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) CO_2 (ii) CH_4
(iii) O_2 (iv) N_2O

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.

Or **1+2=3**

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- **6×½=3**

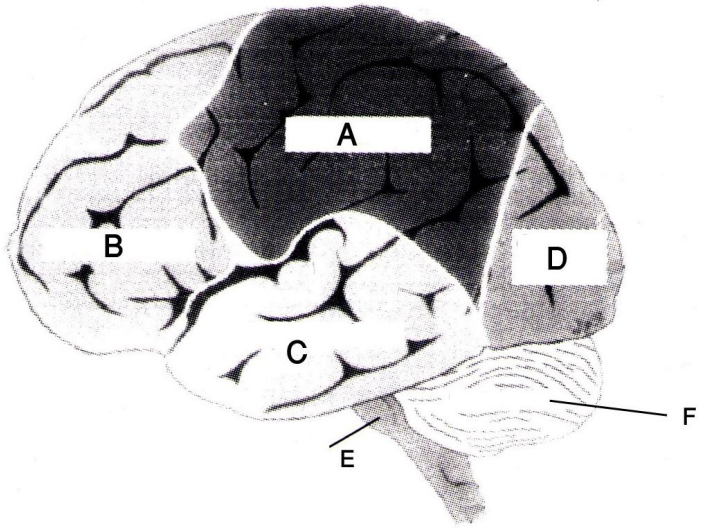

Fig. I

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)

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