B

SL. No. : VV

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 42]
Total No. of Questions : 42]

[ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 12
[Total No. of Printed Pages : 12

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E**

CCE RR

REVISED & UN-REVISED

Code No. : 83-E

ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತಶಾಸ್ತ್ರ, ರಸಾಯನಶಾಸ್ತ್ರ ಮತ್ತು ಜೀವಶಾಸ್ತ್ರ / Physics, Chemistry & Biology)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Repeater)

ದಿನಾಂಕ : 25. 06. 2018]

[Date : 25. 06. 2018

ಸಮಯ : ಬೆಳಿಗ್ಗೆ 9-30 ರಿಂದ ಮಧ್ಯಾಹ–12-30 ರವರೆಗೆ] [Time : 9-30 A.M. to 12-30 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80]

[Max. Marks : 80

TEAR HERE TO OPEN THE QUESTION PAPER
ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

General Instructions to the Candidate :

1. This Question Paper consists of 42 objective and subjective types of questions.
2. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
3. Follow the instructions given against both the objective and subjective types of questions.
4. Figures in the right hand margin indicate maximum marks for the questions.
5. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

Tear here

Four alternatives are given for each of the following questions / incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet.

$10 \times 1 = 10$

1. The sulphide ore among the following is

(A) Bauxite (B) Chalcopyrite

(C) Azurite (D) Malachite.

2. A source of sound moves towards a stationary observer and crosses the observer and moves forward. The observer in this situation feels as if the pitch of the sound is

(A) increasing

(B) decreasing

(C) initially decreasing and increasing later

(D) initially increasing and decreasing later.

3. The group that contains only non-biodegradable pollutants is

(a) wood, paper, leather

(b) lead, bakelite, DDT

(c) plastic, detergents, grass

(d) polythene, bakelite, PVC.

(A) (b) only (B) (a) and (c)

(C) (d) only (D) (b) and (d).

4. An application of Charles law in the following is

(A) feeling of pain in ears of passengers while aeroplane is ascending suddenly

(B) smell of hot food reaches us faster than cold food

(C) balloon pops out more frequently in summer than in winter

(D) balloon pops out when squeezed over the limit.

5. A person shows the symptoms such as ulcers on the nose and lower leg, gradual blindness and dementia. The disease having these symptoms and the microbe causing this disease is

(A) Syphilis — Treponema Pallidum

(B) Gonnorrhoea — Neisseria Gonorrhoeae

(C) Genital warts — Human Papilloma virus

(D) Genital herpes — Herpes Simplex virus.

6. In a transformer the product of current and voltage of primary coil is 440 W. If the secondary voltage is 220 V, then the current in the secondary coil is

(A) 20 A (B) 2 A

(C) 4 A (D) 2·2 A.

7. The four steps of manufacturing common sugar are given in wrong order.

(a) Concentration and crystallization of juice.

(b) Purification of juice.

(c) Separation and drying of crystals.

(d) Extraction of juice from the source.

The correct arrangement of these steps is

(A) b, d, c, a (B) d, a, b, c

(C) a, c, d, b (D) d, b, a, c.

8. The correct statement with reference to wind energy and wave energy in the following is

(A) Wind energy is more reliable than wave energy

(B) The cost per unit for the conversion of wind energy into electrical energy is very high.

(C) Fluctuation in the energy availability is lesser in wave energy than in wind energy

(D) Wind energy turbines use specialised instruments when compared to wave energy converters.

9. In a copper voltameter, the mass of copper deposited at the cathode when 3 A of current is passed for 20 minutes is [ECE of copper is 0·0003 g/coulomb]

(A) 18 g (B) 1·8 g

(C) 1·08 g (D) 10·8 g.

10. The features of oesophagus muscles are

(A) Striped, cylindrical shape, voluntary

(B) Unstriped, spindle shape, involuntary

(C) Striped, cylindrical shape, involuntary

(D) Unstriped, spindle shape, voluntary.

11. The parts of a vehicle/engine are given in **Column-A** and their related aspects are given in **Column-B**. Match them and write the answer along with its letters : $4 \times 1 = 4$

Column - A	***Column - B***
(A) Carburettor	(i) Remains closed in intake stroke and remains open in exhaust stroke
(B) Crank shaft	(ii) Petrol and air are mixed here
(C) Spark plug	(iii) Mixture of petrol and air is compressed here
(D) Outlet valve	(iv) Injects controlled quantity of fuel in the form of micelles into the engine
	(v) Helps in igniting the petrol and air mixture
	(vi) Remains open in intake stroke and remains closed in exhaust stroke
	(vii) Converts linear motion into circular motion.

Answer the following questions. $7 \times 1 = 7$

12. State Boyle's law.

13. Mention any two characteristics of Jatropa plant whose seeds are used for transesterification.

14. Write any two functions of feathers in birds.

15. Choose the elements in the following that belong to the same period in modern periodic table :

Element	Hydrogen	Sodium	Carbon	Silicon
Atomic No.	1	11	6	14

16. Name the device for obtaining high DC voltage from a low DC voltage source.

17. State the Mendel's law of segregation.

18. When a person is very angry, the rate of heart-beat and breathing increases. Name the part of autonomic nervous system that brings these changes into normal condition.

Answer the following questions. 16 × 2 = 32

19. Mention the four steps in the manufacture of paper.

OR

Mention the four steps in the manufacture of glass.

20. Draw the diagram showing the external features of a fish and label the following parts.

(a) Operculum

(b) Scales.

21. What is atomic size ? How does atomic size vary from left to right along the period and down the group in modern periodic table ?

