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SL. No. : F

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 42]
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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 : 24. 06. 2019]

[Date : 24. 06. 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.

 (24)511-RR(A)

[Turn over

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

1. The number of groups and periods in the modern periodic table respectively, are
 - (A) 7 and 9
 - (B) 18 and 7
 - (C) 7 and 18
 - (D) 9 and 7.

2. The group of organisms that reproduce through fission only is
 - (A) Amoeba, Hydra, Spyrogyra
 - (B) Leishmania, Amoeba, Yeast
 - (C) Amoeba, Plasmodium, Planaria
 - (D) Plasmodium, Amoeba, Leishmania.

3. The correct statement related to digestion in small intestine is
 - (A) acidic food is made alkaline by bile juice
 - (B) food is made acidic by hydrochloric acid
 - (C) starch is digested due to the action of amylase
 - (D) protein is digested due to the action of pepsin.

4. Which of the following is ecofriendly ?
 - (A) Thermal power plant
 - (B) Hydropower plant
 - (C) Biogas plant
 - (D) Nuclear power station.



5. Observe the food chain given below :

Grass → Grass hopper → Frog → Snake → Eagle.

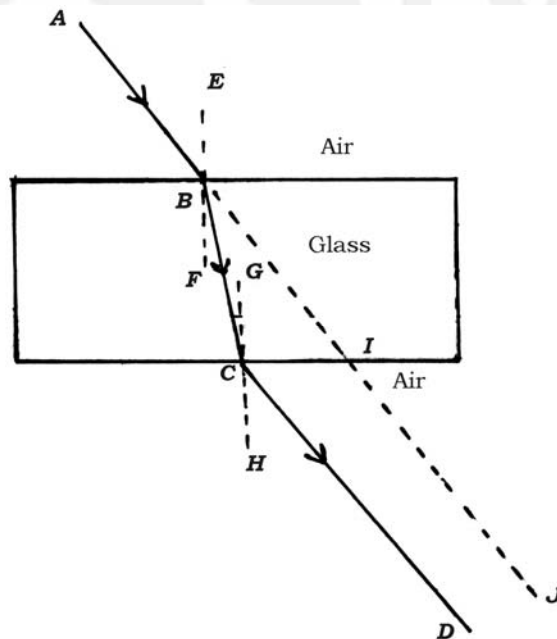
If the energy available at first trophic level is 5000 J, then the amount of energy available for snake is

- (A) 500 J (B) 5 J
(C) 0.5 J (D) 50 J.

6. The possible chemical reaction among the following is

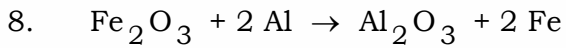
- (A) $\text{FeSO}_4 + \text{Pb} \rightarrow \text{PbSO}_4 + \text{Fe}$
(B) $\text{ZnSO}_4 + \text{Fe} \rightarrow \text{FeSO}_4 + \text{Zn}$
(C) $2 \text{AgNO}_3 + \text{Cu} \rightarrow \text{Cu}(\text{NO}_3)_2 + 2 \text{Ag}$
(D) $\text{PbCl}_2 + \text{Cu} \rightarrow \text{CuCl}_2 + \text{Pb}$.

7. Identify the emergent ray in the given figure.



- (A) CD (B) BC
(C) AB (D) IJ.





The type of above chemical reaction is

- (A) combination reaction
(B) double displacement reaction
(C) decomposition reaction
(D) displacement reaction.
9. A piece of metallic wire of resistance R is cut into 3 equal parts. These parts are then connected in parallel. If the total resistance of this combination is R' , then the value of $R : R'$ is
- (A) 1 : 3 (B) 9 : 1
(C) 1 : 9 (D) 3 : 1.
10. Observe the table which shows contrast forms of pea plants :

<i>Colour of the seed</i>	<i>Position of the flower</i>
Green (G)	Axial (A)
Yellow (g)	Terminal (a)

The genetic makeup with green seed and terminal flowers is indicated as

- (A) gGAa
(B) GgAa
(C) GgAA
(D) Ggaa.



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

4 × 1 = 4

Column - A

Column - B

- | | |
|------------------------|---|
| (A) Commutator | (i) detects the presence of electric current in a circuit |
| (B) Fuse | (ii) converts mechanical energy into electrical energy |
| (C) Galvanometer | (iii) measures the potential difference |
| (D) Electric generator | (iv) shows the direction of the motion of the conductor |
| | (v) protects the electrical appliances |
| | (vi) reverses the direction of current |
| | (vii) converts electrical energy into mechanical energy |

Answer the following questions.

7 × 1 = 7

12. What is the centre of curvature of a spherical mirror ?
13. Name the products of anaerobic respiration.
14. What is a covalent bond ?
15. What is the function of pupil of the human eye ?
16. Micro-organisms like bacteria are called decomposers. Why ?
17. Name the first member of alkynes and write its molecular formula.
18. Name the factors responsible for speciation.



Answer the following questions.

