is a symmetric matrix if A^T = A and A is a skew symmetric matrix if A^T = – A.
A) Statement 1 is true and Statement 2 is false.
B) Statement 1 is false and Statement 2 is false.
C) Statement 1 is true and Statement 2 is true, Statement 2 is not a correct explanation for Statement 1
D) Statement 1 is true and Statement 2 is true, Statement 2 is a correct explanation for Statement 1

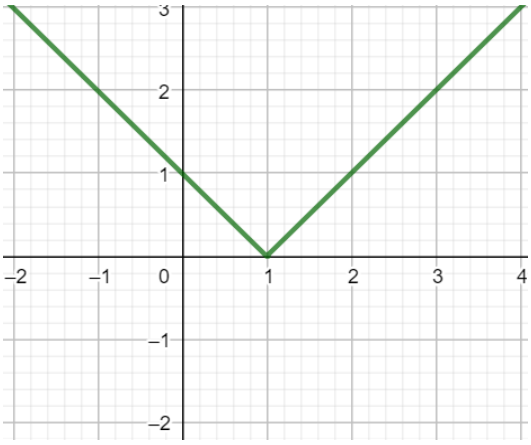
5. If A is a square matrix of order 3 and |A| = 3, then $|A^{-1}|$ =

A) 3 B) $\frac{2}{3}$ C) $\frac{1}{3}$ D) 12

6. For the figure given below, consider the following statements 1 and 2

Statement 1: The given function is differentiable at x = 1

Statement 2: The given function is continuous at x = 0



A) Statement 1 is true and Statement 2 is false

B) Statement 1 is false and Statement 2 is true

C) Both Statement 1 and 2 are true

D) Both Statement 1 and 2 are false

7. If $y = e^{logx}$, then $\frac{dy}{dx} =$

(A) $\frac{1}{x}$ B) e^{logx} C) -1 D) 1.

8. The function f given by $f(x) = \log(\sin x)$ is increasing on

(A) $(0, \pi)$ B) $\left(\pi, \frac{3\pi}{2}\right)$ C) $\left(\frac{\pi}{2}, \pi\right)$ D) $\left(\frac{3\pi}{2}, 2\pi\right)$.

9. $\int \frac{1}{x\sqrt{x^2-1}} dx =$

A) $\sec x$ +C B) $cosec^{-1}x$ +C C) $\sec^{-1} x + C$ D) $cosecx + C$

10. A differential equation of the form $\frac{dy}{dx}$= F (x, y) is said to be *homogenous* if F(x, y) is a homogenous function of degree

A) 1 B) 2 C) n D) 0.

11. The projection of the vector $\vec{a} = 2\hat{\imath} + 3\hat{\jmath} + 2\hat{k}$ on y-axis is

A) $\frac{3}{\sqrt{17}}$ B) 3 C) $\frac{8}{\sqrt{17}}$ D) $\frac{2}{\sqrt{17}}$.

12. Unit vector in the direction of the vector $\vec{a} = \hat{\imath} + \hat{\jmath} + 2\hat{k}$ is

A) $\frac{\hat{\imath}+\hat{\jmath}+2\hat{k}}{\sqrt{6}}$ B) $\frac{\hat{\imath}+\hat{\jmath}+2\hat{k}}{6}$ C) $\frac{\hat{\imath}+\hat{\jmath}+2\hat{k}}{4}$ D) $\frac{\hat{\imath}+\hat{\jmath}+2\hat{k}}{2}$

13. The equation of a line parallel to x-axis and passing through the origin is

A) $\frac{x}{0} = \frac{y}{1} = \frac{z}{1}$ B) $\frac{x}{1} = \frac{y}{0} = \frac{z}{0}$

C) $\frac{x+5}{0} = \frac{y-2}{1} = \frac{z+3}{0}$ D) $\frac{x-5}{0} = \frac{y+2}{0} = \frac{z-3}{1}$.

14. If $P(A) = 0.4\ P(B) = 0.5$ *and* $P(A \cap B) = 0.25$ then $P(A'|B)$ *is*

A) $\frac{1}{2}$ B) $\frac{5}{8}$ C) $\frac{1}{4}$ D) $\frac{3}{4}$.

15. If A and B are independent events with $P(A) = 0.3, P(B) = 0.4$ then $P(A\,|B)$

A) 0.3 B) 0.4 C) 0.12 D) 0.7

II. Fill in the blanks by choosing the appropriate answer from those given in the bracket (-1, 0, 1, 2, 3, 5,) 5×1 = 5

16. The value of $\cos\left(\frac{\pi}{3} + sin^{-1}\left(\frac{1}{2}\right)\right)$ =_____

17. The number of points at which f(x)=[x], where [x] is greatest integer function is discontinuous in the interval (-2, 2) is _____

18. $\int_0^{\frac{\pi}{2}}\left(sin^2\frac{x}{2} - cos^2\frac{x}{2}\right)\,dx =$

19. If $\left(2\vec{a} - 3\vec{b}\right) \times \left(3\vec{a} - 2\vec{b}\right) = \lambda\left(\vec{a} \times \vec{b}\right)$, then the value of λ is _____

20. Probability of solving a specific problem independently by A and B are $\frac{1}{2}$ and $\frac{1}{3}$ respectively. If both try to solve the problem then the probability that the problem is solved is $\frac{k}{3}$, then the value of k is _____

PART B

Answer any SIX questions: 6 ×2=12

21. Find 'k' if area of the triangle with vertices (2,-6) , (5,4) and (k,4) is 35 square units.

22. If $x = 4t$, $y = \frac{4}{t}$, then find $\frac{dy}{dx}$.

23. The radius of an air bubble is increasing at the rate of 0.5 cm/s. At what rate is the volume of the bubble is increasing when the radius is 1 cm ?

24. Find the two numbers whose sum is 24 and product is as large as possible.

25. Evaluate: $\int \frac{x^3 - x^2 + x - 1}{x - 1}dx$.

26. Find the general solution of the differential equation $\frac{dy}{dx} = \sqrt{1 - x^2 + y^2 - x^2y^2}$.

27. Find the area of the parallelogram whose adjacent sides are the vectors $3\hat{\imath} + \hat{\jmath} + 4\hat{k}$ and $\hat{\imath} - \hat{\jmath} + \hat{k}$.

28. Find the angle between the pair of lines $\frac{x+3}{3} = \frac{y-1}{5} = \frac{z+3}{4}$ and $\frac{x+1}{1} = \frac{y-4}{1} = \frac{z-5}{2}$.

29. A couple has two children. Find the probability that both children are males, if it is known that at least one of the children is male.

PART C

Answer any SIX questions: 6 × 3 = 18

30. Let L be the set of all lines in a plane and R be the relation in L defined as R = $\{(L_1, L_2) : L_1$ is perpendicular to $L_2\}$. Show that R is symmetric but neither reflexive nor transitive.

31. Solve: $2\tan^{-1}(cosx) = \tan^{-1}(2cosecx)$.

32. Find 'x', if $\begin{bmatrix} x & -5 & -1 \end{bmatrix}\begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}\begin{bmatrix} x \\ 4 \\ 1 \end{bmatrix} = O$.

33. If $y = 3e^{2x} + 2e^{3x}$, prove that $\frac{d^2y}{dx^2} - 5\frac{dy}{dx} + 6y = 0$.

34. Find the intervals in which the function f is given by f(x) = $x^3 + \frac{1}{x^3}$ is

a) decreasing b) increasing.

35. Evaluate: $\int \frac{3x-2}{(x+1)^2(x+3)}dx$.

36. Show that the position vector of the point R, which divides the line joining the points P and Q having the position vectors $\vec{a}$ and $\vec{b}$ internally in the ratio $m:n$ is $\frac{m\vec{b}+n\vec{a}}{m+n}$.

37. Derive the equation of the line in space passing through a given point and parallel to a given vector in the vector form.

38. A man is known to speak truth 3 out of 5 times. He throws a die and reports that it is a six. Find the probability that it is actually a six.

PART D

Answer any FOUR questions: **4 × 5=20**

39. Consider the function f: A → B defined by $f(x) = \left(\frac{x-2}{x-3}\right)$. Is f one-one and onto? Justify your answer.

40. If $A = \begin{bmatrix} 1 \\ -4 \\ 3 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 2 & 1 \end{bmatrix}$, verify that $(AB)' = B'A'$.

41. Use the product $\begin{pmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{pmatrix}\begin{pmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{pmatrix}$ to solve the system of equations

$x - y + 2z = 1,\ 2y - 3z = 1,\ 3x - 2y + 4z = 9.$

42. Find the values of a and b such that

$$f(x) = \begin{cases} 5 & if\ x \le 2 \\ ax + b & if\ 2 < x < 10 \\ 21 & if\ x \ge 10 \end{cases}$$ is continuous function.

43. Find the integral of $\frac{1}{\sqrt{x^2+a^2}}$ w.r.t x and hence evaluate $\int \frac{1}{\sqrt{x^2+121}}dx$.

44. Find the area of the region bounded by the ellipse $\frac{x^2}{16}+\frac{y^2}{9}=1$ by integration method.

45. Solve the differential equation $ydx-\left(x+2y^2\right)dy=0$.

PART E

Answer the following questions:

46.Prove that $\int_a^b f(x)dx=\int_a^c f(x)dx+\int_c^b f(x)dx$ and hence evaluate $\int_{-1}^{2}|x^3-x|\,dx$.

OR

Solve the following problem graphically: Maximize and minimize $Z=3x+2y$, Subject to the constraints, $x+2y\leq 10, 3x+y\leq 15, x, y\geq 0$. **6**

47. Show that the matrix A $=\begin{bmatrix}5 & 6\\ 4 & 3\end{bmatrix}$ satisfies the equation A^2 – 8A -9I = O, where I is 2 × 2 identity matrix and O is 2 × 2 zero matrix. Using this equation, find A^{-1}.

OR

Differentiate $(sinx)^x+\sin^{-1}x$ w.r.t.x. **4**

PART F

(For Visually Challenged Students only)

6. For the function f(x)=|x-1|, consider the following statements 1 and 2

Statement 1: The given function is differentiable at x=1

Statement 2: The given function is continuous at x=0

A) Statement 1 is true and Statement 2 is false

B) Statement 1 is false and Statement 2 is true

C) Both Statement 1 and 2 are true

D) Both Statement 1 and 2 are false

****

GOVERNMENT OF KARNATAKA

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD

MODEL QUESTION PAPER - 2 (2024-25)

II PU SUBJECT - BIOLOGY (36)

DURATION: 3 HOURS **MAX. MARKS: 70**

General instructions:

1. The question paper consists of parts -**A, B, C, D** and **E.**
2. Part-**A** consists of ***I & II*** and Part-**D** consists of ***V & VI.***
3. All the parts are compulsory.
4. For part-**A** questions, only the first written answers will be considered for evaluation.
5. Part-**E** consists of questions for visually challenged students only.

PART – A

I. Select the correct alternative from the choices given: **15 x 1 = 15**

1. Select the correct sequence of events in microsporogenesis

a) Sporogenous tissue →Microspore mother cell →Microspore tetrad →Microspores
b) Microspores →Microspore mother cell →Microspore tetrad → Sporogenous tissue
c) Sporogenous tissue → Microspore tetrad →Microspores → Microspore mother cell
d) Microspores → Sporogenous tissue →Microspore tetrad → Microspore mother cell

2. Statement I: The process of release of sperms from the seminiferous tubule is called spermatogenesis.

Statement II: The spermatids are transformed into spermatozoa by the process called spermiogensis.

Choose the correct answer from the options given below:

a) Both statement I and statement II are correct
b) Both statement I and statement II are incorrect
c) Statement I is correct but statement II is incorrect
d) Statement I is incorrect but statement II is correct

3. The function of myometrium layer present in the uterine wall is to

a) Undergo cyclical changes during menstrual cycle.
b) Exhibit strong uterine contraction during parturition.
c) Give protection to the uterus.
d) Help in the implantation process.

4. The _____ hormone is secreted by the ovary in the later phase of pregnancy.

a) Androgens b) Estrogens c) Relaxin d) Progestogens

5. Sperms produced by the seminiferous tubules are transported through accessory ducts. Which duct should be tied and cut for male sterilization?

a) Vas deferens b) Vasa efferentia c) Rete testis d) Epididymis

6. Reasons for human population explosion are given below:

i) Rapid decline in maternal mortality rate. **ii) Rapid decline in infant mortality rate.**
iii) Rapid increase in death rate.
iv) Increase in the number of people in reproducible age.

