

Total No. of Printed Pages : 8

GENERAL SCIENCE

(English Version)

5145470

Question Booklet Sl. No.

Max. Marks : 100

Time : 3 Hours 15 Minutes

Instructions :



- 1) This paper contains of Part – A and Part – B.
- 2) Part – A contains questions from Physical Science and Part – B contains questions from Biological Science.
- 3) Part – A (Physical Science) and Part – B (Biological Science) answers should be written in **separate** booklets.
- 4) Part – A and Part – B contains 4 Sections each.
- 5) There are 33 questions in the paper.
- 6) There is an internal choice in Section IV of Part – A and Part – B.
- 7) Write **all** the answers **visibly** and **legibly**.
- 8) 15 minutes are given for reading the question paper.



PART – A (Physical Science)

SECTION – I

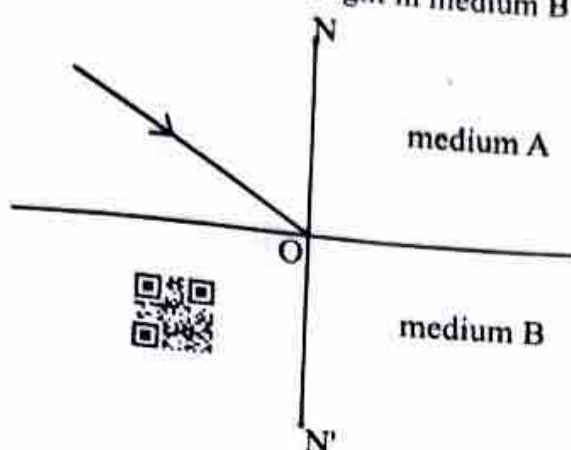
(6×1=6)


- Note : 1) Answer **all** the questions.
2) **Each** question carries 1 mark.

1. Ask a question about temperature.



2. A light ray is entering from rarer medium A to denser medium B as shown in the figure. Then complete the path of light in medium B and draw the whole diagram in your answer sheet.



3. Electronic configuration of an element is $1s^2 2s^2 2p^4$, then which period it belongs to ?
4. Electronic configuration of an element 'X' is 2, 8. Then write number of valency electrons.
5. Name the device which converts electrical energy into Mechanical energy. 
6. Write any one daily life application of thermite process.

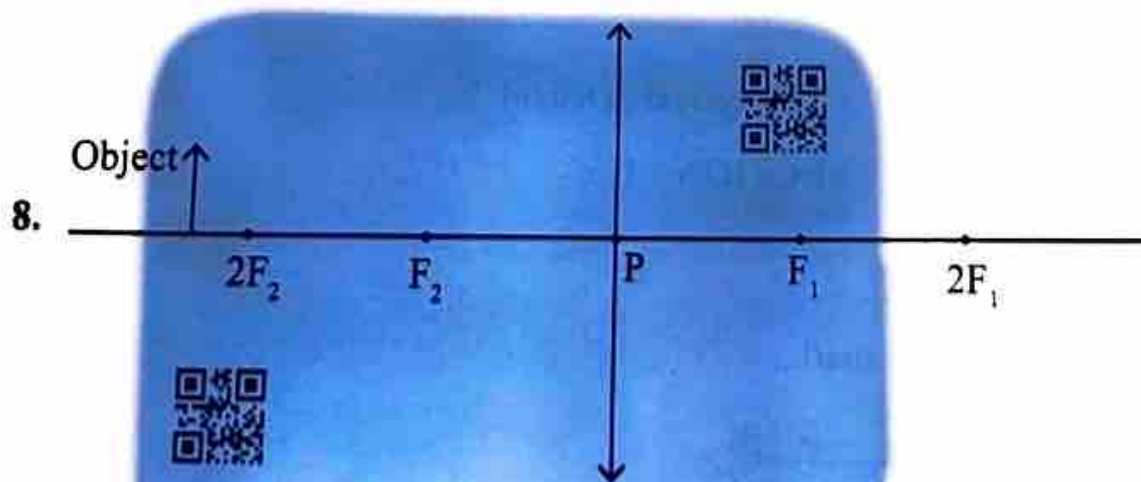


SECTION - II

(4×2=8)

- Note :** 1) Answer all the questions.
2) Each question carries 2 marks.

