ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 12]

Total No. of Printed Pages : 12]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 52]

Total No. of Questions : 52]

ಸಂಕೇತ ಸಂಖ್ಯೆ : 83-E

Code No. : 83-E

D

CCE PR
UNREVISED

Question Paper Serial No. 41

ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಕ್ರಮ ಸಂಖ್ಯೆ

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

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

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

(ಹಳೆ ಪಠ್ಯಕ್ರಮ / Old Syllabus)

(ಪುನರಾವರ್ತಿತ ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / Private Repeater)

ದಿನಾಂಕ : 28. 09. 2020] [Date : 28. 09. 2020

ಸಮಯ : ಬೆಳಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ 1-45 ರವರೆಗೆ] [Time : 10-30 A.M. to 1-45 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 100] [Max. Marks : 100

TEAR HERE TO OPEN THE QUESTION PAPER
ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಹರಿಯಿರಿ

Tear here

General Instructions to the Candidate :

1. This Question Paper consists of 52 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.

Four alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. $10 \times 1 = 10$

1. Electronic configuration of an element is $1s^2\ 2s^2\ 2p^6\ 3s^1$. In modern periodic table this element belongs to

   (A) 1st period (B) 2nd period

   (C) 3rd period (D) 6th period.

2. If the time period of a wave is increased by four times then its frequency

   (A) increases by 4 times

   (B) decreases by 4 times

   (C) increases by 2 times

   (D) decreases by 2 times.

3. The disease caused by human papiloma virus is

   (A) Birdflu (B) Gonorrhoea

   (C) Syphilis (D) Genital warts.

4. At constant temperature if '*V*' is the volume of certain mass of a gas under pressure '*P*' then the relation between them is

   (A) $V \propto \frac{1}{P}$ (B) $P \propto \frac{1}{\sqrt{V}}$

   (C) $V = P$ (D) $V \propto P$.

5. Emitter segment in transistor is

(A) lightly doped

(B) moderately doped

(C) heavily doped

(D) a pure semiconductor.

6. The hormone deficiency in a person suffering from goitre is

(A) Parathormone

(B) Thyroxine

(C) Insulin

(D) Cortisone.

7. The electrolyte which dissociates partially in aqueous solution is

(A) Hydrochloric acid

(B) Copper sulphate

(C) Sodium chloride

(D) Acetic acid.

8. The type of waves used to detect vehicles crossing speed limit is

(A) Radio waves

(B) Ultraviolet waves

(C) Ultrasonic waves

(D) Audible sound waves.

9. The technique used to identify the genetic relationship is

(A) cloning

(B) DNA finger print technology

(C) blood test

(D) tissue culture.

10. The silicon compound used in the removal of hardness of water is

(A) silicone (B) silicon carbide

(C) zeolite (D) quartz.

11. The major characteristic in the evolution of stars is given in **Column-A**. Match them with the stages of star evolution given in **Column-B** and write the answers along with its letters : $4 \times 1 = 4$

Column - A	***Column - B***
(A) Outer layers of the star swell	(i) Protostar
(B) Aggregation of hydrogen gas at the centre	(ii) Steady state
(C) Outward radiation pressure is equal to the inward gravitational pull	(iii) Red giant
(D) The remnant of supernova explosion that has very high density and gravity	(iv) White dwarf
	(v) Pulsar
	(vi) Black hole
	(vii) Quasar

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

12. "When compared to detergents soaps are ecofriendly." Why ?

13. What is an alloy ?

14. When apical portion of the jowar plant is cut and removed, then the plant will die. Why ?

15. The motion of simple pendulum is an example for simple harmonic motion. Why ?

16. What is rate of diffusion ?

17. What is monohybrid cross ?

18. Workers should wear gas masks in glass industries. Why ?

Answer the following questions : $26 \times 2 = 52$

19. Mention the symptoms found in a person suffering from dengue fever.

20. A telecommunication company *'A'* uses metallic wires and *'B'* uses optical fibres for their network. Which company has best communication network system ? Why ?

21. What is efficiency of a heat engine ? Write the formula to calculate the efficiency of a heat engine.

OR

Write the stages involved in the working of a petrol engine.

22. What are the limitations of biotechnology ?

OR

Why did Mendel select pea plants for his experiment ?