Select the correct answer statements from the options given below:

a) i), ii) and iii) only
b) b) i) and ii) only
c) i), ii) and iv) only
d) iii) and iv) only

7. In a dihybrid cross in pea plants, Mendel got 9:3:3:1 phenotypic ratio. It denotes that

a) The alleles of two genes are interacting with each other.

b) It is a polygenic inheritance.

c) It is a multiple allelic inheritance.

d) The alleles of two genes are segregating independently.

8. A DNA segment has a total of 1000 nucleotides, out of which 240 of them are adenine containing nucleotides. How many pyrimidines bases this DNA segement possesses?

a) 480 b) 500 c) 760 d) 260

9. $(p + q)^2 = p^2 + 2pq + q^2$ represents an equation used in:

a) Population genetics c) Molecular genetics

b) Mendelian genetics d) Biometrics

10. A farmer working in a field was bitten by poisonous snake. Doctor gave him an antivenom treatment that contain preformed antibodies. This type of immunisation is known as

a) Autoimmunity c) Innate immunity

b) Passive immunisation d) Active immunisation

11. An agriculture labour was spraying some powder mixed with water onto fruit trees to get rid of insect larvae. Which of the following biocontrol agent could have been used here?

a) *Bacillus thuringiensis* b) *Trichoderma* c) Dragonflies d) Ladybird

12. Choose the correct sequence of polymerase chain reaction steps from the following:

a) Annealing →Denaturation → Extension b) Extension→ Annealing →Denaturation

c) Denaturation → Extension → Annealing d) Denaturation → Annealing → Extension

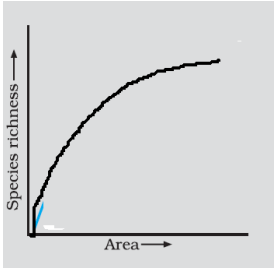
13. Use of bioresources by multinational companies and other organisations without proper authorisation and compensatory payment is referred as

a) Biopiracy b) Biofortification c) Bioprospecting d) Bioprocessing

14. An example for *ex situ* conservation is

a) National parks b) Sacred groves c) Biosphere reserves d) Zoological parks

15. The graph given below shows species-area relationships.



Which of the following equation correctly represent the curve?

a) $S = CA^Z$ c) $A = CS^Z$

b) Log S= log C + Z log A d) Log Z = log C + S log A

II. Fill in the blanks by choosing the appropriate word/words from those given in the bracket. 5x1 = 5

(Primary productivity, Coelacanth, Secondary productivity, *Glomus*, Amniocentesis, Plasmid)

16. Statutory ban on _____ is required to check increasing female foeticides.
17. A fish thought to be extinct and caught in South Africa in 1938 is _____.
18. An example for mycorrhiza forming fungi is _____.
19. Autonomously replicating circular extra-chromosomal DNA of bacteria is known as _____.
20. Rate of formation of new organic matter by consumers is referred as _____.

PART – B

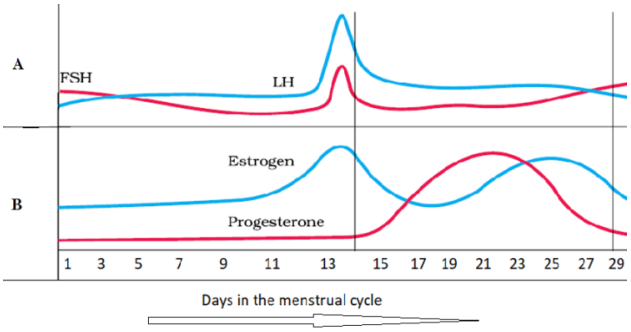
III. Answer any <u>FIVE</u> of the following questions in 3-5 sentences each, wherever applicable: 5x2 = 10

21. Differentiate between geitonogamy and xenogamy.
22. Write a short on sex determination method in birds.
23. Mention the levels where gene expression can be regulated in eukaryotes.
24. Write a short note on Neanderthal man.
25. Draw the structure of an antibody molecule.
26. Write the functions of genes *cryIAb* and *cryIIAb.*
27. Briefly explain the significance of David Tilman's long-term ecosystem experiments using outdoor plots.

PART – C

IV. Answer any <u>FIVE</u> of the following questions in 40-80 words each, wherever applicable 5x3 =15

28. Draw a L.S. of grass embryo diagram and label the following parts:
    a) Scutellum b) Coleoptile c) Shoot apex d) Radicle e) Root cap f) Coleorrhiza
29. In the figure given below, parts A and B show the level of hormones which influence the menstrual cycle. Study the figure and answer the questions that follow:



    a) Name the organs/glands which secrete the hormones represented in labelled parts A and B. (1M)
    b) State the role of hormones secreted from part B on the uterus of human female during menstrual cycle. (2M)
30. Suggest three simple principles through which we can prevent sexually transmitted diseases.
31. What is Adaptive Radiation? Give any two examples.
32. Name of the drugs, its source and nature is given in the table below. Find *a, b* and *c*.

Name of the drug	Source plant	Nature
a	*Papaver somniferum*	Depressant
Cannabinoids	***b***	Effects on cardiovascular system
Cocaine	*Erythroxylum cocoa*	***c***

33. How did an American Company Eli Lilly use the knowledge of *r*DNA technology to produce human insulin?
34. An example for grazing food chain is given below:
    Grass → Grasshopper → Birds → Man
    Graphically represent this food chain through pyramid of energy and write different trophic levels with their energy content.

PART- D

V. Answer any <u>FOUR</u> of the following questions in 200-250 words each, wherever applicable: 4x5= 20

35. Draw a neat labelled diagram of sectional view of the mammary gland.
36. Schematically represent the inheritance of flower colour in snapdragon and draw conclusions.

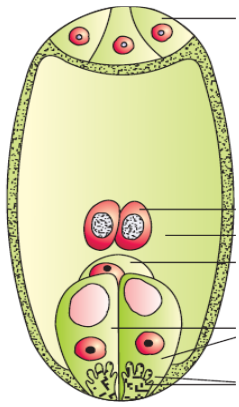
37. Give reasons for the following:
    a) A simple cut result in non-stop bleeding in haemophilia affected individuals.
    b) Turner's syndrome affected females are usually sterile.
    c) In Morgan's dihybrid cross experiments on *Drosophila* showed that flies having genes for yellow body and white eyes exhibited less recombination.
    d) Inheritance of skin colour in the humans shows different phenotypes.
    e) Accumulation of phenylalanine in the body of phenylketonuria affected individuals.
38. Describe the steps involved in DNA fingerprinting technique.
39. Name the causative agents of the following diseases:
    a) Malaria b) Filariasis c) Ascariasis d) Amoebiasis e) Pneumonia
40. a) With respect to the microbial products, its source and uses identify the ***a, b*** and ***c*** in the following table: (3M)

Microbial product	**Source**	**Use**
Cyclosporin A	***a***	Immunosuppressant
b	*Monascus purpureus*	Blood cholesterol lowering agent
Streptokinase	*Streptococcus*	***c***

    b) Define the BOD and flocs. (2M)
41. Mention the population interactions exist among the following:
    a) Abingdon tortoise and goats
    b) Tiger and deer
    c) Sea-anemone and clown fish
    d) Wasp laying eggs in fig fruit
    e) *Cuscuta* growing on hedge plant

VI. Answer any <u>ONE</u> of the following questions in 200-250 words each, wherever applicable: 1x5 = 5

42. Picture of a mature angiosperm embryo sac is given below and answer the question that follows.



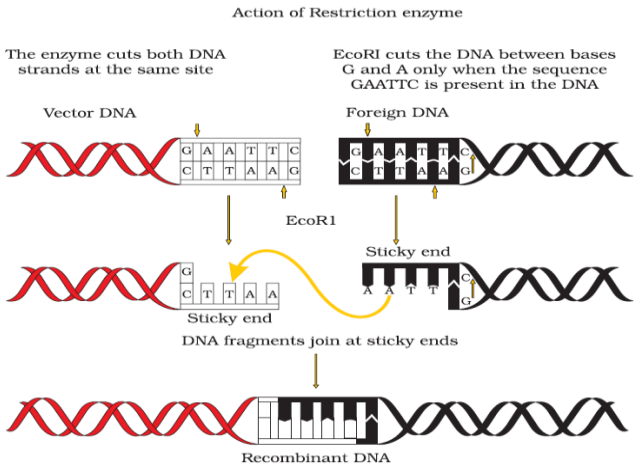
    a) Which cells/nuclei of the embryo sac produce zygote and primary endosperm nucleus? (2M)
    b) What is the ploidy of antipodal cells and primary endosperm nucleus? (2M)
    c) Why the endosperm development precedes embryo development? (1M)

43. Answer the following:

a) Construct a complete transcription unit with promoter and terminator on the basis of the hypothetical template strand given below. (3M)

b) Write the RNA strand transcribed from the above transcription unit along with polarity. (2M)

44. Study the diagram given below and answer the questions that follow:



a) What is EcoRI? (1M)

b) How is the action of exonuclease different from that of endonuclease? (2M)

c) How are 'sticky ends' formed on a DNA strand? Why are they so called? (2M)

PART- E

(FOR VISUALLY CHALLENGED STUDENTS ONLY)

15. In relation to species – area relationships, what is the expected 'Z' value for frugivorous birds and mammals in the tropical forests of different continents? (1M)

a) 0.1 b) 0.4 c) 1.15 d) 0.5

29. Define menopause. Mention the different phases of menstrual cycle. (3M)

42. Answer the following:

a) Draw a neat labeled diagram of typical anatropous ovule. (3M)

b) What is the ploidy of nucellus? Write the functions of integuments. (2M)

44. Describe the steps involved in recombinant DNA technology. (5M)

****

ಕರ್ನಾಟಕ ಸರ್ಕಾರ
ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಳಿ

ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ – 3

ತರಗತಿ : ದ್ವಿತೀಯ ಪಿಯುಸಿ **ಶೈಕ್ಷಣಿಕ ವರ್ಷ** : 2024–25

ವಿಷಯ: ಕನ್ನಡ (01) **ಗರಿಷ್ಠ ಅಂಕಗಳು**: 80

ಸಮಯ: 3 ಗಂಟೆಗಳು **ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ** : 52

ಸೂಚನೆ :

"ಅ– ವಿಭಾಗ" ದಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳಿಗೆ ಪ್ರಥಮವಾಗಿ ಬರೆದ ಉತ್ತರಗಳನ್ನು ಮಾತ್ರವೇ ಮೌಲ್ಯಮಾಪನದಲ್ಲಿ ಪರಿಗಣಿಸಲಾಗುವುದು.

ಅ– ವಿಭಾಗ

(ಅ) ಈ ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನೀಡಿರುವ ಉತ್ತರಗಳಲ್ಲಿ ಸರಿಯಾದುದನ್ನು ಆರಿಸಿ ಬರೆಯಿರಿ. **10x1=10**

1) ಸೀತೆಯನ್ನು ರಾವಣ ಇಲ್ಲಿರಿಸಿದ್ದನು

(ಅ) ಅಶೋಕವನ (ಆ) ಉದ್ಯಾನವನ (ಇ) ಪ್ರಮದವನ (ಈ) ಉಪವನ

2) ಯಾರ ಕೈಯಲ್ಲಿ ದರ್ಪಣವಿದ್ದು ಫಲವಿಲ್ಲ?

(ಅ) ಮರ್ಕಟನ ಕೈಯಲ್ಲಿ (ಆ) ಶರಣರ ಕೈಯಲ್ಲಿ (ಇ) ಹಂದೆಯ ಕೈಯಲ್ಲಿ (ಈ) ಅಂಧಕನ ಕೈಯಲ್ಲಿ

3) ಮನದೊಳಗೆ ಹಗೆಗಳನು ಹಿಂಡಿದವನು

(ಅ) ಅರ್ಜುನ (ಆ) ನಕುಲ (ಇ) ಭೀಮ (ಈ) ಸಹದೇವ.

4) ಯಾವ ಮಾತಿಗೆ ಕೊನೆಯಿಲ್ಲವೆಂದು ಪುರಂದರದಾಸರು ಹೇಳಿದ್ದಾರೆ?

(ಅ) ನಾಜೂಕಿನ (ಆ) ಬಿನ್ನಾಣದ (ಇ) ಬಣ್ಣದ (ಈ) ಪ್ರೀತಿಯ

5) ''ಶಿಲುಬೆಯೇರಿದ್ದಾನೆ ಜೀಸಸ್ ಗೋಡೆಯಲ್ಲಿ

ಬಾಗಿದ ಶಿರ.... ಕುತ್ತಿಗೆಯಲಿ ಉಬ್ಬಿದೊಂದು ನರ

ಯಾತನೆಗೂ ನಲ್ವಾತನೇ ನುಡಿವ ಮುಖಮುದ್ರೆ''

ಕವಿಯ ಈ ಮಾತುಗಳಲ್ಲಿ ಯಾತನೆಯಲ್ಲಿರುವ ಜೀಸಸ್‌ನ ಮುಖಮುದ್ರೆ ಹೇಗಿದೆ?