7. What is lens formula ? Explain terms in it.



Write the characteristics of the image formed by the object in the above diagram.

9. Predict which has more atomic size in between Na and Na⁺, why?

10. Ask any two questions to understand about "magnetic field lines".



SECTION - III

(3×4=12)

Note : 1) Answer all the questions.



2) Each question carries 4 marks.

11. What is the reason behind the shining of diamonds and how do you appreciate it?

12. Draw the shapes of S and P orbitals.



13. Some ores and their formulae are given in the following table.

Ore	Formula
Bauxite	$Al_2O_3 \cdot 2H_2O$
Magnesite	$MgCO_3$
Epsom salt	$MgSO_4 \cdot 7H_2O$
Haematite	Fe_2O_3
Galena	PbS
Gypsum	$CaSO_4 \cdot 2H_2O$



Answer the following questions using above table.

a) Galena is an ore of _____ metal.



b) Write an ore of Iron.



c) Which is carbonate ore from the above table?

d) How many water molecules are present in epsom salt?

SECTION - IV

- Note : 1) Answer all the questions. 
- 2) Each question carries 8 marks. 
- 3) Each question has internal choice.


14. Write any four differences between evaporation and boiling.

OR

Define the eye defect 'Myopia' and explain the process of correction.

15. Explain the formation of 'N₂' molecule.

OR

Explain the cleansing action of soap. 

16. State Ohm's law. Suggest an experiment to verify it and explain the procedure.

OR


What is water of crystallization of salts ? Suggest an activity to explain it.



PART - B (Biological Science)

SECTION - I

(6×1)

- Note : 1) Answer all the questions.
- 2) Each question carries 1 mark. 

17. Which vitamin is responsible for clotting of blood ?

18. Nostrils ↔ Nasal Cavity ↔ Pharynx ↔ ↔ Trachea ↔ Bronchus.



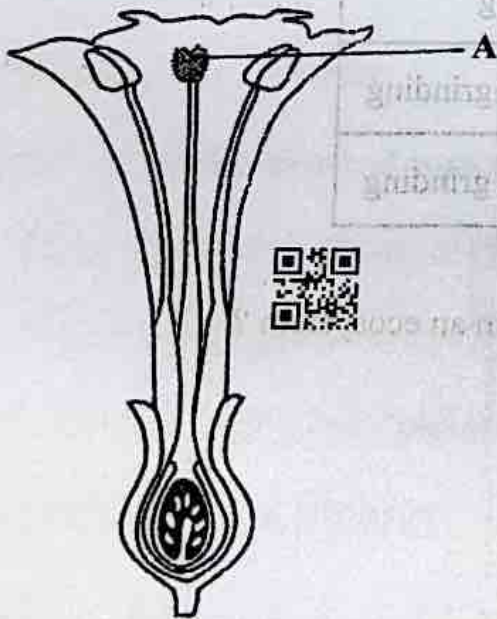
19. Observe the given table and answer the question.

Name of the animal	Weight of the body	Weight of the heart	No. of beats/min.
Blue whale	1,50,000 Kg	750 Kg	7
Elephant	3000 Kg	12-21 Kg	46
Man	60-70 Kg	300 gm	72
Coaltit (Bird)	8 gm	0.15 gm	1200

What is the relation between weight of the heart and rate of heart beat ?

20. What will happen if Insulin production is stopped from pancreas ?

21. Name the Part A in the given diagram.



22. Write one suggestion to reduce the effects of Global Warming.

SECTION - II

(4×2=8)

- Note : 1) Answer **all** the questions.
2) **Each** question carries 2 marks.



