

AMRITA VIDYALAYAM

AMRITA PRE BOARD EXAMINATION 2 - 2018 -'19

Class : X

Marks : 80

Time : 3 hrs

SCIENCE

GENERAL INSTRUCTIONS :

- (i) The question paper comprises five sections, A, B, C, D and E. You are to attempt all sections.
- (ii) All questions are compulsory.
- (iii) Internal choice is given in Section B, C, D and E.
- (iv) Question numbers 1 and 2 in Section A are one mark question. They are to be answered in one word or in one sentence.
- (v) Question numbers 3 to 5 in Section B are two marks questions. These are to be answered in 30 words each.
- (vi) Question numbers 6 to 15 in Section C are three marks questions. These are to be answered in about 50 words each.
- (vii) Question numbers 16 to 21 in Section D are 5 marks questions. These are to be answered in 70 words each.
- (viii) Question numbers 22 to 27 in Section E are based on practical skills. Each question is a two marks question. These are to be answered in brief.

SECTION - A

1. Which component of blood transport oxygen?
2. Name the multi-crore project launched in 1985 to clean excess pollution in River Ganga.

SECTION - B

3. Explain why an aqueous solution of sodium sulphate is neutral while an aqueous solution of sodium carbonate is basic in nature.
4. a) Describe in brief the change the uterus undergoes to receive the zygote.
b) In which part of human female reproductive system zygote is formed?
5. For the same angle of incidence in media A, B and C the angles of refraction are 20° , 30° and 40° respectively. In which medium will the velocity of light be maximum? Give reason.

OR

The refractive index of water is 1.33 and that of kerosene is 1.44. Calculate the refractive index of kerosene with respect to water.

SECTION - C

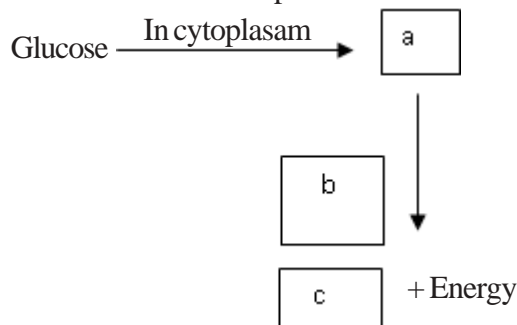
6. What happens when Ferrous sulphate crystals are heated? Give a balanced equation for the reaction with symbols. Name and define the type of chemical reaction involved in the above change.
7. State reason for the following statements.
 - a) Tap water conducts electricity, whereas distilled water does not.
 - b) Dry hydrogen chloride gas does not turn blue litmus red, where as hydrochloric acid does.

c) During the summer season a milkman usually adds a very small amount of baking soda to fresh milk.

OR

State the meaning of strong acids and weak acids. Classify the following into strong acids and weak acids HCL, CH_3COOH , H_2SO_4 , H_2CO_3 .

8. Atomic number of an element 'X' is 17. To which group and period of the modern periodic table does X belong. State its valency and justify your answer.
9. A gland secretes a particular hormone. The deficiency of this hormone in the body causes a particular disease in which the blood sugar level rises.
- a) Name the gland and the hormone secreted by it.
- b) Mention the role played by this hormone.
- c) Name the disease caused due to the deficiency of this hormone. How can it be treated?
10. a) Complete the flow chart by filling the blanks in the schematic representation of breakdown of glucose molecules in case of anaerobic respiration in muscle cells.

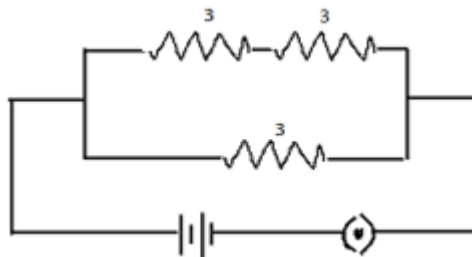


- b) Why do we feel cramps in our muscles during sudden physical activity?
- c) In which cell organelle aerobic respiration takes place?
11. Amit visited a science fair and saw a mirror in which he got a funny image. The image of the upper part of his body was big in size, middle part was of normal size and that of the lower part of his body was seen in very small size. What kind of mirrors are used here?