(ಅ) ಶುಭವನ್ನು ನುಡಿವಂತೆ (ಆ) ನಲುಮೆಯ ನುಡಿಗಳ ನುಡಿವಂತೆ

(ಇ) ಕೋಪವನ್ನು ಹೊರಹಾಕುವಂತೆ (ಈ) ಬೇಸರವು ತುಂಬಿದಂತೆ.

6) ''ಕನ್ನಡಿಗರು ಕನ್ನಡ ನಾಡಿನಲ್ಲಿಯೇ ತಬ್ಬಲಿಗಳಾದರೆ ಅವರಿಗೆ ಆಶ್ರಯವೆಲ್ಲಿದೆ? ಕನ್ನಡಿಗರ ಸಂಕಷ್ಟಗಳಿಗೂ ಒಂದು ಮಿತಿಯಿದೆ.

ಅವರ ತಾಳ್ಮೆಗೆ ತಪ್ಪು ಅರ್ಥ ಹಚ್ಚಬಾರದು. ಭಾಷೆಯನ್ನು ಬಿಟ್ಟು ಬದುಕು ಇರುವುದಿಲ್ಲ'' ಲೇಖಕರ ಈ ನುಡಿಯಲ್ಲಿನ ಸಂದೇಶವೇನು

(ಅ) ಇಂಗ್ಲೀಷ್ ವ್ಯಾಮೋಹ (ಆ) ಮಾತೃಭಾಷೆಯ ಮಹತ್ವ

(ಇ) ಜೀವನದ ಮಹತ್ವ (ಈ) ಕನ್ನಡಿಗರ ಔದಾರ್ಯ

7) ಲೋಕಲ್ ಸುದ್ದಿಗಳಿಗೆ ಇಲ್ಲಿ ಪ್ರಾಶಸ್ತ್ಯವಿದೆ

(ಅ) ಮನೆಯಲ್ಲಿ (ಆ) ಶಾಲೆಯಲ್ಲಿ (ಇ) ಚಹಾದಂಗಡಿಯಲ್ಲಿ (ಈ) ಮಾರುಕಟ್ಟೆಯಲ್ಲಿ

8) ದುರ್ಗಪ್ಪ ಕೇಳಿ ಪಡೆಯಲು ಬಂದಿದ್ದು

(ಅ) ಕೋವಿಯನ್ನು (ಆ) ಕತ್ತಿಯನ್ನು (ಇ) ಅಂಕುಶವನ್ನು (ಈ) ಕೊಡಲಿಯನ್ನು

9) ನಿರೂಪಕರ ಇಕಾಲಜಿಸ್ಟ್ ಗೆಳೆಯ

(ಅ) ಪ್ರಕಾಶ (ಆ) ಜಬ್ಬಾರ (ಇ) ದುರ್ಗಪ್ಪ (ಈ]) ಕೃಷ್ಣೇಗೌಡ

10) ''ಸತ್ತಿರೋದು ಇವತ್ತಲ್ಲಾ ನಾಳೆ ನೀವೇ ಕೊಂದು ತಿನ್ನೋ ಪ್ರಾಣಿ. ಅದಕ್ಕೆ ಯಾಕ್ರೀ ನಷ್ಟ ಕಟ್ಟಿ ಕೊಡಬೇಕು? ನಾಳೆ ಮಾಡೋ ಸಾರು ಇವತ್ತೇ ಮಾಡ್ರಿ'' ಎಂದು ನುಡಿದ ನಾಗರಾಜನ ಮಾತಿನಲ್ಲಿ ಇರುವ ಅರ್ಥವೇನು?

(ಅ) ಕುರಿಗಳ ಬಗ್ಗೆ ಅಸಡ್ಡೆ (ಆ) ಜನಗಳಿಗೆ ಸಮಾಧಾನ

(ಇ) ನಾಗರಾಜನ ಉಡಾಫೆ (ಈ) ಆತಂಕಪಡುವ ಅಗತ್ಯವಿಲ್ಲ

(ಆ) ಬಿಟ್ಟ ಸ್ಥಳಗಳಿಗೆ ಆವರಣದಲ್ಲಿ ಕೊಟ್ಟ ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಆರಿಸಿ ಬರೆಯಿರಿ: **5 x 1=5**

(ಶಿವಸುಬ್ರಮಣ್ಯ ಅಯ್ಯರ್, ಎ. ಆರ್ ಕೃಷ್ಣಶಾಸ್ತ್ರಿ, ಮನೋರಮೆ, ಪೂಣಚ್ಚಿ, ಶಾಂಭವಿ, ತಿಮ್ಮಪ್ಪ)

11) 'ಮುಟ್ಟಿಸಿಕೊಂಡವನು' ಕತೆಯಲ್ಲಿ ಬರುವ ಸರ್ಕಾರಿ ಆಸ್ಪತ್ರೆಯ ವೈದ್ಯರ ಹೆಸರು _____

12) _____ ಇದು ಮಾರ್ಷನ ಜೊತೆಗಾರನ ಹೆಸರು.

13) ಧಣಿಗಳ ಮನೆಯ ಪಕ್ಕದಲ್ಲಿ ಹರಿಯುತ್ತಿದ್ದ ಹೊಳೆ _____

14) _____ ಇವರು ಕಲಾಂ ಅವರನ್ನು ಶಾಲೆಗೆ ಕಳಿಸುವಂತೆ ಪ್ರೇರೇಪಿಸಿದವರು.

15) ಕನ್ನಡವು ಕಸ್ತೂರಿಯಲ್ಲವೆ! ಎಂದವರು _____

16) (ಇ) ಹೊಂದಿಸಿ ಬರೆಯಿರಿ: **5 x 1=5**

ಅ) ಪಗೆಯಂ ಬಾಲಕನೆಂಬರೆ	1) ಚಿಟ್ಟೆ ಮತ್ತು ಜೀವಯಾನ
ಆ) ಜಾಲಿಯ ಮರದಂತೆ	2) ಒಮ್ಮೆ ನಗುತ್ತೇವೆ
ಇ) ಜನಪದ	3) ತೆರೆದ ದಾರಿ
ಈ) ಟಿ. ಯಲ್ಲಪ್ಪ	4) ಶತಕ
ಉ) ಸುಕನ್ಯಾ ಮಾರುತಿ	5) ಹಬ್ಬಲಿ ಅವರ ರಸಬಳ್ಳಿ
	6) ಪುರಂದರ ದಾಸರು

ಆ – ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು–ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **3 x 2=6**

17) ಸೀತೆಯ ತಲ್ಲಣಕ್ಕೆ ಕಾರಣವೇನು?

18) ಗಂಡರೈವರು ಮೂರುಲೋಕದ ಗಂಡರಾರು? ಹೆಸರಿಸಿ.

19) ಹಡೆದವ್ವನನ್ನು ಯಾವಾಗ ನೆನೆಯಬೇಕು?

20) ಶಿಲುಬೆಗೇರಿಸಿದವರ ಗುಣಗಳು ಇಂದು ಯಾವ ವೇಷ ತಾಳಿವೆ?

(ಆ) ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು–ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **2 x 2=4**

21) ಸಿದ್ಲಿಂಗಿ ಏಕೆ ರಾದ್ಧಾಂತ ಮಾಡಿದಳು?

22) ಕನ್ನಡದ ಸಮಸ್ಯೆಗಳು ಎಲ್ಲಿಯವರೆಗೆ ಇದ್ದೇ ಇರುತ್ತವೆ?

23) ಕಲಾಂ ಮೇಷ್ಟ್ರು ಹೇಳಿದ ಯಶಸ್ಸಿನ ಪಂಚಾಕ್ಷರಿ ಮಂತ್ರ ಯಾವುದು?

24) ರೋಗಿಗಳ ಹಾಗೂ ಪಥ್ಯ ಮಾಡುವವರ ಜಿದ್ದು ಎಂತಹುದು?

(ಇ) ಯಾವುದಾದರೂ ಮೂರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಎರಡು–ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **3 x 2=6**

25) ಕೃಷ್ಣೇಗೌಡರ ಆನೆ ಹುಟ್ಟಿ ಬೆಳೆದ ಬಗೆ ಹೇಗೆ?

26) ಸೊರಗಿದ್ದ ಆನೆಯನ್ನು ಕೃಷ್ಣೇಗೌಡ ಹೇಗೆ ಸಾಕಿದ?

27) ಹುಚ್ಚು ನಾಯಿಗಳು ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಹೇಗೆ ವರ್ತಿಸುತ್ತವೆಂದು ಪುಟ್ಟಯ್ಯ ಹೇಳಿದ?

28) ಆನೆಯನ್ನು ಹದ್ದುಬಸ್ತಿನಲ್ಲಿಡುವುದರ ಬಗ್ಗೆ ವೇಲಾಯುಧನ ಅಪ್ಪ ಏನು ತಿಳಿಸಿದ್ದ?

'ಇ' ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಎರಡು ವಾಕ್ಯಗಳಿಗೆ ಸಂದರ್ಭ ಸೂಚಿಸಿ, ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ: **2 x 3=6**

29) ತೃಣವೇ ಪರ್ವತವಲ್ಲವೇ.

30) ಮುಳುಗಿರಲಿ ಮುಪ್ಪು ಚಿಂತನದಿ.

31) ಮಾತೇ ಮರೆತು ಹೋಗಿದೆ ಕಣೇ.

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ವಾಕ್ಯದ ಸಂದರ್ಭ ಸೂಚಿಸಿ, ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ: **1 x 3=3**

32) ನೀರುಬಿದ್ದರೆ ಕಣ್ಣು ಹೋಗುವ ಅಪಾಯವಿದೆ.

33) ದುರಂತದ ಮೂಲ ಬೀಜಗಳು ಚಹಾಗಿಡದ ರೂಪದಲ್ಲಿ ಬಂದವು.

34) ಪದ್ಯಂ ವಧ್ಯಂ ಗದ್ಯಂ ಹೃದ್ಯಂ.

(ಇ) ಯಾವುದಾದರೂ ಒಂದು ವಾಕ್ಯದ ಸಂದರ್ಭ ಸೂಚಿಸಿ, ಸ್ವಾರಸ್ಯ ಬರೆಯಿರಿ : **1 x 3=3**

35) ಆನೆಗೂ ಮಾನ ಮರ್ಯಾದೆ ಇರುತ್ತೆ ತಿಳಕೊ.

36) ಕಂಬದ ಮೇಲೆ ಯಾಕೋ ಕೈಲಾಸ ಕಂಡ ಹಾಗೆ ಇದೆಯಲ್ಲಾ.

'ಈ' ವಿಭಾಗ

(ಅ) ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಐದು–ಆರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **1 x 4=4**

37) ರಾವಣನ ಮನ:ಪರಿವರ್ತನೆಯ ಸಂದರ್ಭವನ್ನು ಕವಿ ಹೇಗೆ ಚಿತ್ರಿಸಿದ್ದಾನೆ? ವಿವರಿಸಿ.

38) ದ್ರೌಪದಿ ಅವಮಾನಕ್ಕೊಳಗಾದ ಮೂರು ಪ್ರಸಂಗಗಳನ್ನು ವಿವರಿಸಿ.

39) ಮುಂಬೈ ಜಾತಕದಲ್ಲಿ ಮಕ್ಕಳ ಬಾಲ್ಯದ ಚಿತ್ರಣ ಹೇಗೆ ನಿರೂಪಿತವಾಗಿದೆ?

40) ಕೆಳಗಿನ ವಚನವನ್ನು ಅವಲೋಕಿಸಿ ಕೊಟ್ಟಿರುವ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

ಲಘು ಗುರುವಪ್ಪನೆ? ಗುರು ಲಘುವಪ್ಪನೆ? ಆಗದಾಗದು.

ಗುರುಗುರುವೆ, ಲಘುಲಘುವೆ.

ಶ್ರೀ ಗುರು ಲಘುವರ್ತನದಲ್ಲಿ ವರ್ತಿಸಿದಡೆ ಆಗದು ಆಚಾರ.

ಶ್ರೀ ಗುರು ಲಿಂಗ ಜಂಗಮ ಪ್ರಸಾದವನು

ತಾನೆ ಲಘುಮಾಡಿ ಲಘುವಾದನಯ್ಯಾ,

ಉರಿಲಿಂಗ ಪೆದ್ದಿಪ್ರಿಯ ವಿಶ್ವೇಶ್ವರಾ.

