

2020
SCIENCE (OC)

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 an example of a fast reaction? **1**
(i) Burning of hydrogen in air (ii) Rusting of iron in moist air
(iii) Setting of cement (iv) Fermentation
- (b) The chemical formula of bleaching powder is **1**
(i) Na_2CO_3 (ii) NaHCO_3
(iii) CaOCl_2 (iv) CaSO_4
- (c) The most stable form of sulphur is **1**
(i) monoclinic sulphur (ii) plastic sulphur
(iii) rhombic sulphur (iv) colloidal sulphur
- (d) Formalin is an aqueous solution of **1**
(i) methanol (ii) methanal
(iii) propanol (iv) ethanol
- (e) The human eye lens is **1**
(i) convex (ii) concave
(iii) cylindrical (iv) plane
- (f) A solar water heater cannot be used to get hot water on a **1**
(i) sunny day (ii) windy day
(iii) hot day (iv) cloudy day
- (g) The process involving inspiration and expiration is called **1**
(i) digestion (ii) breathing
(iii) assimilation (iv) egestion
- (h) Auxin inhibits the growth of **1**
(i) apical buds
(ii) lateral axillary buds
(iii) parthenocarpic development of fruits
(iv) roots of cuttings

- (i) This involves cutting trees for sale as timber or pulp. 1
(i) Hunting (ii) Fishing
(iii) Logging (iv) Poaching
- (j) Global warming is concerned with the 1
(i) increase of carbon dioxide (ii) decrease of carbon dioxide
(iii) increase of oxygen (iv) decrease of oxygen

Answer the following questions in one word or one sentence:

2. Give the common name of calcium sulphate hemihydrate. 1
3. Name the mirror used by doctors to examine nose and throat. 1
4. What is blood transfusion? 1
5. What is reflex action? 1
6. Define hunting. 1

Answer the following questions in about 20-30 words:

7. What is steel? What is the percentage of carbon in it? 1+1=2
8. Define the term: (i) Ore (ii) Gangue. 1+1=2
9. Give two uses of formaldehyde. 2×1=2
10. Define biomass. Write two uses of biomass. 1+1=2
11. What is somatic and germinal variation? 2×1=2

Answer the following questions in about 40-60 words:

12. What are endothermic reactions? Give two examples. 1+2=3
13. Explain the method of magnetic separation with the help of a labelled diagram. 2+1=3
14. Pentane has three isomers, write its molecular structure and name them. 3×1=3
15. a. An object 5cm in length is held 25cm away from a convex lens of focal length 10cm. Find the position and size of the image.

Or 3

- b. An object 5cm in length is placed at a distance of 20cm in front of a convex mirror of radius of curvature 30cm. Find the position and size of the image.

16. A 100 watt electric bulb is lighted for 2 hours daily and four 40 watt bulbs are lighted for 4 hours daily. Calculate the energy consumed (in kWh) in 30 days. **3**
17. Write three advantages of nuclear energy. **3×1=3**
18. a. Briefly explain any three factors affecting photosynthesis. **3**
Or
b. Briefly explain the three types of blood vessels in human beings.
19. a. Draw the structure of a complete flower and label the following parts:
(i) Stigma (ii) Anther (iii) Ovary (iv) Receptacle **1+4×1/2=3**
Or
b. Draw the structure of the lateral view of the human brain and label the following parts:
(i) Frontal lobe (ii) Occipital lobe (iii) Cerebellum (iv) Pons
20. a. Explain any three principles of inheritance. **3×1=3**
Or
b. Explain three evidences to support organic evolution.
21. What is sustainable development? State four priority areas for action. **1+2=3**

Answer the following questions in about 70-100 words:

22. a. Explain Hoops electrolytic process for refining of Aluminium with the help of a labelled diagram. **3+2=5**
Or
b. Explain Haber's process for the manufacture of ammonia with the help of a labelled diagram.
23. a. Describe the working of a compound microscope and show the image formation with the help of a ray diagram. **3+2=5**
Or
b. Describe the working of an astronomical telescope and show the image formation with the help of a ray diagram.
24. Mention any five safety measures in using electricity. **5×1=5**

25. a. Explain nutrition in *Amoeba* with the help of a labelled diagram of the different stages of nutrition of *Amoeba*.

Or

3+2=5

b. Explain nutrition in grasshopper with the help of a labelled diagram of the digestive system of grasshopper.

26. a. What is urban waste? Explain four impacts of waste accumulation.

Or

1+4=5

b. What is global warming? Explain four major consequences associated with green house effect and global warming.