OR

How will you identify whether a given lens is concave or convex without touching it? Also mention one use of each of the lenses.

12. Three resistors of 3Ω each are connected to a battery of 3V as shown. Calculate the current drawn from the battery.



13. Distinguish between resistance and resistivity of a conductor. State the factors on which the resistance of a metallic wire depends.
14. What should be the minimum wind speed to maintain the required speed of the turbine in a wind energy farm? List two limitations in harnessing wind energy.
15. The use of pesticide DDT is discouraged since this chemical is found in human body. How does this chemical enter our body?

OR

‘Damage of ozone layer is a cause for concern’. How is ozone formed in the upper part of atmosphere of the earth? How can the damage of ozone layer be prevented? In what way ozone layer beneficial for us?

SECTION - D

16. a) Metals like iron, silver and copper get corroded on exposure to air. Write the chemical name of the substance deposited on the surface respectively with its colour in each case.
b) List four ways by which rusting can be prevented.
17. An Organic compound ‘A’ is an essential constituent of wine and beer. Oxidation of ‘A’ yields an organic compound ‘B’ which is present in Vinegar. Name the compounds ‘A’ and ‘B’ and write their structural formula. What happens when ‘A’ and ‘B’ react in the presence of an acid catalyst? Write the chemical equation for the reaction.

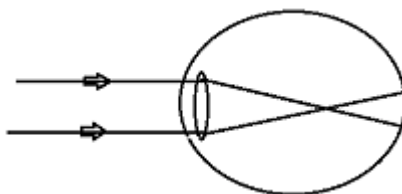
OR

Explain cleansing action of soap. Write two differences between soaps and detergents.

18. a) Draw a diagram showing germination of pollen on stigma of a flower and match and mark the following parts.
(i) Part that receives pollen grains.
(ii) Part that transfer male gamete to female gamete.
(iii) Part that develops into fruit.
b) Give reason.
(i) DNA copying is necessary during reproduction.
(ii) Fertilization is not possible without pollination.
19. a) Define genetics. Who is regarded as the father of genetics? List two reasons for which he selected pea plants for his experiments.
b) What are acquired and inherited traits?

OR

- a) What are fossils? What do they tell about the process of evolution?
b) Name any four mechanisms which can lead to specilisation in sexually reproducing organisms.
20. a) What happens to the image distance in the eye when we increase the distance of an object from the eye?
b) Study the diagram given below and give answers.



- (i) Name the defect of the eye.
(ii) Give two reasons for this defect.
(iii) How this defect can be corrected? Draw a diagram.
21. a) Draw the pattern of magnetic field around a current carrying solenoid. Compare this field to that of a bar magnet.
b) Write an activity to show that a current carrying conductor experiences a force when placed in a magnetic field.

OR

- a) State Fleming’s left hand rule.

- b) Write the working principle of an electric motor.
c) Explain the functions of the following parts of an electric motor.
(i) Armature (ii) Brushes (iii) Split rings

SECTION - E

22. A colorless odourless gas is evolved when baking soda is treated with vinegar. Name the gas evolved. How will you test this gas?

OR

A drop of colorless liquid P is poured over red litmus. It is observed that red litmus paper turns blue. What is the nature of liquid P? Which is the ion or radical responsible for the change in the colour of litmus?

23. There are two samples of water A and B, the sample A lathers freely with soap but the sample B forms a scum. Classify the samples A and B on the basis of above information.
24. A student observed a permanent slide showing the sexual reproduction in yeast. Draw diagrams of the observations he must have made from the slide. Name the process also.

OR

Name the process by which an amoeba reproduces. Draw the various stages of its reproduction in a proper sequence.

25. Give any two precautions to be taken while dissecting a germinating seed to observe its parts.
26. In a volt meter there are 20 divisions between 0 V mark and 0.5 V mark. Calculate the least count of the volt meter.
27. Draw a ray diagram showing the path of light passing through a prism. Label angle of incidence and angle of deviation.

OR

A student performed an experiment with a convex lens and obtained a virtual image of an object.

- a) What is the position of the object?
b) Draw a ray diagram for the above situation.