

**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)  $\text{CH}_3\text{COOH}$  (ii)  $\text{HNO}_3$   
(iii)  $\text{NaOH}$  (iv)  $\text{Ca(OH)}_2$
- (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<sub>2</sub> (ii) CH<sub>4</sub>  
(iii) O<sub>2</sub> (iv) N<sub>2</sub>O

**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.

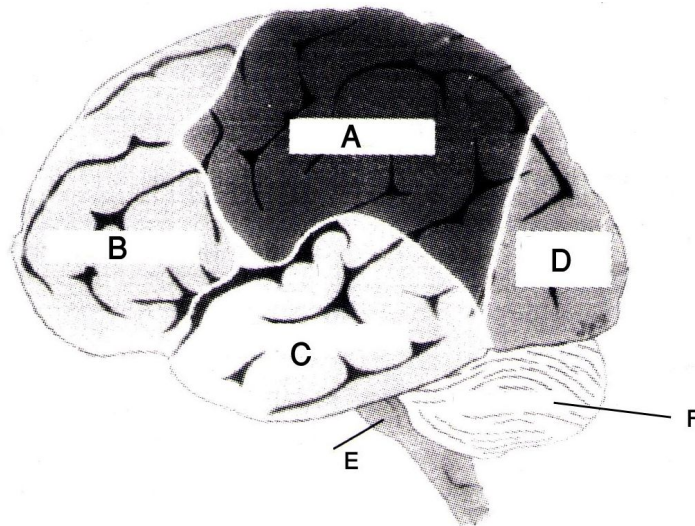
17. Explain the working of a solar water heater with the help of a labelled diagram. **1+2=3**

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- **6×½=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)**

\*\*\*\*\*