ಅ) 'ಉರಿಲಿಂಗ ಪೆದ್ದಿಪ್ರಿಯ ವಿಶ್ವೇಶ್ವರಾ' ಅಂಕಿತನಾಮದ ವಚನಕಾರನ ಹೆಸರನ್ನು ಬರೆಯಿರಿ. (1 ಅಂಕ)

ಆ) 'ಶ್ರೀ ಗುರು ಲಘುವರ್ತನದಲ್ಲಿ ವರ್ತಿಸಿದಡೆ ಅದು ಏನಾಗುವುದಿಲ್ಲ? (1 ಅಂಕ)

ಇ) ಪ್ರಸ್ತುತ ವಚನದ ಸಂದೇಶವನ್ನು ನಿಮ್ಮದೇ ವಾಕ್ಯಗಳಲ್ಲಿ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ನಿರೂಪಿಸಿ. (2 ಅಂಕ)

(ಆ) ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಐದು–ಆರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **1 x 4=4**

41) ಸೀತಾ ಎಂಬ ಗೆಳತಿಯ ಗುಣ–ಸ್ವಭಾವವನ್ನು ಲೇಖಕಿ ಹೇಗೆ ಚಿತ್ರಿಸಿದ್ದಾರೆ?

42) ಧಣಿ ಹಾಗೂ ಹೊಳೆಯ ನಡುವಿನ ಸಮರವನ್ನು ಚಿತ್ರಿಸಿ.

(ಈ) ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಗೆ ಐದು–ಆರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. **1 x 4=4**

43) ಆನೆ ಮತ್ತು ಮಾವುತ ವೇಲಾಯುಧನನ್ನು ಸಾಗಹಾಕಲು ಮಠದವರು ಹವಣಿಸಿದ್ದೇಕೆ?

44) ನಿದ್ರೆ ಮಂಪರಿನಲ್ಲಿದ್ದ ಡ್ರೈವರ್ ಪರಂಧಾಮಕ್ಕೆ ಹೋದ ಸಂದರ್ಭವನ್ನು ವಿವರಿಸಿ.

ಊ – ವಿಭಾಗ

(ಭಾಷಾಭ್ಯಾಸ)

(ಅ) ಕೆಳಗಿನ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳಿಗೆ ಸೂಚನೆಗೆ ಅನುಗುಣವಾಗಿ ಉತ್ತರಿಸಿ. **4 x 2=8**

45) ಎರಡು ಪದಗಳಿಗೆ ನಾನಾರ್ಥಗಳನ್ನು ಬರೆಯಿರಿ: ಗುರು, ಕರ, ಬಗೆ.

46) ಎರಡು ಪದಗಳ ಗುಣವಾಚಕಗಳನ್ನು ಬರೆಯಿರಿ: ಹುಸಿನಿದ್ದೆ, ಕಡುಪಾಪ, ಗೂಗೆಮರಿ.

47) ಎರಡು ಪದಗಳ ತದ್ಭವ ರೂಪ ಬರೆಯಿರಿ: ಯಶ, ವೀರ, ಪರೀಕ್ಷಿಸು.

48) ಎರಡು ಕ್ರಿಯಾಪದಗಳ 'ಧಾತು' ಗುರುತಿಸಿ: ಕಿತ್ತರು, ಬಿದ್ದನು, ಬರುವಳು.

49) ಎರಡು ದ್ವಿರುಕ್ತಿಗಳನ್ನು ಸ್ವಂತ ವಾಕ್ಯದಲ್ಲಿ ಪ್ರಯೋಗಿಸಿ. ಮೆಲ್ಲಮೆಲ್ಲನೆ, ಪರಿಪರಿಯಾಗಿ, ನಡುನಡುವೆ.

50) ಎರಡು ಪದಗಳ ವಿಭಕ್ತಿಯನ್ನು ಹೆಸರಿಸಿ : ಬಲ್ಲವರಿಂದ, ಕೆಲವಂ, ಪಾಪಿಗೆ.

(ಆ) ಯಾವುದಾರೂ ಒಂದು ವಿಷಯವನ್ನು ಕುರಿತು ಪ್ರಬಂಧವನ್ನು ಬರೆಯಿರಿ. **1 x 4=4**

51) ಕನ್ನಡ ಭಾಷೆಯನ್ನು ಅಭಿವೃದ್ಧಿಗೊಳಿಸುವ ಮಾರ್ಗಗಳು

ಅಥವಾ

ದೇಶದ ಅಭಿವೃದ್ಧಿಯಲ್ಲಿ ಯುವಜನರ ಪಾತ್ರ

(ಇ) ಇವುಗಳಲ್ಲಿ ಯಾವುದಾರೂ ಒಂದನ್ನು ಕುರಿತು ಪತ್ರ ಬರೆಯಿರಿ. **1 x 4=4**

52) ರಮಾ/ಚೇತನ್, ಕೆ.ಎಲ್.ಇ ಪದವಿ ಪೂರ್ವ ಕಾಲೇಜು, ಮುಧೋಳ ತಾ, ಬಾಗಲಕೋಟೆ ಜಿಲ್ಲೆ, ಇದನ್ನು ನಿಮ್ಮ ವಿಳಾಸವೆಂದು ಭಾವಿಸಿ ನಿಮ್ಮ ಗೆಳೆಯ/ಗೆಳತಿಯಾದ ವಿನಯಾ/ರಾಮಕೃಷ್ಣ, ಶರಣ ಬಸವೇಶ್ವರ ಪದವಿ ಪೂರ್ವ ಕಾಲೇಜು, ಆದರ್ಶನಗರ, ಕಲಬುರಗಿ ಇವರಿಗೆ ನಿಮ್ಮ ಕಾಲೇಜಿನ ವಾರ್ಷಿಕೋತ್ಸವಕ್ಕೆ ಆಹ್ವಾನಿಸಿ ಒಂದು ಪತ್ರ ಬರೆಯಿರಿ.

ಅಥವಾ

ಸವಿತಾ/ಅರವಿಂದ, ಇಂಗಳಗಿ ಗ್ರಾಮ, ಬಾದಾಮಿ ತಾಲ್ಲೂಕು, ಬಾಗಲಕೋಟೆ ಜಿಲ್ಲೆ ಇಲ್ಲಿ ನೀವು ವಾಸವಿದ್ದೀರೆಂದು ಭಾವಿಸಿ ನಿಮ್ಮ ಊರಿಗೆ ಒಂದು ಸುಸಜ್ಜಿತವಾದ ಗ್ರಂಥಾಲಯವನ್ನು ನಿರ್ಮಿಸಿಕೊಡುವಂತೆ ವಿನಂತಿಸಿ ಜಿಲ್ಲಾಧಿಕಾರಿಗಳಿಗೆ ಒಂದು ಪತ್ರ ಬರೆಯಿರಿ.

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION & ASSESSMENT BOARD
MODEL QUESTION PAPER -3

Class: II Year PUC **Academic Year: 2024-25**
Subject: English (02) **Maximum Marks: 80**
Time: 3.00 hours **No. of Questions: 36**

Instructions

1. Answer the questions in all the sections.
2. Follow the prescribed limit while answering the questions.
3. Write the correct question number as it appears on the question paper.
4. For multiple choice questions (MCQ's), choose the correct answer and rewrite it.
5. Answers to the question number 30A (a-i) or 30 B (a-i) should be in sequence and at one place.
6. For question numbers 30, 31, 32 and 36, internal choices are there. Hence, answer either A or B.
7. For Part - A questions, only the first written answers will be considered for evaluation.

PART- A

I. Answer the following questions by choosing the right option. 10x1=10

1. In the poem 'Romeo and Juliet', _____ would make the face of heaven very fine.
   a. Romeo b. Ethiope c. Snowy dove d. Juliet
2. The total annual expenditure for keeping the criminal in the prison in 'Too Dear' came upto _____ francs
   a. 16,000 b. 12,000 c. 7,000 d. 600
3. According to the poet of 'On Children', _____ dwell in the house of tomorrow.
   a. the children's souls b. the parents
   c. the parents' souls d. the children's bodies
4. Match the following according to the play 'A Sunny Morning' and choose the right option from the given combinations

A	B
A. Dona Laura	i. handsome and refined
B. Don Gonzalo	ii. plays havoc with the nursemaids
C. Juanito	iii. gouty and impatient

   a. A-iii B- ii C- i
   b. A-i B-ii C-iii
   c. A-ii B-i C-iii
   d. A-i B-iii C-ii

5. In the story 'The Gardener', _____ invites scholars, poets and musicians to his/her place.
   a. Tammanna b. the owner of the farm
   c. Basavaiah d. the owner's wife

6. Borges calls _____, 'so intimate and so essential'.
   a. poetry b. books c. metaphors d. symbols

7. The narrator of 'Japan and Brazil Through a Traveler's Eye' meets a deer which bows to him properly and courteously at _____.

   a. Tokyo b. Nara c. Osaka d. Copacabana

8. Consider the two statements from the story 'The Voter' and answer the question which follows

   Statement 1: Whether or not we cast our paper for Marcus, PAP will continue to rule

   Statement 2: I will cast my vote for Maduka, if not this iyi take note

   a. Both the statements are given by Roof
   b. Only Statement 1 is given by Roof
   c. Only Statement 2 is given by Roof
   d. Both the statements are not given by Roof

9. The famous cycling song is written by _____ as mentioned in the article 'Where There is a Wheel'

   a. N. Kannammal b. S. Kannakarajan
   c. Muthu Bhaskaran d. Jameela Bibi

10. According to the poem 'Water', water can sit innocently in a _____

    a. well b. Bisleri bottle c. water pot d. puddle

11. Fill in the blanks with the appropriate passive form of the verb given in the brackets. 3x1=3

The old man came to this garden one day. The owner of the plantation _____(satisfy) by the work of the old man. Various measures _____(take) by the old man to improve the garden. Gradually, farming _____(neglect) by the owner.

12. Fill in the blanks by choosing the appropriate expressions given in brackets 2x1=2

The criminal said that the rulers of Monaco had ruined his character and people would _____ on him and in addition, he had got_____ of working.

(out of the way, get rid of, turn their backs)

13. Read the following paragraph and match the underlined pronouns in side A with the nouns/noun phrases in side B they refer to 5x1=5

Mary makes it a point to go for a morning walk along with **her** (a) dog Daniel every day. Both of them enjoy this activity as **it** (b) rejuvenates their spirits for the whole day. **They** (c)walk for about five kilometers. Daniel is cheerful and **he** (d) gives Mary a secure feeling on their walk. Peter, her husband had trained him well. Peter works for the Army in the hilly region **where**(e) he was posted five years ago.

A(Pronouns)	B (Nouns/Noun Phrases)
a. Her	i. Peter
b. It	ii. Hilly region
c. They	iii. Mary's
d. He	iv. Daniel
e. Where	v. Morning Walk
	vi. Mary and Daniel

PART - B

II. Answer any three of the following questions in one or two sentences each 3x2=6

14. Mention any two images to which Romeo compares Juliet in the poem 'Romeo and Juliet'.
15. Why parents should try to become like children according to the poem 'On Children'?
16. Which are the two most popular courses at Vandana Shiva's Earth University?
17. 'If books disappear, surely history would disappear.' Evaluate this statement of Jorge Luis Borges.

III. Answer any four of the following questions in about 60 words each 4x3=12

18. How does Tagore's 'Tapovan' prove that the forests have been source of rejuvenation for Indian civilization?
19. How does Laura kill herself in the story narrated by her in 'A Sunny Morning'?
20. Describe the uniqueness of the poet's love as expressed in the poem 'When You Are Old'.
21. Trace the path of the child's foot after it gets defeated in the battle, in the poem 'To the Foot from its Child'.
22. Why does Kuvempu feel that the heaven is on earth only in the poem 'Heaven, if you are not here on earth?
23. Comment on the difficulty of pedestrians in crossing the road in Brazil as explained in 'Japan and Brazil Through A Traveler's Eye'.

IV. Answer any three of the following questions in about 100 words each 3x4=12

24. Write a note on the gaming house in Monaco as described in 'Too Dear'.
25. Describe the ill-natured prelude to the meeting between Dona Laura and Don Gonzalo in the play 'A Sunny Morning'.
26. Evaluate the methods adopted by Tammanna and Basavaiah to defeat each other.
27. Why the people of Umuofia did not want to vote Marcus Ibe for free, for the second time, in the story 'The Voter'?
28. What are the advantages of riding bicycle for the women of Pudukkottai as mentioned in the article 'Where There is A Wheel'?
29. Criticize the various implied discriminations expressed in the poem 'Water'.