23. If you have a chance to meet a nephrologist what questions will you ask to know more about kidney failure ?
24. What is the main function of afferent neurons or sensory neurons ?
25. Fill in the empty boxes (a) and (b).

Type of teeth	Number	Function
1. ? (a)	8	Biting
2. Canines	? (b)	Tearing
3. Premolars	8	Chewing and grinding
4. Molars	12	Chewing and grinding

26. What will happen if the primary consumers decrease in an ecosystem ?



SECTION - III

(5×4=20)

- Note : 1) Answer **all** the questions.
2) **Each** question carries 4 marks.



27. Draw any food chain with four levels. What are producers and decomposers in a food chain ?



28. ALKALOID

19F. & 20E

	PLANT	PART	USES
Quinine	<i>Cinchona officinalis</i> (Cinchona)	Bark	Antimalarial drug
Nicotine	<i>Nicotiana tabacum</i> (Tobacco)	Leaves	Insecticide
Morphine, Cocaine	<i>Papaver somniferum</i> (Opium)	Fruit	Sedative, Pain killer
Reserpine	<i>Rauwolfia serpentina</i> (Snake root)	Root, bark	Medicine for Snake bite
Caffeine	<i>Coffea arabica</i> (Coffee Plant)	Seed	Central nervous system Stimulant
Nimbin	<i>Azadirachta indica</i> (neem)	Seeds, Barks, Leaves	Antiseptic
Scopolamine	<i>Datura stramonium</i>	Fruit, flower	Sedative
Pyrethroids	Tridax	Flower	Insecticides

Observe the above table and answer the following questions.

- 1) Which alkaloid is used as medicine for snake bite ?
- 2) What is the scientific name of Neem plant ?
- 3) From which part of the Cinchona Plant Quinine is Obtained ?
- 4) What is the use of Morphine ?

29. Write any two phyto hormones and their functions.

30. Draw the diagram of Human sperm cell and label the parts.

31. Write few slogans on conservation of Trees.

SECTION - IV

Note : 1) Answer all the questions.

2) Each question carries 8 marks.

3) Each question has internal choice.

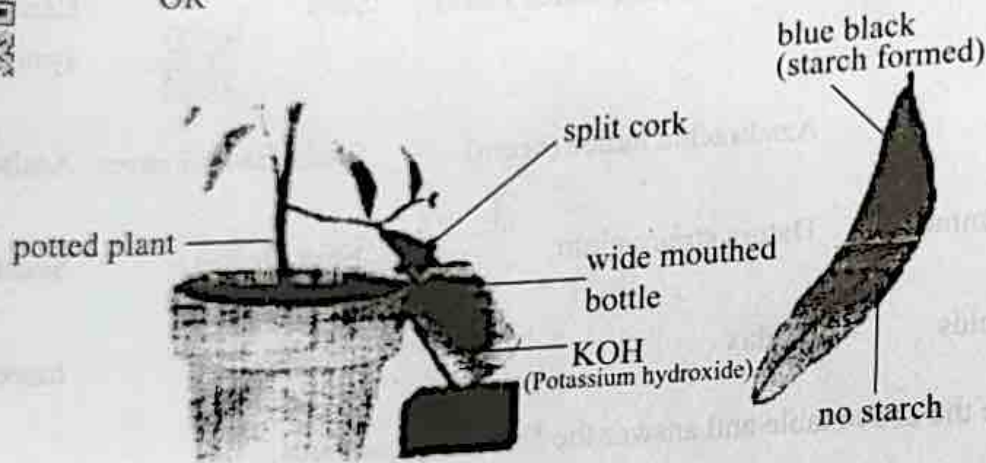
32. Write the differences between Arteries and Veins.

OR

Explain the process of sex determination in human beings.

33. How do you prove that heat is liberated during respiration ?

OR



Observe the above diagram and answer the following questions.

1) What is the aim of this experiment ?

2) Which solution is taken in the bottle ?

3) After Iodine test, the part of the leaf inside the bottle didn't turn into blue black colour. Why ?

4) Where do we keep the plant before experiment ?

