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SL. No. : Q

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 42]
Total No. of Questions : 42][ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 12
[Total No. of Printed Pages : 12**CCE RF
REVISED**ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E**Code No. : **83-E**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

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

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh)

ದಿನಾಂಕ : 02. 04. 2019]

[Date : 02. 04. 2019

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

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80]

[Max. Marks : 80

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.

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ಇಲ್ಲಿಂದ ಕತ್ತರಿಸಿ

TEAR HERE TO OPEN THE QUESTION PAPER

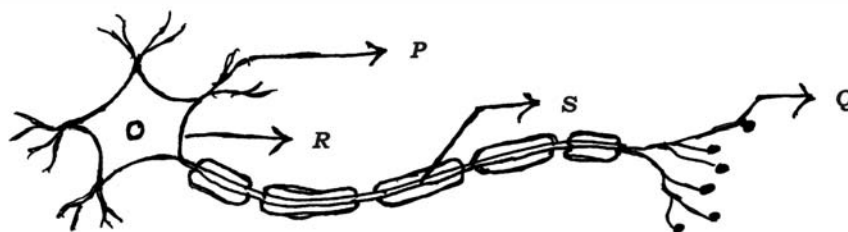
ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

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 × 1 = 10

- The change that occurs in the eye to see the distant objects clearly is
 - focal length of the eye lens decreases
 - curvature of the eye lens increases
 - focal length of the eye lens increases
 - ciliary muscles of the eye contract
- The functional groups present in propanol and propanal respectively are
 - OH and —CHO
 - OH and —COOH
 - CHO and —COOH
 - CHO and —CO
- The correct path of the movement of nerve impulses in the following diagram is



- $Q \rightarrow S \rightarrow R \rightarrow P$
- $P \rightarrow Q \rightarrow R \rightarrow S$
- $S \rightarrow R \rightarrow Q \rightarrow P$
- $P \rightarrow R \rightarrow S \rightarrow Q$

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4. The resistance of a conductor is 27Ω . If it is cut into three equal parts and connected in parallel, then its total resistance is
- (A) 6Ω (B) 3Ω
(C) 9Ω (D) 27Ω
5. The chemical equation that represents neutralization reaction among the following is
- (A) $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{HCl}$
(B) $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$
(C) $2\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$
(D) $\text{AgNO}_3 + \text{HCl} \rightarrow \text{AgCl} + \text{HNO}_3$
6. By constructing Khadin check-dams in level terrains,
- (A) underground water level decreases
(B) underground water level increases
(C) vegetation in the nearby areas are destroyed due to excess moisture
(D) underground water gets polluted
7. To obtain a diminished image of an object from a concave mirror, position of the object should be
- (F = principal focus, C = centre of curvature, P = pole)
- (A) between C and F (B) beyond C
(C) between P and F (D) at F

8. The electronic configuration of element X is 2, 8, 8, 1 and the electronic configuration of element Y is 2, 8, 7. Then the type of bond formed between these two elements is
- (A) covalent bond
- (B) hydrogen bond
- (C) metallic bond
- (D) ionic bond
9. Part of the flower that develops into fruit and part of the seed that develops into root respectively are
- (A) ovary and plumule
- (B) plumule and radicle
- (C) ovary and radicle
- (D) ovary and ovule
10. A pure dominant pea plant producing round — yellow seeds is crossed with pure recessive pea plant producing wrinkled — green seeds. The number of plants bearing round — green seeds in the F_1 generation of Mendel's experiment is
- (A) 0
- (B) 1
- (C) 3
- (D) 9

11. The functions of hormones are given in **Column-A** and the names of the hormones are given in **Column-B**. Match them and write the answer along with its letters :

4 × 1 = 4

Column - A

Column - B

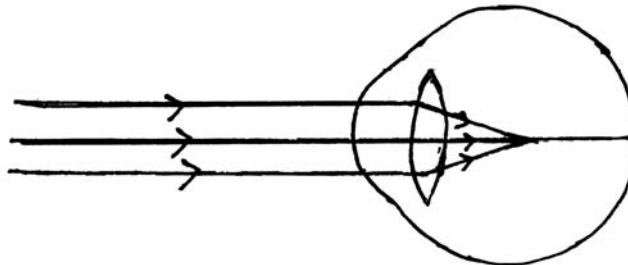
- | | |
|--|--------------------|
| (A) Prepares the body to deal with the situation | (i) Growth hormone |
| (B) Regulates metabolism for body growth | (ii) Testosterone |
| (C) Regulates blood sugar levels | (iii) Adrenaline |
| (D) Regulates the growth and development of the body | (iv) Progesterone |
| | (v) Insulin |
| | (vi) Thyroxine |
| | (vii) Oestrogen |

Answer the following questions.

7 × 1 = 7

12. Name the acid present in the stinging hair of nettle leaves.
13. What are fossils ?
14. Convex mirror is commonly used as rear-view mirror in vehicles. Why ?
15. What is roasting in metallurgy ?