22. Mention four physical features of Neanderthal man.

OR

Write any two physical features of Caucasoids and Congoids.

23. Write any two differences between transverse waves and longitudinal waves.

24. Draw the diagram of the instrument used in electrolysis and label the following parts.

    (a) Ammeter

    (b) Anode.

25. "The environmentalists oppose the overuse of the products containing aerosols." Give reasons.

26. Write the chemical equation indicating the preparation of carborundum using silicon. Write any one use of carborundum.

27. The ultrasonic waves sent from submarines *A* and *B* take 4s and 6s respectively to reach the iceberg *C*. If *A, B* and *C* are collinear and *A* and *B* are on the same side of *C*, then find the distance between *A* and *B*.

    [The speed of ultrasonic waves in water is 1·5 km/s]

28. "The Government should encourage urban people to take up the practice of roof top gardening." Why ? Give reasons.

OR

"Transgenic plants play a very important role in decreasing the food scarcity of the country." How ? Explain.

29. Draw the diagram of an AC dynamo and label the following parts.

    (a) Slip rings

    (b) Brushes.

30. (a) What is fermentation ? Name the gas usually produced during fermentation.

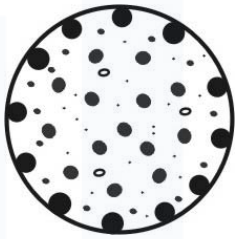
(b) What is substrate ?

OR

(a) What is molasses ?

(b) Mention the two uses of Caramel.

31. A student observes the cross-section of a plant stem under the compound microscope and draws the following diagram.



(a) Name the group of angiosperms to which this stem belongs.

(b) Write the features of that group with respect to root and flower.

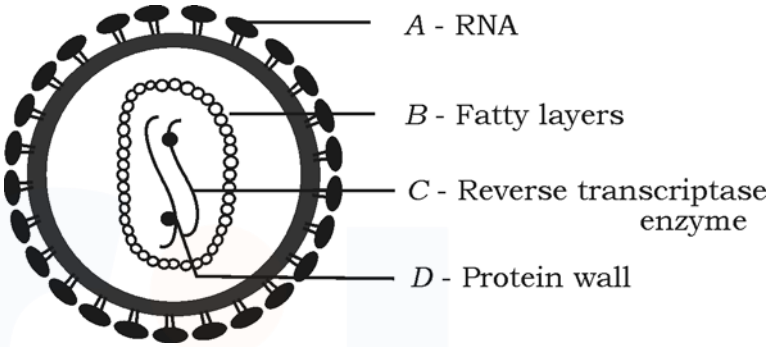
32. Write the molecular formula and structural formula of marsh gas. Why is it called marsh gas ?

OR

Why graphite and diamond are called allotropes of carbon ? Name the two artificially synthesised allotropes of carbon.

33. A student adds nitric acid to a test tube having copper turnings and observes the changes in the test tube. He correctly concludes that moderately concentrated nitric acid was added to the test tube. Give scientific reasons for his conclusion. Write the balanced chemical equation indicating this reaction.

34. A student has wrongly labelled the parts *A, B, C* and *D* in the following diagram.



Correct his mistakes and name the parts *A, B, C* and *D* of the diagram.

Answer the following questions. $5 \times 3 = 15$

35. Draw the diagram of a nuclear power reactor and label the following parts.

(a) Heat Exchanger

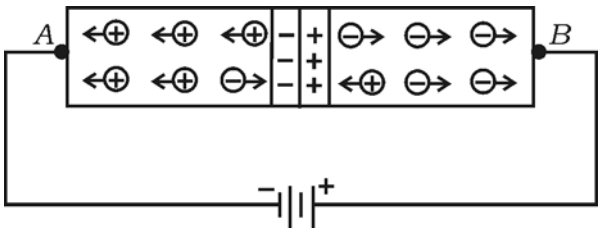
(b) Reflector.

36. What is dihybrid cross ? Represent the result obtained in F_2 generation of dihybrid cross when a tall pea plant bearing yellow seeds (*TTYY*) is crossed with a dwarf pea plant bearing green seeds (*ttyy*) with the help of checker board.

OR

Explain the double helix structure of DNA molecule.

37. Observe the figure and answer the following questions :



(a) What type of bias is shown in the figure ?

(b) What type of impurity is added to the side of the semiconductor connected to end *A* ?'

(c) What happens to the junction resistance, if the terminals of the battery are reversed ?

OR

(a) What type of extrinsic semiconductor is obtained if an element with atomic number 15 is doped with silicon ?

(b) What type of majority carriers are found in silicon if an element with atomic number 13 is added to it as an impurity ?

(c) Why *p-n* junction is used in rectifying action ?

38. Draw the diagram of the apparatus used in the extraction of aluminium from alumina, and label the following parts.

(a) Electrode connected to graphite

(b) Molten aluminium.

39. Explain the structure and function of a nerve cell.

Answer the following questions : $3 \times 4 = 12$

40. (a) Explain the formation of planetary nebula.

(b) Some artificial satellites appear to be in the fixed positions relative to earth. Why ? What are these artificial satellites called ?

41. (a) Why are oils converted into solid fats ? What is the role of nickel in this process ?

(b) Write the molecular formula and structural formula of fourth member of alkenes and alkynes.

OR

(a) Write the structural formula of Glycerol and Salicylic acid.

(b) Explain the steps in the process of saponification.

42. Draw the vertical section of the human eye and label the following parts.

(a) The region where a distinct clear image is formed

(b) The sensory nerve which carries visual impulses to the cerebrum of brain.