AMRITA VIDYALAYAM
ANNUAL EXAMINATION 2018 -'19

Class : IX   **Marks : 80**
                                                      Time : 3 hrs

SCIENCE

> **GENERAL INSTRUCTIONS :**
> *i)* *The question paper comprises five sections, A, B, C, D and E.*
> *ii)* *All questions are compulsory.*
> *iii)* *Internal choices are given in sections B, C, D and E.*
> *iv)* *Question numbers 1 and 2 in section A are one mark questions. 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 2 mark question. These are to be answered in brief.*

SECTION - A

1.   Define uniform circular motion.
2.   Name two green house gases.

SECTION - B

3.   Verify by calculating that five moles of CO_2 and five moles of H_2O do not have the same mass.
4.   Name the tissue in animals which carries out similar functions as the following tissues do in plants. Write their functions.
       a) Epidermis   b) Vascular Bundle
                            OR
       Identify the tissue present in the following and give one function.
       a) Leaf stalks below the epidermis.
       b) In stems, around vascular bundle.
       c) In the lungs alveoli.
       d) Ducts of salivary glands.
5.   Hari, a student of class 9 took two beakers A and B containing concentrated salt solution and distilled water respectively. Equal number of dried apricots are kept in them for a few hours and then taken out.
       a) Did he observe any change in the physical appearance of apricots? Why?
       b) On the basis of above observation categorise the two solutions.

SECTION - C

6.   Give three differences between acceleration due to gravity and universal gravitational constant.
7.   State the Law of Inertia. Why do we fall in the forward direction if a moving bus stops suddenly and fall in the backward direction if it suddenly accelerates?

8. Suppose gravity of earth suddenly becomes zero, then which direction will the moon begin to move if no other celestial body affects it?

OR

A body floats in kerosene of density 0.8×10^3 Kg/ m³ upto a certain mark. If the same body is placed in water of density 1×10^3 Kg/ m³, will it sink more or less? Give reason.

9. What is the relationship between the commercial unit and SI unit of energy?

10. What are the postulates of Bohr's model of an atom? Draw a sketch of Bohr's model with three shells.

OR

Describe an experiment to show sublimation of ammonium chloride.

11. Classify the following as physical and chemical changes.
Condensation of steam, freezing of water, rusting of iron, ripening of fruits, sublimation, formation of curd from milk.

12. Differentiate the properties of true solution, suspension and colloid with respect to tyndall effect and stability.

13. a) What produces more severe burns, boiling water or steam? Why?
b) The smell of baking cake from the kitchen reaches in the bedroom. Give reason.

14. Seeta, a student of Class 9 decided to help the women of her village to increase the milk production of their cattle. She told them that they can increase the milk production of cattle by mating them with species having long lactation period.
a) Which methods are used for producing improved varieties of cattle?
b) Name two exotic breeds of cow.
c) What do you meant by lactation period?

15. Sunitha lives in a remote village. Many cases of malaria were reported in her village.
a) Name the infectious agent of malaria.
b) How does it spreads?
c) What can you do to prevent the spread of malaria in Sunitha's village? (any four)

OR

"Prevention is better than cure." Justify the statement.

SECTION - D

16. a) Derive the relationship between force and acceleration. Define one unit of force.
b) A bullet of mass 20 gm is horizontally fired with a velocity of 150 m/sec from a pistol of mass 2 kg.
What is the recoil velocity of the piston?

17. Draw a neat and labelled diagram of ear. Explain how we hear sound.

OR

Explain the characteristics of sound waves.

18. a) State the postulates of Dalton's Atomic theory.
b) Calculate the number of moles of 80 g of Helium.

19. a) Write a note on how forest influence the quality of air, water and soil resources.
b) What can you do to reduce depletion of ozone layer?

OR

a) One electron is present in the outermost shell of an element Z.
(i) What will be the nature of this element?
(ii) What will be the value of charge of the ion form, if this electron is removed from the outermost shell?

b) Write the electronic configuration of an element having atomic number 14. Name the element and give its valency.

20. Differentiate between the following.

a) Ceolom in Ascaris and earthworm.

b) The skin of salamander and a human.

c) The tube system in star fish and canal system in Euplectela.

d) Reproduction in Bat and Platypus.

e) Respiratory organs in tadpole and frog.

OR

Draw a flow chart to show different divisions of kingdom Plantae and answer the following question.

a) Which division has the simplest plants?

b) To which division does Pinues and Cycas belong?

c) What is the other name given to flowering plants?

d) Which division is called amphibians of plant kingdom?

21. Justify the following statements.

a) Availability of proper and sufficient food would prevent us from infectious diseases.

b) "The general ways of preventing diseases include preventing exposure". How can you prevent exposure to infectious diseases. Give examples of diseases.

SECTION - E

22. While Anita was preparing a temporary mount of onion peel, she mixed it with glycerin.

a) Why did she use glycerin?

b) What is the outermost layer of onion peel cells?

OR

A plant specimen was found with rhizoids instead of roots.

a) Identify the group to which it belongs.

b) Write any two characteristics of this group.

23. Harshita was given a plant specimen to identify. She noticed a ribbon shaped chloroplast with small rounded structure inside.

a) Identify the specimen.

b) Name the round structure and write its functions.

24. While determining the density of solid ball Arun noted down the following readings.

a) Mass of the solid ball = 64 g.

b) Reading of water level in the cylinder without ball in it = 62 mL.

c) Reading of water level in the cylinder with ball in it = 70 mL.

On the basis of these observations, what should be the density of the solid?

25. Athul while verifying the law of reflection of sound, measured the angle between the incidence sound wave and reflected sound wave to be 130. What is the angle of incidence? Draw the diagram also.

OR

Two slinky, A and B of the same length, are made up of two different materials. The time taken of 20 pulses to travel in both of them are 70 sec and 90 sec respectively. In which slinky the pulse travels faster. Why?

26. X is a mixture of iron filings and sulphur and Y is a product obtained by heating the mixture X. On bringing a magnet over X and Y, what will happen?

OR

In order to find the boiling point of water , one of the precautions is that the bulb of the thermometer should not touch the sides of the beaker. Why?

27. What will be the changing colour of anhydrous copper sulphate before and after heating. Why?