

**2018
SCIENCE**

Total marks : 80

Time : 3 hours

General instructions:

- i) Approximately 15 minutes is allotted to read the question paper and revise the answers.
- ii) The question paper consists of 26 questions. All questions are compulsory.
- iii) Internal choice has been provided in some questions.
- iv) Marks allocated to every question are indicated against it.

N.B: Check that all pages of the question paper is complete as indicated on the top left side.

1. Choose the correct answer from the given alternatives:

- | | |
|------------------------------------------------------------------------------------|------------------------|
| (a) Which of the following is a strong acid? | 1 |
| (i) CH_3COOH | (ii) HNO_3 |
| (iii) NaOH | (iv) Ca(OH)_2 |
| (b) Baking powder is a mixture of baking soda and | 1 |
| (i) hydrochloric acid | (ii) carbonic acid |
| (iii) tartaric acid | (iv) sulphuric acid |
| (c) The process of slow and uniform cooling is known as | 1 |
| (i) corrosion | (ii) rusting |
| (iii) reduction | (iv) annealing |
| (d) Which of the following metal is the most reactive? | 1 |
| (i) Na | (ii) Al |
| (iii) Fe | (iv) Cu |
| (e) 40% aqueous solution of methanol is known as | 1 |
| (i) ester | (ii) bakelite |
| (iii) vinegar | (iv) formalin |
| (f) The least distance of distinct vision for a normal human eye is | 1 |
| (i) 20cm | (ii) 20m |
| (iii) 25cm | (iv) 25m |
| (g) Which of the following is the main component of petroleum gas? | 1 |
| (i) Ethane | (ii) Butane |
| (iii) Propane | (iv) Methanol |
| (h) How many pairs of spinal nerves, emerged from the spinal cord of human beings? | 1 |
| (i) 18 | (ii) 21 |
| (iii) 26 | (iv) 31 |

- (i) The inheritance or transmission of characters from one generation to another is called 1
(i) variation (ii) genetics
(iii) biology (iv) heredity
- (j) Which of the following is NOT a green house gas? 1
(i) CO₂ (ii) CH₄
(iii) O₂ (iv) N₂O

Answer the following questions in one word or one sentence:

2. What is a catalyst? 1
3. What are alloy steels? 1
4. What is meant by the dual nature of light? 1
5. Give the full form of ATP. 1
6. Define homologous organs. 1

Answer the following questions in about 20-30 words:

7. 'All ores are minerals but all minerals are not ores'. Justify. 2
8. What are alcohols? Give the chemical formula of any one alcohol. 1+1=2
9. State any two conditions required for combustion. 2×1=2
10. Mention two adverse effects of hunting. 2×1=2
11. What are radioactive waste materials? Name one source from where it is produced. 1+1=2

Answer the following questions in about 40-60 words:

12. a. Define a pH scale. Write its two uses. 1+2=3
- Or**
- b. Define exothermic reactions. Give any two examples.
13. Explain any three methods to prevent corrosion of metals. 3×1=3
14. Define a polymer. Explain the two types of polymers. 1×2=3
15. A concave mirror produces three times an enlarged image of an object placed at 10cm in front of it. Calculate the radius of curvature of the mirror. 3

16. a. An electric heater is used on a 220V supply and takes a current of 5 amperes. What is its power and what is the cost of using the heater for one hour, if 1kWh costs 50 paisa?

Or

3

- b. A 100 watt electric bulb is lighted for two hours daily and four 40 watt bulbs are lighted for 4 hours daily. Calculate the energy consumed in (kWh) in 30 days.

17. Explain the working of a solar water heater with the help of a labelled diagram. **1+2=3**

18. a. Explain any three modes of respiration in animals.

Or

3×1=3

- b. Explain the three different types of heterotrophic nutrition.

19. Label the indicated parts in the given figure I-

6×1/2=3

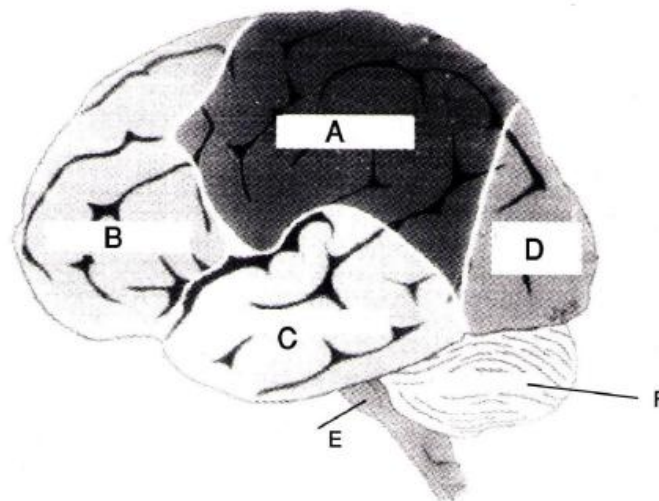


Fig. I

20. Write any three needs for water harvesting.

3×1=3

21. a. Explain any three main impacts of waste accumulation.

Or

3×1=3

- b. Explain with three points how recycling of waste materials help in maintaining ecological balance.

Answer the following questions in about 70-100 words:

22. **a.** Explain the process of extraction of iron from Haematite with the help of a labelled diagram.

Or **3+2=5**

b. Explain the laboratory preparation of hydrogen gas with the help of a labelled diagram.

23. **a.** Explain the refraction of light through a rectangular glass slab with the help of a labelled diagram.

Or **3+2=5**

b. Explain the dispersion of white light by a glass prism with a labelled diagram.

24. Explain overloading, short-circuiting and an electric fuse. How does an electric fuse work in a domestic electric circuit? **3+2=5**

25. **a.** What is blood? Explain the composition of blood.

Or **1+4×1=5**

b. Define photosynthesis. Discuss any four factors affecting photosynthesis.

26. **a.** Describe the structure of a typical flower. What are the essential organs of a flower? **4+1=5**

Or

b. What is reflex action? Explain the reflex arc in human beings. **(1+4=5)**
