

# AMRITA VIDYALAYAM

## AMRITA II PRE BOARD EXAMINATION - 2017 -'18

Class : X

Marks : 80

Time : 3 hrs

### SCIENCE

#### GENERAL INSTRUCTIONS :

1. This question paper comprises two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory.
3. All questions of Section A and all questions of Section B are to be attempted separately.
4. Question numbers 1 - 2 are one mark questions.
5. Question numbers 3 - 5 are two mark questions.
6. Question numbers 6 - 15 are three mark questions.
7. Question numbers 16 - 21 are five mark questions.
9. Question numbers 22 - 27 are two mark questions.

#### SECTION - A

1. What is biological magnification?
2. Name two safety measures commonly used in electric circuits and appliances.
3. We cannot see an object clearly if it is placed very close to the eyes. Justify your answer.
4. Define the term electric power. Write an expression for it.
5.  $\text{pH}$  has a great importance in our daily life. Explain by giving two examples.
6. List four stakeholders which may be helpful in the conservation of forest.
7. Give reason for the following.
  - a) Ionic compounds have high melting points.
  - b) Ionic compounds conduct electricity in its molten state.
  - c) Show the formation of  $\text{MgCl}_2$  by transfer of electrons.

OR

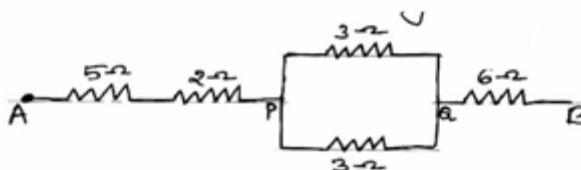
Explain why

- a) Chips packets are flushed with Nitrogen gas.
  - b) A milkman adds a very small amount of baking soda to fresh milk.
8. A convex mirror used on a moving auto mobile has a radius of curvature of 3.0 m. If a truck is following it at a constant distance of 4.5 m. Find
- a) the position,
  - b) the nature and
  - c) the magnification for the image.

OR

An object of height 4cm is placed at a distance of 15cm in front of a concave lens of power -10 D. Find the size and nature of the image.

9. Calculate the total resistance between points A and B in the given circuit diagram.



10. Describe double circulation in human beings. Why is it necessary?

OR

Find out  $F_2$  phenotypic ratio of dihybrid cross.

11. Briefly explain the factors which help in speciation.
12. In the electrolysis of water the gas collected at cathode is double than that of the gas collected at anode. Substantiate the above statement. Also name the gases.
13. Ananya and Gowri planned to visit a nursery to purchase seasonal flowering plants. While strolling in the nursery Gowri saw a sensitive plant (*Mimosa pudica*). She asked Ananya to touch leaflets of *Mimosa* plant. The leaflets of the plant closed up. Answer the following questions based on the above information.
  - a) What do you infer from this activity?
  - b) What would you do on the basis of your inference?
14. An element x has mass number 35 and the number of neutrons is 18, identify the group number and period. Also predict the nature of it.
15. What is geothermal energy? How can it be utilized?
16. What are plant hormones? Give four different types of plant hormones and state their functions briefly.
17.
  - a) Write the names of the male reproductive organ that produces sperm and secretes hormone. Name the hormone secreted and state its function.
  - b) Write the site of fertilization and part where the Zygote gets implanted in the human female.
  - c) State in brief how an embryo gets its nourishment inside the mother's body.

OR

- a) Describe cross pollination and self pollination.
  - b) Draw a neat diagram of germination of pollen on stigma.
18. An unsaturated hydrocarbon A is formed, when an organic compound B which is used as a solvent in tonics and cough syrups is treated with hot conc. sulphuric acid. When A is hydrogenated C is formed.
  - a) Name A, B and C.
  - b) Identify the type of reaction involved.
  - c) Write the necessary balanced chemical equation.

OR

- a) Arrange the following elements in the descending order of their
 

(i) Electron negativity.	(ii) Atomic radius.	(iii) Electro positivity
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 O, F, N, C, B
  - b) State Doberneir's triad. Write one example.
19.
  - a) Differentiate between
 

(i) Cinnabar and Amalgam.	(ii) Roasting and Calcination.
(iii) Gypsum and plaster of Paris.	
  - b) What are the demerits of Mendeleev's periodic table?
20. Explain the principle and working of electric motor.
21. Give reason.
  - a) Sky appears blue in colour.
  - b) The Sun is visible to us two minutes before actual sunrise.
  - c) Stars appear higher than they actually are.

### SECTION - B

22. Three resistances of 1 ohm each are connected to form a triangle. Calculate the resistance between any two terminals.
23. Are binary fission and budding faster processes of reproduction when compared to sexual reproduction? Justify.

24. A student takes 2ml acetic acid in a dry test tube and add a pinch of sodium hydrogen carbonate to it. Write down the observations made by the student.
25. Draw a path of light passing through a prism. Label angle of incidence and angle of deviation.
26. Why KOH solution is kept in the test tube inside the air tight conical flask while doing the experiment of respiration of seeds?
27. A student performed the following four experiments. In which experiment will no reaction occur. Why?