16. Observe the given figure. Name the eye defect indicated in the figure and also mention the lens used to correct this defect.



17. What is Tyndall effect ?
18. Under what condition lactic acid is produced in the muscle cells ?

Answer the following questions.

$16 \times 2 = 32$

19. Draw the diagram of an electric circuit in which the resistors R_1 , R_2 and R_3 are connected in parallel including an ammeter and a voltmeter and mark the direction of the current.
20. Name the brown fumes liberated when lead nitrate is heated. Write the balanced chemical equation for this reaction.
21. Explain the process of translocation of food materials in plants.

OR

Explain the process of digestion in the small intestine of man.

22. Draw the diagram of a simple electric motor. Label the following parts :
- (i) Split rings (ii) Brushes.
23. What are structural isomers ? Name the first member of alkanes that shows structural isomerism.

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24. Draw the diagram showing the longitudinal section of a flower.

Label the following parts :

- (i) Style (ii) Anther.

25. Draw the diagram of arrangement of apparatus used to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning.

Label the following parts.

- (i) Soap solution
(ii) Delivery tube.

26. It is advantageous to connect electric devices in parallel instead of connecting them in series. Why ?

OR

According to Joule's law of heating, mention the factors on which heat produced in a resistor depends. According to this law write the formula used to calculate the heat produced.

27. List the disadvantages of using fossil fuels.

OR

List the advantages of 'reduce' and 'reuse' to save environment.

28. The focal length of a concave lens is 30 cm. At what distance should the object be placed from the lens so that it forms an image at 20 cm from the lens ?

29. Draw the diagram of the apparatus used in the electrolysis of water. Label the following parts.

- (i) Graphite rod
(ii) Cathode.

30. Growth of thread like structures along with the gradual spoilage of tomato can be observed when a cut tomato is kept aside for four days. Interpret the causes for this change.
31. An electric refrigerator rated 400 W is used for 8 hours a day. An electric iron box rated 750 W is used for 2 hours a day. Calculate the cost of using these appliances for 30 days, if the cost of 1 kWh is Rs. 3/-.
32. There is no change in the colour of red litmus and blue litmus paper when introduced into an aqueous solution of sodium chloride. After passing direct current through the same solution, red litmus changes to blue colour. Which product is responsible for this change ? Mention any two uses of this product.
33. A food chain in a polluted aquatic ecosystem is given. Observe it and answer the following questions.

Fresh water → Algae → Fishes → Birds.

- (i) Which organisms are disturbed more due to biomagnification ? Why ?
- (ii) This ecosystem will be destroyed gradually due to biomagnification. Why ?

OR

A student places a piece of cucumber, a glass piece, a banana peel and a plastic pen in a pit and closes it. What changes can be observed in these materials after a month ? Give scientific reason for these changes.

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34. What is dispersion of light ? Mention the colour that bends the least and the colour that bends the most when light undergoes dispersion through a prism.

OR

Mention any *four* phenomena that can be observed due to atmospheric refraction of light on the earth.

Answer the following questions.

5 × 3 = 15

35. Draw the ray diagrams for the image formation in a convex lens when an object is placed

(i) at focus F_1

(ii) beyond $2F_1$.

36. (i) Write the differences between saturated and unsaturated hydrocarbons.
(ii) Write the molecular formula and structural formula of an alkene having five carbon atoms.

OR

(i) Carbon atom does not form C^{4-} anion and C^{4+} cation. Why ?

(ii) How can ethanol be converted into ethanoic acid ?

37. Draw the diagram showing the sectional view of the human heart. Label the following parts.

(i) Aorta

(ii) Chamber of the heart that receives deoxygenated blood.

38. (i) Name the major constituent of biogas. Write the properties of biogas which make it a good fuel.
- (ii) Name the two devices that work using heat energy of the sun.

OR

- (i) Write the advantages of solar cells.
- (ii) Write any two hazards of nuclear power generation.
39. Observe the given table and answer the following question :

<i>Elements</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
<i>Atomic number</i>	11	4	2	7	19

Identify the two elements that belong to the same period and the two elements that belong to the same group. Give reason for your conclusion.

Answer the following questions.

3 × 4 = 12

40. (i) How does overload and short-circuit occur in an electric circuit ? Explain. What is the function of fuse during this situation ?
- (ii) Mention two properties of magnetic field lines.
41. Give reason :
- (i) Ionic compounds in solid state do not conduct electricity, whereas in molten state are good conductors of electricity.
- (ii) Silver articles when exposed to air gradually turn blackish.
- (iii) Chemical reaction does not take place when copper is added to iron sulphate solution.

OR

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Give reason :

- (i) “Alloys of iron are more useful when compared to pure iron.”
 - (ii) Copper loses its brown layer gradually when exposed to air.
 - (iii) Aluminium oxide is called amphoteric oxide.
42. (i) Write the differences between homologous organs and analogous organs.
- (ii) Write the differences between the sex chromosomes of man and sex chromosomes of woman.
- (iii) Sex of a child is determined by the father. How ?



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