$16 \times 2 = 32$

19. A bulb is marked 220 V and 40 W. Calculate the current flowing through the bulb and its resistance.
20. Name the gas liberated when an acid reacts with metallic carbonate. Write the chemical equation of the reaction when this gas is passed through lime water. What is the colour of the precipitate obtained in this reaction ?

OR

Give scientific reason :

- (i) While diluting an acid, the acid should be added to water.
- (ii) Plaster of Paris should be stored in a moisture-proof container.
21. Draw the diagram showing opened stomata. Label the following parts :
- (i) Guard cells
- (ii) Stomatal pore.
22. (i) What is Tyndall effect ?
- (ii) Name the colour that bends the least and the colour that bends the most when white light is dispersed by a prism.

OR

- (i) What is meant by the power of accommodation of the eye ?
- (ii) What are the far point and near point of the human eye with normal vision ?



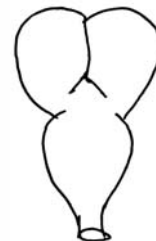
23. Diagrams given below represent hearts of three different animals. Observe it and answer the question.



1



2



3

Among these, which heart is helpful to the animals that require more energy ?
Why ?

OR

The approximate lengths of small intestine of animals x and y are given in the table. Observe it and answer the question.

<i>Animals</i>	<i>Approximate length of small intestine</i>
x	20 to 40 feet
y	5 to 8 feet

Identify the herbivorous and carnivorous animals in the table and support your decision with scientific reasons.

24. (i) Write the balanced chemical equation for the reaction taking place when aluminium reacts with dilute hydrochloric acid.
- (ii) Hydrogen gas is not liberated when a metal reacts with concentrated nitric acid. Give reason.

OR

Show the formation of NaCl and $MgCl_2$ with the help of electron dot structure.



25. Draw the diagram of a simple electric motor. Label the following parts :

- (i) Brushes
- (ii) Battery.

26. Explain substitution reaction in hydrocarbons with an example.

OR

Explain the mechanism of cleaning action of soaps.

27. Draw the diagram showing the structure of neuron. Label the following parts :

- (i) The part which has prominent nucleus
- (ii) Dendrite.

28. List the characteristics of a good source of energy.

29. In sustaining reproductive fertility of a person,

- (i) position of the testis in the body
- (ii) secretion of the testosterone
- (iii) secretion of the prostate gland

are supplementary to each other. Explain scientifically.

30. The general formula of two specific groups of saturated and unsaturated hydrocarbons is $C_n H_{2n}$. Write the structures of the member of each group when $n = 3$.

31. Draw the ray diagram to show the formation of image by a convex lens when the object is at $2F_1$. [F_1 : Principal focus]



32. The position of elements *A*, *B*, *C*, *D* in the modern periodic table is given in the following table. Answer the following questions by observing the table :

	<i>Group 1</i>	<i>Group 2</i>
<i>Period 3</i>	<i>A</i>	<i>B</i>
<i>Period 4</i>	<i>C</i>	<i>D</i>

- (i) Which element has the highest atomic size ? Why ?
- (ii) Which element has the least metallic property ? Why ?
33. Draw the diagram showing the germination of pollen on stigma and label the part on which pollination takes place.
34. What is hypermetropia or far-sightedness ? Name the type of lens used to correct it.

Answer the following questions.

5 × 3 = 15

35. Draw the diagram of the apparatus used in electrolysis of water. Label the following parts :
- (i) Cathode
- (ii) Graphite rod.
36. Imagine the following situations :
- (i) Clapping at the end of a programme
- (ii) Fluctuating blood pressure in the body.


How these situations are functionally different ? Give reason.

OR

“We withdraw our leg when stepped on thorn unknowingly.”

- (i) Trace the sequences of events which occur in this action.
- (ii) Which part of human nervous system controls this action ?



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[Turn over

37. A concave lens has focal length 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 ? Also, find the magnification produced by the lens.
38. Draw the diagram of the arrangement of apparatus to show the action of steam on a metal. Label the following parts :
- (i) Metal sample
 - (ii) Delivery tube.
39. (i) How does combustion of fossil fuels cause greenhouse effect ?
- (ii) List the reasons for failure in sustaining ground water.

OR

- (i) Reuse of plastic products is better than recycle method. Why ?
- (ii) "Local people are stakeholders of forest resources." Explain.

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

40. (i) Define electric potential difference. How is ammeter connected in an electric circuit ?
- (ii) Explain the application of heating effect of electric current in an electric bulb and the fuse used in an electric circuit.

OR

- (i) State Ohm's law
- (ii) Explain the factors on which the resistance of a conductor depend.



41. (i) What is neutralisation reaction ?
- (ii) Name the products of chlor-alkali process. Write one use of each.
42. (i) How does relative method help to determine the age of fossils ?
- (ii) “Experiences of an individual during its life time cannot direct evolution.”
- Why ?
- (iii) “Chromosomes inherited from the father determines the sex of a child.”

Explain.



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