PART - C

V.

30. A. Read the following passage and answer the questions set on it 9x1=9

It may seem like nothing can live in a desert because it's so dry. But most deserts are full of life, with plants and animals that have adapted to survive without much water. Some plants, like cacti, store enough water in their stems to last until the next rain.

Tribes that live in deserts are often nomadic, which means that they don't stay in one place for very long, and instead move around a lot to find new resources. These people also often farm and herd cattle and other animals which are well adapted to desert life.

Deserts often have harsh conditions, such as high winds, sandstorms and rugged terrain, which can make it difficult to travel and survive. Fennec foxes are well-adapted for life in African and Arabian deserts. Their pale fur camouflages them against the sand; it also grows on the bottoms of their feet to give them traction while running in the sand and protects their feet from the hot desert surface.

The Arctic and Antarctic are referred to as polar deserts. 20% of the total deserts have sand on their surfaces. Cold deserts have a very low temperature in comparison to hot deserts and are covered with snow or ice. The largest cold desert on Earth is Antarctica.

The Sahara is a desert spanning across North Africa. With an area of 9,200,000 km^2, it is the largest hot desert in the world and the third-largest desert. The Thar Desert, also known as the Great Indian Desert, is an arid region in the north-western part of the Indian subcontinent that covers an area of 200,000 km^2 in India and Pakistan.

a. Choose the statement which is wrong according to the given passage.
   i. The Thar desert is in India and Pakistan
   ii. There are cold deserts and hot deserts
   iii. Nomadic tribes move searching for new resources
   iv. Nothing can live in a desert because it is so dry.
b. Name one of the polar deserts.
c. Which is the largest hot desert?
d. What do fennec foxes use to protect their feet?
e. Where do the cacti save their water?
f. What is the area of the Indian desert mentioned in the passage?
g. Name any one of the harsh climate conditions of a desert.
h. The _____(adapt) of the animals to their habitat is very crucial.
   Fill in the blank with the right form of the word given in the brackets.
i. Which term in the passage means 'disguise'?

OR

B. Read the following poem and answer the questions set on it. **9x1=9**

Reverie of the Poor Susan

By William Wordsworth

At the corner of Wood Street, when daylight appears,
Hangs a Thrush that sings loud, it has sung for three years:
Poor Susan has passed by the spot, and has heard
In the silence of morning the song of the Bird.

'Tis a note of enchantment; what ails her? She sees
A mountain ascending, a vision of trees;
Bright volumes of vapour through Lothbury glide,
And a river flows on through the vale of Cheapside.

Green pastures she views in the midst of the dale,
Down which she so often has tripped with her pail;
And a single small cottage, a nest like a dove's,
The one only dwelling on earth that she loves.

She looks, and her heart is in heaven: but they fade,
The mist and the river, the hill and the shade:
The stream will not flow, and the hill will not rise,
And the colours have all passed away from her eyes!

a) Name any one of the birds mentioned in the poem
b) Where does the river flow?
c) Which phrase in the poem also means that Poor Susan is not alive?

d) What time of the day is mentioned in the poem?

e) What is compared to a nest in the poem?

f) What does Susan carry when she goes down the green pastures?

g) Choose the odd combination out:

i. Mountain and hill

ii. Vapour and mist

iii. River and stream

iv. Earth and morning

h) Complete the analogy:- sees : trees : : _____ : shade

i) Which is the antonym of 'noise' used in the poem?

PART - D

31. A. Rewrite as directed **4x1=4**

i. Heera is used to come to college _____ walk.
(Use appropriate preposition)

ii. announced that / on Monday at 11 am / the judge/ would be given / the verdict
(Rearrange the above segments into a meaningful sentence)

iii. The sportspersons along with their coach always _____(follow) the norms.
(Use appropriate verb that agrees with the subject)

iv. Manu _____ (work) in this office since 2023.
(Use the appropriate form of the verb given the brackets)

OR

B. Fill in the blanks with the right linker **4x1=4**

(besides, but, who, as)

Rani Chennabhairadevi was the longest ruling queen in Indian history, _____ ruled Nagire province for 54 years. _____, history books don't make enough space for, _____ she was only a ruler under Vijayanagar Empire. _____, she was popular for exporting pepper and other spices to European and Arab regions.

32. A. Rewrite as directed **2x1=2**

i. Akash has been trying a lot to get a job, _____? **(Add a question tag)**

ii. They tried to uplift the weaker section of the society.
(Change into a question using the right form of 'do')

OR

B. Rectify the errors in the following sentences and rewrite them. **2x1=2**

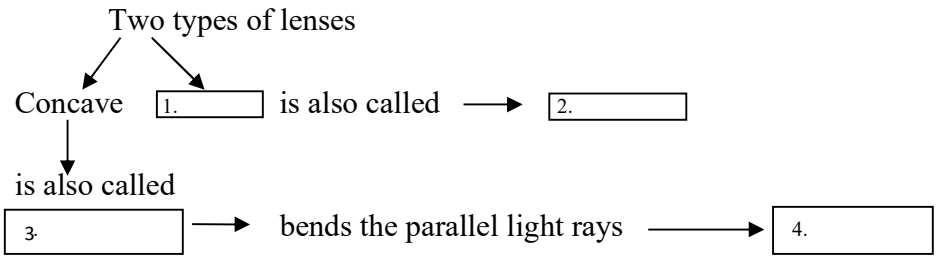
i. One of my friend is staying in London.

ii. Practise makes us perfect.

32. **Read the following passage and make notes by filling the boxes given below:** **4x1/2=2**

Convex lenses are thick in the middle and thinner at the edges. A concave lens is flat in the middle and thicker at the edges. A convex lens is also known as the converging lens as the light rays bend inwards and

converge at a point which is known as focal length. On the other hand, the concave lens is also known as a diverging lens because it bends the parallel light rays outward and diverges them at the focal point.



33. Report the following conversation. **5x1=5**

Alifano: Can we talk about your mother? How was your relation with her?

Borges: My mother was an extraordinary woman. I should speak of her kindness towards me. She had no enemies.

34. Complete the following dialogue **3x1=3**

Prakash: Hi _____ (greets)

Shweta: Hi Prakash. Good morning. How is your health now?

Prakash: I am quite okay now. _____(expresses gratitude). Can you give me the notes of yesterday's classes?

Shweta: _____(agrees)

Prakash: So kind of you. Bye.

PART - E

35. A. Write a letter of application in response to the following advertisement that appeared in The Times of India dated 11th August 2024. **5**

Wanted: Data Entry Operators
Qualification: PUC; knowledge of using computers and Kannada & English Typing.
Apply within 10 days to:
The HR Manager
Grow Ahead Marketing Solutions
Raheja Towers,
MG Road, Bangalore – 560001

(Write XXXX for name and YYYY for your address)

OR

B. Assume that you are the secretary of the college student union. You are asked to speak on the importance World Wild Life Day at the assembly. Prepare a speech in about 120 words using the following information: **5**

Importance of coexisting with other species – Decreasing forests – Animals entering the villages – The role of citizens in conserving wild life – Informing the Forest Department about smuggling of parts of animals.

xxx

GOVERNMENT OF KARNATAKA

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD

MODEL QUESTION PAPER – 3 2024 – 25

II PUC – PHYSICS (33)

Time: 3 hours **Max Marks: 70** **No. of questions : 45**

GENERAL INSTRUCTIONS:

1. ***All PARTS (A to D) are compulsory. PART-E is only for visually challenged students.***
2. ***For PART – A questions, first written-answer will be considered for awarding marks.***
3. ***Answers without relevant diagram / figure / circuit wherever necessary will not carry any marks.***
4. ***Direct answers to numerical problems without relevant formula and detailed solution will not carry any marks.***

PART – A

I. Pick the correct option among the four given options for ALL of the following questions: 15 × 1 = 15

1. The SI unit of surface charge density is _____ .

(A) C m^{-1} (B) C m^{-2} (C) C m^{-3} (D) kg m^{-3}

2. The values of electric field (E) and electric potential (V) at any point on the equatorial plane of an electric dipole are such that

(A) E = 0, V = 0 (B) E = 0, V ≠ 0 (C) E ≠ 0, V = 0 (D) E ≠ 0, V ≠ 0

3. If the potential difference across a capacitor is doubled, then the energy stored in it

(A) is doubled (B) is quadrupled (C) is halved (D) remains same

4. A wire has a non-uniform cross-sectional area as shown in the figure. A steady current I flows through it. Which one of the following statements is correct?

(A) The drift speed of electron is constant.

(B) The drift speed of electron increases while moving from *A* to *B.*

(C) The drift speed of electron decreases while moving from *A* to *B.*

(D) The drift speed of electron varies randomly.

5. A charged particle of charge q is moving in a uniform magnetic field. The angle between the velocity(v) of the charged particle and magnetic field(B) is θ. The trajectory of the charged particle varies with angle θ. Match the following table by choosing the appropriate trajectory traced by the charged particle for different possible values of angle θ.

Angle	Trajectory
(i) θ = 0^o	(a) circle
(ii) θ = 45^o	(b) straight line
(iii) θ = 90^o	(c) helix

(A) (i) – (a) , (ii) – (b), (iii) – (c) (B) (i) – (b) , (ii) – (c), (iii) – (a)

(C) (i) – (b) , (ii) – (a), (iii) – (c) (D) (i) – (c) , (ii) – (b), (iii) – (a)

6. Below are the two statements related to magnetic flux and magnetic field lines.

Statement-I : The net magnetic flux through any closed surface is zero.

Statement-II: The number of magnetic field lines leaving the surface is balanced by the number of lines entering it.

(A) Both the statements I and II are correct and II is the correct explanation for I.

(B) Both the statements I and II are correct and II is not the correct explanation for I.

(C) Statement I is wrong but the statement II is correct.

(D) Statement I is correct but the statement II is wrong.

7. The polarity of induced emf in a coil is given by _____

(A) Lenz's law (B) Faraday's law (C) Gauss's law in magnetism (D) Ampere's circuital law

8. In a transformer, the windings of the primary and secondary coils are wound one over the other to reduce the energy loss due to _____

(A) flux leakage (B) resistance of the windings (C) eddy currents (D) hysteresis

9. The electromagnetic waves suitable for RADAR systems used in aircraft navigation are

(A) Gamma rays (B) Ultraviolet rays (C) Microwaves (D) Infrared waves

10. A ray of light is incident on glass-air interface at an angle greater than the critical angle for the pair of media. Then the ray undergoes

(A) refraction only (B) partial reflection and partial refraction

(C) total internal reflection (D) grazes the surface at the interface of the two media.

11. To observe sustained interference pattern on a screen placed at a suitable distance in Young's double slit experiment, which of the following condition/s is/are necessary?

(a) Sources of light should be coherent.

(b) Sources of light should be narrow.

(c) Sources of light should be very close.

(A) only (a) (B) both (a) and (b) (C) both (b) and (c) (D) all (a), (b) and (c)

12. The de Broglie wavelength of a moving particle is independent of _____ of the particle.

(A) charge (B) mass (C) speed (D) momentum

13. For an electron revolving around the nucleus,

(A) kinetic energy and potential energy are positive, total energy is negative.

(B) kinetic energy is positive, potential energy and total energy are negative.

(C) potential energy is negative, kinetic energy and total energy are positive.

(D) kinetic energy and potential energy are negative, total energy is positive.

14. The ratio of nuclear densities of $_{13}Al^{27}$ and $_{29}Cu^{64}$ is

(A) 1 : 1 (B) 3 : 4 (C) 13 : 29 (D) 27 : 64

15. The energy band gap in conductor, insulator and semiconductor are respectively E_1 , E_2 and E_3. The relation between them is

(A) $E_1 = E_2 = E_3$ (B) $E_1 < E_2 < E_3$ (C) $E_1 > E_2 > E_3$ (D) $E_1 < E_3 < E_2$

II. Fill in the blanks by choosing appropriate answer given in the bracket for ALL of the following questions: 5 × 1 = 5

(mutual induction, inductance, diffraction, magnification, quantisation, interference)

16. One of the basic properties of electric charge is _____.

17. The ratio of the magnetic flux-linkage to the current in a coil is called _____.

18. The principle of working of a transformer is _____.

19. A microscope is used to produce large _____ of small objects.

20. The phenomenon of bending of light around the edges of an obstacle is called _____.

PART – B

III. Answer any FIVE of the following questions: **5 × 2 = 10**

21. Name the two factors on which the resistance of a metallic wire depends.

22. When does a current carrying conductor placed in a uniform magnetic field experience
(i) maximum force and (ii) minimum force?