23. The molecular formula for the first member of organic compounds that are in homologus series is CH_3OH. Predict the molecular formula of next two members of this group.

24. What is solar cell ? Write any two uses of solar cell.

25. Draw the diagram of the apparatus used in electrolysis. Label the following parts :

    i) Electrolyte

    ii) Cathode.

26. Suggest the measures to be followed to control the depletion of ozone layer.

27. Draw the diagram showing the expansion stroke of a steam engine. Label the following parts :

    i) Piston

    ii) Inlet valve.

28. Give scientific reason :

    i) Sodium metal is preserved under kerosene

    ii) Aluminium oxide cannot be reduced by coke.

OR

Explain the method of concentration of haematite ore.

29. List the advantages of making changes in genetic material of animals in animal breeding.

OR

Explain any two methods followed in conventional plant breeding.

30. SONAR placed in a ship is used to find out the depth of the sea at two different places. If the reflection of ultrasound waves are detected after 6 seconds in one place and after 4 seconds in another place, then find the ratio of the depth of the sea at these two places.

31. Define modern periodic law. How many periods and groups are there in modern periodic table ?

OR

Write any two advantages of modern periodic table.

32. Draw the diagram showing the structure of a dicot plant. Label the following parts :

i) Flower

ii) Root.

33. Observe the following table :

Element	*P*	*Q*	*R*
Atomic Number	13	14	15

Which elements do you choose from the table to prepare '*n*' type of semiconductors ? Give scientific reason for your choice.

34. Mention any four changes found, when Dryopithecus pre-human ancestors evolved into Zinjanthropus pre-humans.

35. List the major sources of noise pollution.

36. Diesel engine does not require spark plug. Why ?

37. Write the steps involved in paper manufacturing process.

38. What are the adaptations in birds to fly ?

39. Draw the diagram of single stage rocket and label payload.

40. Unsaturated oils have less shelf life. Why ? Explain the process of converting unsaturated oils into saturated fats. Mention the advantage of this process.

41. Draw the diagram showing the structure of HIV. Label the following parts :

    i) RNA

    ii) Fatty layer.

42. In the experiment of electromagnetic induction, explain how induced *e.m.f.* can be increased in the coil.

43. Observe the given chemical equations :

    i) $Zn + \boxed{X} \rightarrow ZnSO_4 + H_2 \uparrow$

    ii) $Zn + \boxed{X} \rightarrow ZnSO_4 + SO_2 + H_2O.$

    Write the molecular formula of the acid indicated as '*X*' in the above chemical reactions. What is the reason for the different products in the second reaction ?

44. A person is able to identify the words shown on the screen 3 m away from him, but he is unable to read letters from the book 30 cm away from him. Which type of eye defect is he suffering from ? What remedy do you suggest to overcome this defect ?

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

45. Draw the diagram of blast furnace used in the extraction of iron. Label the following :

i) Molten iron

ii) Slag.

46. Write any three differences between amphibians and reptiles.

OR

Write any three differences between vascular plants and non-vascular plants.

47. Draw the diagram of a nuclear power reactor. Label the following parts :

i) Reflector

ii) Heat exchanger.

48. Explain the process of manufacture of sugar from sugarcane.

OR

Explain the first step in the preparation of ethanol from molasses. Write the balanced chemical equations when sucrose is converted into ethanol.

49. a) Leaves of banana plant will tear easily by wind force but the midrib of the leaves do not tear. Why ?

b) The body of a person is showing low immunity against bacterial infection. In which tissue there is a problem and how this tissue protects our body ?

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

50. a) Explain the principle of a transformer. What is the relationship between voltage of primary and secondary coils and their number of turns in a transformer ?

b) Name the types of transformer used to transport electricity to distant places and to distribute electricity for domestic use.

OR

a) Write any two differences between A.C. dynamo and D.C. dynamo.

b) State Faraday's laws of electromagnetic induction.

51. a) Explain the properties of carbon due to which it forms more number of compounds.

b) Write the balanced chemical equation of the reaction that takes place in the preparation of methane by laboratory method.

52. Draw the diagram showing the internal structure of human ear. Label the following parts :

i) Auditory nerve

ii) Ear drum.