



Brilliant Public School
Seepat Road Bahatarai, Bilaspur (C.G.)
Pre-Board-I, Examination, 2017-18
Class – X
Subject - Science

TIME: 3:00Hrs.
Date: 06 Jan. 2018

M.M.80
Saturday

GENERAL INSTRUCTIONS :

- (i) The question paper comprises two sections A and B. You are to attempt both the sections.
- (ii) All questions are compulsory.
- (iii) All questions of Section A and B are to be attempted separately.
- (iv) There is an **internal choice** in **three** questions of **3 marks** each and two questions of **5 marks** each and **one** question (for assessing the practical skills) of **2 marks**.
- (v) Question numbers 1 and 2 in Section A are one mark question. They are to be answered in one word or in one sentence.
- (vi) Question numbers 3 to 5 in Section A are two marks questions. These are to be answered in 30 words each.
- (vii) Question numbers 6 to 15 in Section A are three marks questions. These are to be answered in about 50 words each.
- (viii) Question numbers 16 to 21 in Section A are 5 marks questions. These are to be answered in 70 words each.
- (ix) Question numbers 22 to 27 in Section B are based on practical skills. Each question is a two marks question. These are to be answered in brief.

SECTION A

1. What is the function of pancreas in the human digestive system? (1)
2. What is a cerebrospinal fluid? What is its function? (1)
3. Write two advantages and disadvantages of nuclear power plant. (2)
4. A solution of the substances 'X' is used for white washing: (2)
 - (i) Name the substance 'X' and write its formula.
 - (ii) Write the reaction of substance 'X' with water?
5. An object of height 1.2m is placed before a concave mirror of focal length 20 cm so that a real image is formed at a distance of 60 cm from it. Find the position of the object. Also determine the height of the image formed? (2)
6. What is the advantage of having four chambered heart? What will happen if platelets were absent in the blood? (3)
7. What are the advantages of sexual reproduction over asexual reproduction? What are the different methods of contraception? (3)
8. How do Mendel's experiments show that the traits may be dominant or recessive? Illustrate with the help of a cross. (3)
9. (a) Explain why the wing of a bat and the wing of a bird are considered to be analogous organs.
(b) List two factors that lead to the formation of a new species. (3)

10. Define the homologues series. Write the IUPAC name of first member of alkene and third member of aldehyde? (3)
11. Complete the following reaction: (3)
- (i) $\text{NaHCO}_3 + \text{heat} \rightarrow$
- (ii) $\text{Na}_2\text{CO}_3 + \text{HCl} \rightarrow$
- (iii) $\text{Al} + \text{O}_2 + \text{heat} \rightarrow$

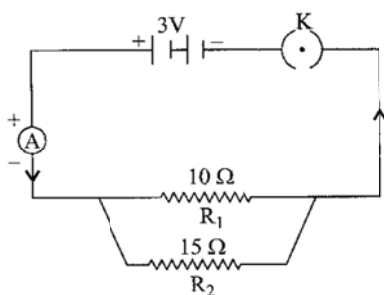
12. (a) Write the IUPAC name of the following : (3)
- (i) $\text{CH}_3\text{-CH}_2\text{-CH=CH-CHO}$
- (ii) $\text{CH}_3\text{-CO-CH}_3$

(b) Draw the structure of the following organic compound:

- (i) Butanoic acid
- (ii) Ethanal

13. (a) Define magnetic field. (3)
- (b) A compass needle gets deflected when brought near a bar magnet. Why?
- (c) List two properties of magnetic field.

14. Study the given circuit and answer the following questions: (3)



- (a) State and define the type of combination used in the circuit.
- (b) How much current would flow through each resistor?
- (c) What would be the ammeter reading?
15. (a) Define principal focus of a spherical mirror. (3)
- (b) For what position of the object does a concave mirror form a real, inverted and diminished image of the object? Draw a ray diagram for it.
16. What is meant by reflex action and reflex arc? What is the role of adrenaline hormone? How conduction of nerve impulse take place in human body? Explain. (5)
17. Differentiate between renewable and non-renewable resources with examples. Why do we need to use coal and petroleum judiciously? (5)

OR

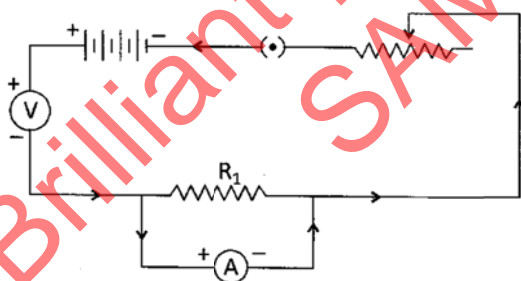
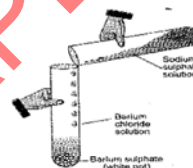
List two causes of depletion of ozone layer. Mention any two harmful effects of depletion of ozone layer. Differentiate food chain and food web with example.

18. (a) Write four difference between metal and non-metal? (5)
- (b) Identify the nature of the following salt:
- (i) CaCO_3 (ii) NaCl (iii) CaCl_2 (iv) BaSO_4
- (c) Write two similarities between acid and base?

19. Write the balance chemical equation of the following: (5)
- Methane is burn in sufficient air.
 - Ethanol treated with sodium.
 - Ethanoic acid treated with sodium carbonate.
 - Ethanol is mixed with ethanoic acid in the presence of an acid.
20. (a) Draw a neat labeled diagram of a human eye and label its various parts. (5)
- (b) In which direction a ray of light bends while emerging out of a prism?
21. (a) A coil of insulated copper wire is connected to a galvanometer. What will happen if a bar magnet is:
- Pushed into the coil, its north pole entering first? (5)
 - Withdrawn from inside the coil?
 - Held stationary inside the coil?
- (b) Name the above phenomenon and mention the name of the scientist who discovered it?
- (c) State the rule used to find the direction of induced current.

Section -B

22. A student observed permanent slide showing asexual reproduction in yeast. Draw diagrams of observations he must have made from the slide. Also name the process. (2)
23. Differentiate between monocot and dicot. Name the part of cotyledon responsible for root and shoot system. (2)
24. Observe the given figure and answer the following questions. (2)
- Write the complete balanced reaction for the reaction that takes place.
 - Type of reaction involved.
 - Is there any precipitate formed.
 - If any precipitate formed, write the colour of the precipitate.
25. On keeping iron nails in a blue coloured copper sulphate solution, it is observed that the colour of the solution turns light green after sometime. Give reasons for this colour change. Name the type of reaction. (2)
26. Is the circuit given below is correct? Justify your answer. (2)



27. What is meant by dispersion of white light? And name the component of white light which deviates the (i) least and (ii) most while passing through a glass prism. (2)

OR

The refractive indices of medium A, B, C and D are 1.33, 1.44, 1.52 and 1.65 respectively. In which of these medium the speed of light is (i) maximum and (ii) minimum. Find the refractive index of the medium D w.r.t. A.