23. Define "magnetisation of a sample". How is it related to magnetic intensity?

24. A boy peddles a stationary bicycle. The pedals of the bicycle are attached to a coil of 100 turns, each turn of area 0.20 m^2. The coil rotates at 6 rotations per second and it is placed in a uniform magnetic field of 0.01 T perpendicular to the axis of rotation of the coil. Calculate the maximum value of emf generated in the coil.

25. What is displacement current? Give the expression for it.

26. Mention two uses of polaroids.

27. Write two limitations of Bohr's atom model.

28. How can a semiconductor diode be forward biased? What happens to the width of the depletion region when forward bias voltage is increased?

PART – C

IV. Answer any FIVE of the following questions: **5 × 3 = 15**

29. Derive the expression for the torque on an electric dipole placed in a uniform electric field.

30. Give three results of electrostatics of conductors.

31. State and explain Biot-Savart's law with a suitable diagram.

32. Write the three differences between diamagnetic and ferromagnetic materials.

33. Derive the expression for motional emf induced in a straight conductor moving perpendicular to uniform magnetic field.

34. A small candle is placed at a distance of 20 cm in front of a concave mirror of radius of curvature 30 cm.
At what distance from the mirror should a screen be placed in order to obtain a sharp image?
What is the nature of the image?

35. Using Huygen's principle, show that the angle of reflection is equal to the angle of incidence when a plane wavefront is reflected by a plane surface.

36. Write the three features of nuclear force.

PART – D

V. Answer any THREE of the following questions: **3 × 5 = 15**

37. State Gauss's law in electrostatics. Derive an expression for the electric field at a point due to an infinitely long thin uniformly charged straight wire using Gauss's law.

38. Arrive at the balance condition of Wheatstone bridge using Kirchhoff's rules.

39. What is the principle behind the working of a moving coil galvanometer? With the help of a neat labelled diagram, obtain the expression for the angular deflection produced in moving coil galvanometer.

40. Derive the expression for refractive index of the material of the prism in terms of angle of minimum deviation and angle of the prism.

41. (a) Write three differences between intrinsic semiconductor and extrinsic semiconductor. **(3)**
(b) Draw the energy band diagrams of (i) n-type and (ii) p-type semiconductors at temperature T > 0 K **(2)**

VI. Answer any TWO of the following questions: **2 × 5 = 10**

42. Three capacitors of capacitances 2μF, 3μF, 6μF are connected in series.

(a) Determine the effective capacitance of the combination.

(b) Find the potential difference across 6μF capacitor if the combination is connected to a 60 V supply.

43. For copper, the number density of free electrons is 8.5×10^{28} m^{-3} and resistivity is 1.7×10^{-8} Ω m. Calculate the conductivity of copper and relaxation time of free electrons in copper.
Take the mass of electron = 9.1×10^{-31} kg and e = 1.6×10^{-19} C.

44. A resistor of 50 Ω, a pure inductor of 250mH and a capacitor are in series in a circuit containing an AC source of 220 V, 50 Hz. In the circuit, current leads the voltage by 60°. Find the capacitance of the capacitor.

45. When light of wavelength 400 nm is incident on a photosensitive surface, the stopping potential for the photoelectrons emitted is found to be 0.96 V. When light of wavelength 500 nm is incident on the same photosensitive surface, the stopping potential is found to be 0.34 V. Calculate the Planck's constant. Given: speed of light in vacuum is 3×10^8 m s^{-1} and e = 1.6×10^{-19} C.

PART – E

(FOR VISUALLY CHALLENGED STUDENTS ONLY)

4. A wire has a non-uniform cross-sectional area in which end A of the wire has smaller area than that of end B. A steady current I flows through it. Which one of the following statements is correct?

(A) The drift speed of electron is constant.

(B) The drift speed of electron increases while moving from *A* to *B.*

(C) The drift speed of electron decreases while moving from *A* to *B.*

(D) The drift speed of electron varies randomly.

****

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION & ASSESSMENT BOARD
MODEL QUESTION PAPER – 3

Class: II Year PUC | **Academic Year:** 2024-25
Subject: Chemistry (34) | **Maximum Marks:** 70
Time: 3.00 Hours | **No. of Questions:** 46

Instructions

1. Question paper has FIVE parts. All parts are compulsory.
2. a. Part-A carries 20 marks. Each question carries 1 mark.
   b. Part-B carries 06 marks. Each question carries 2 marks.
   c. Part-C carries 15 marks. Each question carries 3 marks.
   d. Part-D carries 20marks. Each question carries 5 marks.
   e. Part-E carries 09 marks. Each question carries 3 marks.
3. In Part-A questions, **first attempted answer** will be considered for awarding marks.
4. Write balanced chemical equations and draw neat labeled diagrams and graphs wherever necessary.
5. Direct answers to the numerical problems without detailed steps and specific unit for final answer will not carry any marks.
6. Use log tables and simple calculator if necessary (use of scientific calculator is not allowed).
7. For a question having circuit diagram/figure/ graph/ diagram, alternate questions are given at the end of question paper in a separate section for visually challenged students.

PART-A

I. Select the correct option from the given choices. **1 × 15 = 15**

1. The concentration term depends on temperature is

   a) ppm b) mole fraction c) molality d) molarity

2. Identify the correct sequence of number of unpaired electrons of the following ions.

   a) $Ti^{+3} > Cr^{3+} > Fe^{3+} > Ni^{2+}$ b) $Fe^{3+} > Ni^{2+} > Ti^{+3} > Cr^{3+}$

   c) $Fe^{3+} > Cr^{3+} > Ni^{2+} > Ti^{+3}$ d) $Fe^{3+} > Cr^{3+} > Ti^{+3} > Ni^{2+}$

3. Four haloalkane compounds represented by the letters M, N, O and P having boiling point are 24.2°C, 38°C, 3.56°C and 101.6°C respectively. Among the four compounds N most likely to be

   a) CH_3Cl b) CH_3Br c) C_2H_5Br d) C_3H_7I

4. Glycine is an optically inactive α-amino acid due to

   a) presence of asymmetric carbon atom b) absence of asymmetric carbon atom

   c) α-carbon attached to 4 different groups d) its acidic nature.

5. **Statement I:** Cu displaces H_2 gas from dilute acids.

   Statement II: Cu^{2+} ions get reduced more easily than H^+ ions

   a) Both Statement I and II are correct

   b) Both Statement I and II are incorrect

   c) Statement I is correct and Statement II is incorrect.

   d) Statement I is incorrect and Statement II is correct.

6. The radioactive substance reduced to $\frac{1}{4}^{th}$ of initial concentration in 20 min, then time taken to reduce to $\frac{1}{16}^{th}$ of the initial concentration is

   a) 60 min b) 120 min c) 40 min d) 15 min

7. The product/s formed when phenol is treated with excess of bromine water is/are

(i) o-bromophenol (ii) p- bromophenol (iii) picric acid (iv) 2,4,6- tribromophenol

a) only (iii) b) only (iv) c) both (i) and (ii) d) only (ii)

8. Which of the following observation is shown by 2–methylpropan-2-ol with Lucas reagent?

a) Turbidity will be observed after five minutes.
b) No turbidity will be observed at room temperature.
c) Turbidity will be observed immediately.
d) Turbidity will be observed at room temperature but will disappear after five minutes.

9. The transition metal present in red pigment of blood haemoglobin is

a) cobalt b) nickel c) iron d) copper.

10. The geometry of the complex $Fe(CO)_5$ is

a) octahedral b) tetrahedral c) trigonal bipyramidal d) square pyramidal

11. Match the following given in List I with List II

List-I	List-II
A) Gatterman-Koch reaction	i) $SnCl_2$, HCl/ H_3O^+
B) Stephen reaction	ii) CrO_2Cl_2/ H_3O^+
C) Rosenmund reaction	iii) CO, HCl/Anhyd.$AlCl_3$
D) Etard reaction	iv) H_2/ Pd-$BaSO_4$

a) A-(iv), B- (iii), C-(ii), D-(i) b) A-(iii), B-(i), C-(iv), D-(ii)

c) A-(iii), B-(i), C-(ii), D-(iv) d) A-(iii), B-(ii), C-(iv), D-(i)

12. An organic compound with the molecular formula $C_9H_{10}O$ forms 2,4-DNP derivative, reduces Tollens' reagent and undergoes Cannizzaro reaction. On vigorous oxidation, it gives 1,2-benzenedicarboxylic acid. The organic compound is

a) 3-ethyl benzaldehyde b) 2-ethyl benzaldehyde

c) 4-ethyl benzaldehyde d) 2, 3-dimethyl benzaldehyde.

13. The following factor which does not affect the rate of reaction is

a) molecularity b) temperature

c) catalyst d) concentration of reactant

14. The correct order of basic strength in case of ethyl substituted amines in aqueous solution is

a) $(C_2H_5)_2NH > (C_2H_5)_3N > C_2H_5NH_2 > NH_3$

b) $(C_2H_5)_3N > (C_2H_5)_2NH > C_2H_5NH_2 > NH_3$

c) $(C_2H_5)_3N > C_2H_5NH_2 > (C_2H_5)_2NH > NH_3$

d) $NH_3 > (C_2H_5)_2NH > (C_2H_5)_3N > C_2H_5NH_2$

15. N-Ethylbenzenesulponamide soluble in alkali because

a) It does not contain any hydrogen atom attached to nitrogen atom and is not acidic.
b) It contains hydrogen atom attached to nitrogen atom and is strongly acidic.
c) It contains hydrogen atom attached to nitrogen atom but is not acidic.
d) It does not contain any hydrogen atom attached to nitrogen atom but is acidic.

II. Fill in the blanks by choosing the appropriate word from those given in the brackets:

(S_N2, instantaneous, phosphodiester, $CHCl_3$, glycosidic, Yb^{2+},) **5 × 1 = 05**

16. During Surgery, _____ was used as anesthesia

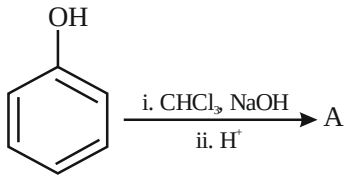
17. The rate at a particular moment of time is expressed as _____ rate of reaction.

18. The diamagnetic lanthanoid ion is _____.
19. Williamson's synthesis of preparing dimethyl ether involves _____ reaction for the attack of a methoxide ion on methyl chloride.
20. Nucleotides are joined together by _____ linkage between 5′ and 3′ carbon atoms of pentose sugar.

PART–B

III. Answer ANY THREE of the following. Each question carries two marks. 3 × 2 = 06

21. Name an important alloy, which contains maximum percentage of the lanthanoid metals. Mention one of its use.
22. Explain Fittig's reaction.
23. Write the expression to relate cryoscopic constant and change in enthalpy of fusion. Explain the terms involved in it.
24. Give an example for female sex hormone and write its function.
25. Complete the following reaction and name the reaction.



PART-C

IV. Answer ANY THREE of the following. Each question carries three marks. 3 × 3 = 09

26. Using abbreviations of following ligands, identify the number of donor sites and write the formula of each ligand. a) en b) EDTA c) PPh_3
27. Write the equations for the preparation of potassium permanganate from pyrolusite ore, what is the colour of $KMnO_4$ crystals?
28. Using Valence Bond Theory [VBT], explain geometry, hybridisation and magnetic property of $[CoF_6]^{3-}$ ion. [Atomic number of Cobalt is 27].
29. Give any three applications of coordination compounds.
30. Transition elements have higher enthalpy of atomization. Give two reasons. Among 3d and 4d series of transition elements, which series has higher enthalpy of atomization?

V. Answer ANY TWO of the following. Each question carries three marks. 2 × 3 = 06

31. What does P and Z_{AB} represent in the equation: $Rate = PZ_{AB}e^{-E_a/RT}$? Name a factor on which Z depends.
32. Name the fuel cell used in Apollo space programme and write its anodic and cathodic reaction.
33. Give any three differences between ideal and non -ideal solutions.
34. Mention any three thermodynamic properties determined by using electrochemical cells.

