

- A. All questions are compulsory.
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-
- B. The **Question Paper** comprises of **Two** Sections, **A and B**. You are to attempt both the sections.
- C. All questions of **Section-A** and **Section-B** are to be attempted separately.
- D. There is an internal choice in **three questions** of **three marks** each and **two question** of **five marks**.
- E. Question number **1 to 2** in **Section-A** are **one mark** question. These are to be answered in **one word** or in **one sentence**.
- F. Question numbers **3 to 5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
- G. Question numbers **6 to 15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
- H. Question numbers **16 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- I. 9. Question numbers **22 to 27** in **Section-B** are questions based on **practical** skills and are **two marks** questions.

Section A

1

What are the three major regions of human brain?

[1]

2

Is an offspring exactly similar to its parent? Why or why not?

[1]

3

An element M is in the third group of the periodic table. Write the formulae of its chloride and oxide.

[2]

4

State the important properties of images formed by plane mirrors.

[2]

5

Explain how biomass is used as a fuel?

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[2]

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6

What happens when silver chloride is placed in sunlight in a china dish. Write the balanced chemical equation.

[3]

7

How are metal carbonates formed? Give an example along with the chemical equation of the reaction involved.

[3]

OR

Name the gas evolved when a metal carbonate or metal hydrogen carbonate reacts with acids. Explain the chemical reaction.

[3]

8

What is HIV-AIDS? How is it spread?

[3]

9

Explain the structure of stomata and function of guard cells.

[3]

OR

What are the functions of pancreas in the human body?

[3]

10

How many groups and periods are there in the modern periodic table? How do the atomic size and metallic character of elements vary as we move:

(a) Down a group and

(b) From left to right in a period

[3]

each.

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[3]

12

An object of size 5 cm is placed at a distance of 25 cm from the pole of a concave mirror of radius of curvature 30 cm. Calculate the distance and size of the image so formed. What will be the nature of the image?

[3]

13

Three resistors of magnitudes $12\ \Omega$, $15\ \Omega$ and $20\ \Omega$ are connected in (i) series and (ii) parallel. Calculate the combined resistance in each case.

[3]

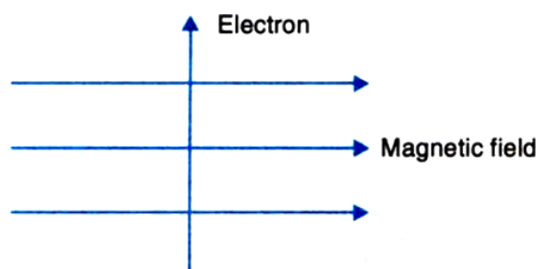
14

Briefly explain Stanley L. Miller and Harold C. Urey's experiment.

[3]

15

An electron enters a uniform magnetic field at right angles to it as shown in the figure. In which direction will this electron move? State the principle applied by you in finding the direction of motion of the electron.



[3]

OR

Distinguish between the terms 'overloading' and 'short-circuiting' as used in domestic circuits.

[3]

16

(a) Show the formation of Na_2O by the transfer of electrons between the combining atoms.

(b) Why are ionic compounds usually hard?

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(c) why ionic compounds in the solid state do not conduct electricity and they do so when in molten state?

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[5]

17

(a) Define the term 'isomers'.

(b) Draw two possible isomers of the compound with molecular formula C_3H_6O and write their names.

(c) Give the electron dot structures of the above two compounds.

[5]

OR

Describe the combustion reactions of carbon and its compounds.

[2]

OR

Light a bunsen burner. When do you get

(i) yellow, sooty flame

(ii) blue flame

[3]

18

Draw the structure of a neuron and explain its function.

[5]

19

A student finds the writing on the blackboard as blurred and unclear when sitting on the last desk in the classroom. He however, sees it clearly when sitting on the front desk at an approximate distance of 2 m from the blackboard.

Draw ray diagrams to illustrate the formation of image of the blackboard writing by his eye-lens when he is seated at the (i) last desk (ii) front desk.

Name the kind of lens that would help him to see clearly even when he is seated at the last desk.

Draw a ray diagram to illustrate how this lens helps him to see clearly.

[5]

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21a

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[3]

21b

Why are forest considered biodiversity hot spots? List two ways in which an individual can contribute effectively to the management of forests and wildlife.

[3]

Section B

22

The color of an aqueous solution of zinc sulphate as observed in the laboratory is:

- A. Green
- B. Yellow
- C. Blue
- D. Blue

[22]

Section A

23

A student prepared 20% sodium hydroxide solution in a beaker containing water. The observations noted by him are given below.

- I. Sodium hydroxide is in the form of pellets.
- II. It dissolves in water readily.
- III. The beaker appears cold when touched from outside.
- IV. The red litmus paper turns blue when dipped into the solution.

The correct observations are:

- A. I, II, and III
- B. II, III and IV
- C. III, IV and I
- D. III, IV and I

[2]

Section B

24

Following are the steps involved in the experiment 'to determine the percentage of water absorbed by
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I. Soak the raisins in fresh water.

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II. Weigh dry raisins.

III. Weigh soaked raisins.

IV. Wipe out soaked raisins.

The correct sequence of steps is

A. I, II, III, IV

B. II, I, IV, III

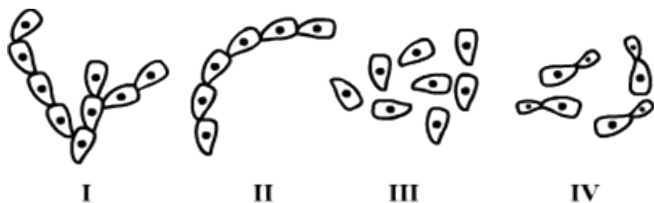
C. II, I, III, IV

D. II, I, III, IV

[2]

25

Identify the figures showing the process of budding in yeast.



A. I, II AND III

B. II, III AND IV

C. I, II AND IV

D. I, II AND IV

[2]

26

Mohan obtained a sharp inverted image of a distant tree on the screen placed behind the lens. He then moved the screen and tried to look through the lens in the direction of the object. He would see:

A. a blurred image on the wall of the laboratory.

B. an erect image of the tree on the lens.

C. no image as the screen has been removed

D. no image as the screen has been removed

[2]

27

One ampere is equal to

A. 1 Coulomb/sec

B. $1\text{ C} \times 1\text{ s}$

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