PART-D

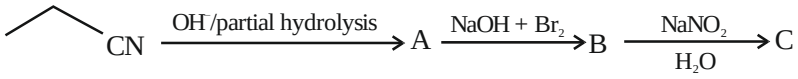
VI. Answer ANY FOUR of the following. Each question carries five marks. 4 × 5 = 20

35. a) Write the reactions involved in the conversion of toluene to m-nitrobenzoic acid.
    b) The pK_a values of acetic acid, benzoic acid and trifluoroacetic acid are 4.76, 4.19 and 0.23 respectively. Arrange them in the increasing order of acid strength. Justify the arrangement. (3+2)
36. a) Write the mechanism involved in the conversion of 2-bromo-2-methylpropane to 2-methylpropan-2-ol.
    b)What are enantiomers? Name one physical property which differs enantiomers. (3+2)
37. a) Give the mechanism involved in the acid catalyzed hydration of C_2H_4 to C_2H_5OH. (3+2)
    b) Name the enzyme involved in fermentation of glucose into ethanol and write its chemical equation.

38. a) What does tertiary structure of proteins represent? Give its two major molecular shapes.

    b) Write the Haworth structure of α – D – (+)- Glucopyranose. (3+2)

39. a) Identify the product A, B and C.



    b) Name any one biologically active amino compound used in the following:

    (i) to increase blood pressure (containing secondary amino group)

    (ii) as an anaesthetic in dentistry (a synthetic amino compound) (3+2)

40. An organic compound (X) with molecular formula C_8H_8O forms an orange-red precipitate with 2,4-DNP reagent and gives yellow precipitate on heating with iodine in the presence of sodium hydroxide. It neither reduces Tollens reagent nor does it decolourise bromine water. On oxidation with chromic acid, 'X' gives a carboxylic acid (Y) having molecular formula $C_7H_6O_2$. Identify the compounds (X) and (Y) and write all the reactions involved. 5

PART–E

(NUMERICAL PROBLEMS)

VII. Answer ANY THREE of the following. Each question carries three marks. 3 × 3 = 09

41. Calculate the molality of 20%(w/v) aqueous solution of KI. Given density of aqueous solution of KI = $1.2gcm^{-3}$. Molar mass of KI = $166gmol^{-1}$.

42. Vapour pressure of water at 293K is 17.535 mm Hg. Calculate the vapour pressure of water at 293K when 25 g of glucose is dissolved in 450 g of water.

43. Calculate the emf of the following cell and state whether the cell is feasible or not?

    Pt (s)| Br^- (0.01M) | Br_2 (l) || H^+(0.03M) | H_2 (g) (1bar) | Pt(s) $E^o(½Br_2|Br^-) = 1.09V$.

44. Calculate the limiting molar conductivity of Cl^- by using the data Λ^o for $CaCl_2$ = 271.6 S cm^2 mol^{-1} and λ^0 for Ca^{2+} = 119.0 S cm^2 mol^{-1}.

45. The rate constant for a reaction is 60 s^{-1}. How much time will it take to reduce the initial concentration of the reactant to its $1/16^{th}$value?

46. In the given reaction A→B, the rate constant k is 2.0 x 10^{-2} lit $mol^{-1}s^{-1}$, find initial rate of reaction when [A] = 0.5 M at 298K.

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
WEIGHTAGE FRAMEWORK FOR MQP 3: II PU MATHEMATICS (35):2024-25

Chapter	CONTENT	Number of Teaching hours	PART A 1 mark		PART B 2 mark	PART C 3 mark	PART D 5 mark	PART E		Total
			MCQ	FB				6 mark	4 mark	
1	RELATIONS AND FUNCTIONS	9	1			1	1			9
2	INVERSE TRIGONOMETRIC FUNCTIONS	6	2		2					6
3	MATRICES	9	1	1	1		1			9
4	DETERMINANTS	12	1		1		1		1	12
5	CONTINUITY AND DIFFERENTIABILITY	20	2	1	1	1	1		1	17
6	APPLICATION OF DERIVATIVES	10	2	1	1	1				8
7	INTEGRALS	22	1	1	1	1	1	1		18
8	APPLICATION OF INTEGRALS	5					1			5
9	DIFFERENTIAL EQUATIONS	10	1		1		1			8
10	VECTOR ALGEBRA	11	2			2				8
11	THREE D GEOMETRY	8	1		1	1				6
12	LINEAR ROGRAMMING	7						1		6
13	PROBABILITY	11	1	1		2				8
	TOTAL	**140**	**15**	**5**	**9**	**9**	**7**	**2**	**2**	**120**

GOVERNMENT OF KARNATAKA
KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD

Model Question Paper -3

II P.U.C MATHEMATICS (35):2024-25

Time : 3 hours **Max. Marks : 80**

Instructions :

1) *The question paper has five parts namely A, B, C, D and E. Answer all the parts.*
2) *PART A has 15 MCQ's ,5 Fill in the blanks of 1 mark each.*
3) *Use the graph sheet for question on linear programming in PART E.*

PART A

I. Answer ALL the Multiple Choice Questions **15×1 = 15**

1. The element needed to be added to the relation R={(1,1), (1,3), (2,2),(3,3) } on A = {1, 2, 3} so that the relation is neither symmetric nor transitive

A) (2, 3) B) (3, 1) C) (1, 2) D) (3, 2)

2. The graph of the function $y = \cos^{-1} x$ is the mirror image of the graph of the function y = cosx along the line

A) x = 0 B) y = x C) y = 1 D) y = 0

3. The value of $\tan^{-1}(\sqrt{3}) + \sec^{-1}(-2)$ is equal to

A) π B) $\frac{2\pi}{3}$ C) $-\frac{\pi}{3}$ D) $\frac{\pi}{3}$

4. If A and B are matrices of order 3 × 2 and 2 × 2 respectively, then which of the following are defined

A) AB B) BA C) A^2 D) A + B

5. A square matrix A is invertible if A is

A) Null matrix B) Singular matrix
C) skew symmetric matrix of order 3 D) Non-Singular matrix

6. If $y = \sin^{-1}(x\sqrt{x})$, then $\frac{dy}{dx} =$

A) $\frac{1}{\sqrt{1-x^3}}$ B) $\frac{2\sqrt{x}}{3\sqrt{1-x^3}}$ C) $\frac{3\sqrt{x}}{2\sqrt{1-x^3}}$ D) $\frac{-3\sqrt{x}}{2\sqrt{1-x^3}}$.

7. If $y = x^a + a^x + a^a$ for some fixed $a > 0$ and $x > 0$, then $\frac{dy}{dx} =$

(A) $ax^{a-1} + a^x \log a + aa^{a-1}$ B) $ax^{a-1} + a^x \log a$

C) $ax^{a-1} + xa^{x-1} + aa^{a-1}$ D) $ax^{a-1} + a^x \log a + a^a$.

8. Consider the following statements for the given function y=f(x) defined on an interval I and c∈ I, at x = c

I. $f'(c) = 0$ and $f''(c) < 0 \Rightarrow$ f attains local maxima
II. $f'(c) = 0$ and $f''(c) > 0 \Rightarrow$ f attains local minima
III. $f'(c) = 0$ and $f''(c) = 0 \Rightarrow$ f attains both maxima and minima

A) I and II are true B) I and III are true

C) II and III are true D) all are false

9. If each side of a cube is x units, then the rate of change of its surface area with respect to side is

A) 12x B) 6x C) $6x^2$ D) $3x^2$

10. Statement 1: The anti-derivative of $\left(\frac{1}{\sqrt{1+x^2}}\right)$ with respect to x is

$$\frac{x}{2}\sqrt{1+x^2}+\frac{1}{2}\log\left|x+\sqrt{1+x^2}\right|+C.$$

Statement 2**:** The derivative of $\frac{x}{2}\sqrt{1+x^2}+\frac{1}{2}\log\left|x+\sqrt{1+x^2}\right|+C$ with respect to x is $\frac{1}{\sqrt{1+x^2}}$.

A) Statement 1 is true, and Statement 2 is false.
B) Statement 1 is true, and Statement 2 is true, Statement 2 is correct explanation for Statement 1
C) Statement 1 is true, and Statement 2 is true, Statement 2 is not a correct explanation for Statement 1
D) Both statements are false.

11. The degree of the differential equation $\left(\frac{d^2y}{dx^2}\right)^3+\left(\frac{dy}{dx}\right)^2+\sin\left(\frac{dy}{dx}\right)+1=0$ is

A) 2 B) 3 C) 5 D) not defined

12. The position vector of a point which divides the join of points with position vectors $3\vec{a}-2\vec{b}$ and $\vec{a}+\vec{b}$ externally in the ratio 2 : 1 is

A) $\frac{5\vec{a}}{3}$ B) $4\vec{a}-\vec{b}$ C) $4\vec{b}-\vec{a}$ D) $2\vec{a}+\vec{b}$

13. If a vector $\vec{a}$ makes angles with $\frac{\pi}{3}$ with $\hat{\imath}$ *and* $\frac{\pi}{4}$ with $\hat{\jmath}$ and an acute angle θ with $\hat{k}$, then θ is

A) $\frac{\pi}{6}$ B) $\frac{\pi}{4}$ C) $\frac{\pi}{3}$ D) $\frac{\pi}{2}$

14. Find the angle between the lines whose direction ratios are a, b, c and $b-c, c-a, a-b$ is

A) 45^0 B) 30^0 C) 60^0 D) 90^0

15. If A and B are two independent events such that $P(A) = \frac{1}{4}$ and $P(B) = \frac{1}{2}$ then P(neither A nor B)

A) $\frac{1}{3}$ B) $\frac{3}{8}$ C) $\frac{7}{8}$ D) $\frac{1}{2}$.

II. Fill in the blanks by choosing the appropriate answer from those given in the bracket (-2, $\frac{5}{2}$, 0, 1, 2, $\frac{3}{2}$) 5×1 = 5

16. The number of all possible orders of matrices with 13 elements is ____

17. If y = 5 cos x – 3 sin x, then $\frac{d^2y}{dx^2} + y =$_____

18. If the function f given by $f(x) = x^2 + ax + 1$ is increasing on [1, 2], then the value of 'a' is greater than _____

19. $\int_1^2 |x|\,dx =$_____

20. If A and B are any two events such that P(A) + P(B) – P(A and B) =P(A), then P(A | B) is_____

PART B

Answer any SIX questions **6 × 2=12**

21. Write the simplest form of $\tan^{-1}\left(\sqrt{\frac{1-cosx}{1+cosx}}\right)$, $0 < x < \pi$.

22. Prove that $2\sin^{-1}\frac{3}{5} = \tan^{-1}\frac{24}{7}$.

23. If F(x)= $\begin{bmatrix} cosx & -sinx & 0 \\ sinx & cosx & 0 \\ 0 & 0 & 1 \end{bmatrix}$, then show that F($x$) F($y$) = F($x + y$).

24. Find the equation of line joining (1, 2) and (3, 6) using determinants.

25. Differentiate $x^{\sin x}$, $x > 0$ with respect to x.

26. Find the intervals in which the function f given by $f(x) = x^2e^{-x}$ is increasing.

27. Find $\int (x^2+1)\log x\,dx$.

28. Verify the function y =mx is the solution of $\frac{dy}{dx} - y = 0$, x ≠ 0.

29. Find the distance between the lines $\vec{r} = \hat{\imath} + 2\hat{\jmath} - 4\hat{k} + \lambda(2\hat{\imath} + 3\hat{\jmath} + 6\hat{k})$ and $\vec{r} = 3\hat{\imath} + 3\hat{\jmath} - 5\hat{k} + \mu(2\hat{\imath} + 3\hat{\jmath} + 6\hat{k})$.

PART C

Answer any SIX questions **6 × 3= 18**

30. Let f: X →Y be a function. Define a relation R in X given by R = {(a, b): $f(a) = f(b)$}. Examine whether R is an equivalence relation or not.

31. If $x^3 + x^2y + xy^2 + y^3 = 81$, then find $\frac{dy}{dx}$.

32. The length x of a rectangle is decreasing at the rate of 3 cm/min and the width y is increasing at the rate of 2 cm/min. When $x = 10$ cm and $y = 6$ cm, find the rate of change of the perimeter of the rectangle.

33. Find the integral of $\frac{1}{a^2 + x^2}$ with respect to x .

34. If the vertices A, B and C of a triangle are $(1, 2, 3)$, $(-1, 0, 0)$ and $(0, 1, 2)$ respectively, then find the angle $\angle ABC$.

35. Find the area of the rectangle, whose vertices are $A\left(-\hat{i}+\frac{1}{2}\hat{j}+4k\right)$, $B\left(\hat{i}+\frac{1}{2}j+4k\right)$, $C\left(\hat{i}-\frac{1}{2}j+4k\right)$ and $D\left(-\hat{i}-\frac{1}{2}j+4k\right)$.

36. Find the vector equation of the line passing through the point (1, 2, – 4) and perpendicular to the two lines: $\frac{x-8}{3} = \frac{y+19}{-16} = \frac{z-10}{7}$ and $\frac{x-15}{3} = \frac{y-29}{8} = \frac{z-5}{-5}$.

37. An urn contains 5 red and 5 black balls. A ball is drawn at random, its colour is noted and is returned to the urn. Moreover, 2 additional balls of the colour drawn are put in the urn and then a ball is drawn at random. What is the probability that the second ball is red.

38. Three coins are tossed simultaneously. Consider the Event E 'three heads or three tails', F 'at least two heads and G 'at most two heads'. Of the pairs (E,F), (E, G) and (F, G), which are independent? Which are dependent?

PART D

Answer any FOUR questions **4 × 5 = 20**

39. Let f: N →Y be a function defined as $f(x) = 4x + 3$, where, Y = {$y \in$ N: $y = 4x + 3$ for some $x \in$ N}. Show that f is invertible. Find the inverse of f.

40. If $A = \begin{bmatrix} 0 & 6 & 7 \\ -6 & 0 & 8 \\ 7 & -8 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 2 \\ 1 & 2 & 0 \end{bmatrix}$ and $C = \begin{bmatrix} 2 \\ -2 \\ 3 \end{bmatrix}$, calculate AB, AC and A(B + C). Verify that $A(B+C) = AB + AC$.

41. Solve the following system of linear equations by matrix method:

$2x + y + z = 1$, $x - 2y - z = \frac{3}{2}$ and $3y - 5z = 9$.

42. If $x = a(\cos t + t \sin t)$ and $y = a(\sin t - t \cos t)$, find $\frac{d^2y}{dx^2}$.

43. Find $\int \frac{x^4}{(x-1)(x^2+1)} dx$.

44. Find the area of the region bounded by the line $y = 3x + 2$, the x-axis and the ordinates $x = -1$ and $x = 1$ by integration method.

45. Find the equation of a curve passing through the origin given that the slope of the tangent to the curve at any point (x, y) is equal to the sum of the ordinates of the point.

PART E

Answer the following questions:

46. (a) Prove that $\int_{-a}^{a} f(x)\,dx = \begin{cases} 2\int_{0}^{a} f(x)\,dx, & \text{if f(x) is even} \\ 0, & \text{if f(x) is odd} \end{cases}$

and evaluate $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin^7 x\,dx$

OR

Solve the following linear programming problem graphically:

Minimize and maximize $Z = x + 2y$, subject to constraints

$x + 2y \geq 100,\ 2x - y \leq 0,\ 2x + y \leq 200\ and\ x, y \geq 0$.

6

47. If matrix $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$ satisfying $A^3-6A^2+9A-4I=O$, then evaluate A^{-1}.

OR

If $f(x) = \begin{cases} \frac{k\cos x}{\pi - 2x}, & If\ x \neq \frac{\pi}{2} \\ 3, & if\ x = \frac{\pi}{2} \end{cases}$ is continuous at $x = \frac{\pi}{2}$, find k . **4**

****

GOVERNMENT OF KARNATAKA

KARNATAKA SCHOOL EXAMINATION AND ASSESEMENT BOARD

MODEL QUESTION PAPER – 3 (2024 – 25)

II PU SUBJECT – BIOLOGY (36)

Duration: 3hr **Max. Marks: 70**

General Instructions:

This Question paper consists of parts A, B, C, D, E

Part – A consists of I and II and Part D consists of V and VI

All the parts are compulsory

The answers for Part – A written in the first two pages of the answer booklet are only considered for evaluation

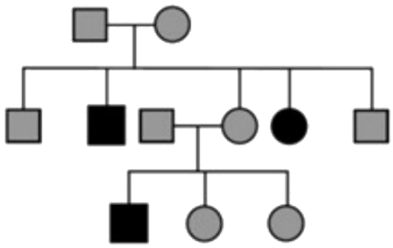
Part – E consists of questions for visually challenged students only

PART- A

I. Select the correct alternative from the choices given below: **15 x 1=15**

1. The Ploidy of Perisperm present in beet seed is
   a) Haploid b) Diploid
   c) Tetraploid d) Triploid
2. Some plants such as *Viola* (common pansy), *Oxalis* and *Commelina* produce two types of flowers namely
   a) Chasmogamous and Xenogamous b) Cleistogamous and Geitonogamous
   c) Geitonogamous and Xenogamous d) Chasmogamous and Cleistogamous
3. The correct sequence of embryonic development in angiosperm is
   a) Zygote → Globular → Pro –embryo → Heart shaped → Mature embryo
   b) Zygote → Heart shaped → Pro –embryo → Globular → Mature embryo
   c) Zygote → Pro –embryo → Globular → Heart shaped → Mature embryo
   d) Zygote → Globular → Heart shaped → Pro –embryo → Mature embryo
4. During pregnancy the foetus develops limbs and digits
   a) After three weeks b) after eight weeks
   c) After six weeks d) after nine weeks
5. In spermatogenesis, if FSH hormone is not secreted from the anterior pituitary gland, which stage is affected
   a) Formation of primary spermatocyte b) formation of spermatozoa
   c) Formation of spermatid d) formation of secondary spermatocyte
6. To produce 2000 sperm and 400 ova, how many spermatogonia and oogonia are required?
   a) 500 spermatogonia and 200 oogonia b) 500 spermatogonia and 400 oogonia
   b) 250 spermatogonia and 250 oogonia d) 250 spermatogonia and 400 oogonia
7. Which among the following sexually transmitted infection (STIs) are not curable
   a) Gonorrhoea, syphilis, hepatitis-B
   b) Chlamydiasis, genital warts, trichomoniasis
   c) Gonorrhea, HIV infection, chlamydiasis
   d) Hepatitis –B, genital herpes and HIV infection

8. A pedigree chart is given below, identify the trait responsible for this inheritance pattern



a) Autosomal dominant trait b) Autosomal recessive trait
c) X- linked recessive trait d) X – linked dominant trait

9. In Lac –operon, if mutation occurs in the Z – gene
a) Transacetylase will not be synthesized
b) β- galactosidase will not be synthesized
c) Permease will not be synthesized
d) Lactose digestion will be rapid

10. Match the type of Man with their origin periods and choose the correct answer

Column I	Column II
A. Ramapithecus	i) 1.5 mya
B. Australopithecines	ii) 15 mya
C. Homo erectus	iii) 1, 00, 000 -40,000 years back
D. Neanderthal man	iv) 2 mya
	v) 3 mya

a) A-i, B -iv, C –iii, D-ii b) A –ii, B- iv, C-i, D – iii
c) A –iii, B- i, C-iv, D- v d) A- iv, B –ii, C –iii, D – v

11. Now a days diseases like dengue and chikungunya are widespread in different parts of India, to prevent the spread of the disease which vector has to be eliminated
a) Culex b) Anapheles
c) Female anopheles d) Aedes

12. If a patient has undergone myocardial infraction leading to heart attack, to remove clots from the blood vessels of patient, which enzyme is used by the doctor to treat the patient
a) Pectinase b) streptokinase
c) Protease d) lipase

13. A piece of alien DNA cannot multiply itself in the progeny cells of the organism due to
a) Lack of ori- site b) Denaturation
c) Renaturation d) Incompatibility

14. Hind II cuts DNA molecule by recognizing a specific recognition sequence of
a) 3 base pairs b) 6 base pairs
c) 8 base pairs d) 10 base pairs

15. Given below is a portion of DNA strand giving the base sequence on the opposite strand, what is so special shown in it?

5′-----GAATTC------3′
3′-----CTTAAG------5′

a) Replication completed b) Deletion mutation
c) Start codon at the 5′ d) Palindromic sequence

II. Fill in the blanks by choosing the appropriate word/ words from those given below (5x1=5)
(Saccharomyces cerevisiae, Adaptive radiation, Hormone releasing IUDs, RNA interference, sacred groves, Bacteria)

16. _____make the uterus unsuitable for implantation and the cervix hostile to the sperm.
17. The process of evolution of different species in a given geographical area starting from a point and literally radiating to other areas of geography (habitats) is called _____
18. _____is used for fermenting malted cereals and fruit juices, to produce ethanol.
19. The phenomenon of silencing of a specific mRNA due to a complementary dsRNA molecule that binds to mRNA and prevents translation is _____.
20. _____ are the tracts of forest were set aside and all the trees and wildlife within were venerated and given total protection.

PART -B

III. Answer any five the following questions in 3-5 sentences wherever applicable: 5 x 2 =10

21. What are emergency contraceptives? Write their hormonal combination.
22. List the measure to check the population growth rate.
23. What is haplo-diploid sex determination mechanism? Mention an animal which exhibits this.
24. Write a note on the role of sigma factor and the rho factor in transcription in prokaryotes.
25. Mention the evolutionary significance of the following organisms.
    a) Shrews b) Lobefins
26. Write the role of Cyanobacteria that act as biofertilisers.
27. ELISA is one of the methods of molecular diagnosis, what is the principle of this technique? Name the disease which can be detected by this method.

PART –C

IV. Answer any five of the following question in 40-80 sentences wherever applicable: 5x3=15

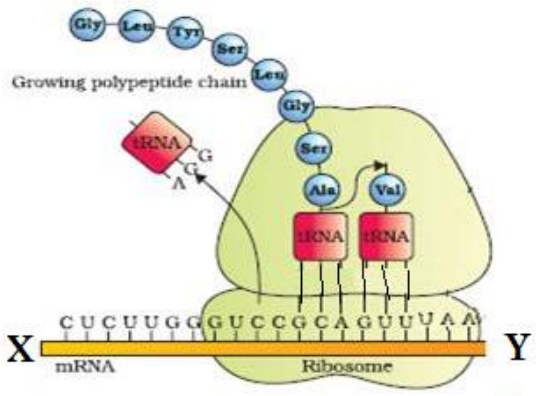
28. Draw a labelled diagram of Transverse section of young anther.
29. During pregnancy the level of hormones are increase several fold in the maternal blood. Name the hormones and write their importance.
30. Draw a labelled diagram of Miller's experimental set up.
31. The use of biocontrol measures will greatly reduce our dependence on toxic chemicals and pesticides. Justify with an example.
32. What is Gene therapy? Write the steps involved in curing ADA deficiency by gene therapy.
33. Pyramid of energy is always upright, can never be inverted. Give reasons.
34. There are many reasons for conserving biodiversity. Briefly explain the reason for conserving biodiversity from the narrowly utilitarian point of view.

PART- D

V. Answer any four of the following questions in about 200 -250 words each, wherever applicable: 4 x 5=20

35. Draw a neat labelled diagrammatic sectional view of male reproductive system.
36. a) Define aneuploidy. Give two examples of aneuploidy. (2M)
    b) Mention the karyotype of Klinefelter's syndrome of an affected individual and write its symptoms. (3M)

37.



a) Identify the polarity of X and Y in the above given diagram and how many more amino acids are expected to be added to this elongating polypeptide chain (2M)

b) Which sequences of bases are generally found at the X and Y polarity? (1M)

c) Mention the anticodon for alanine and valine amino acids based on the diagram (1M)

d) What is the composition of the catalyst involved in the peptide bond formation in this process? (1M)

38. List the salient features of Human Genome.

39. What are lymphoid organs? Write the functions of the following in response to Immune system in our body.

a) Bone marrow b) Thymus c) Spleen d) Lymph nodes.

40. Explain different techniques which help in cancer detection and diagnosis.

41. a) Write three vector free techniques that can be utilized to transfer recombinant DNA into a ready host cell. (3M)

b) *Agrobacterium tumifaciens* act as natural vector for cloning genes in plants. Substantiate. (2M)

VI. Answer any one of the following questions in about 200 -250 words each, wherever applicable: **1 x 5 = 5**

42. Picture related to pollination is given below:

a) Will this pollination confirms fertilization? (2M)

b) What are the floral rewards provided by the plants to the insects to revisit? (1M)

c) Mention the characteristics of flower in this pollination other than floral rewards (2M)

43. Thalassemia is a quantitative problem of synthesizing globin. Explain in detail with respect to the chromosome, number of genes and alleles and the features.

44. a) Predators are 'Prudent and conduits' in Nature. Support your answer by giving reason. (3M)

b) To lessen the impact of predation, prey species have evolved different defensive methods in plants and animals, support your answer by giving one example each for a plant and an animal. (2M)

PART – E

(FOR VISUALLY CHALLENGED STUDENTS ONLY)

8. Which of the following is not a recessive gene linked disorder (1M)

a) Myotonic dystrophy b) Sickle cell anaemia

c) Haemophilia d) Colourblindness

37. Explain the aminoacylation of tRNA and formation of initiation complex in translation. (5M)

42. What is pollination? Write the characteristics of insect pollinated flowers. (5M)

****