FIRST TERM EXAMINATION

SCIENCE

(Class:- IX)

(Diversity in living organisms, Force and laws of Motion, Sound, Matter in our surroundings)

Guidelines:

- All questions are compulsory.
- The question paper consists of 42 questions divided into 3 sections A, B, and C.
- Section A comprises of 20 questions of 1 mark each. Section B comprises of 15 questions of 3 marks each. Section C comprises of 7 questions of 5 marks each.

SECTION-A (20 × 1 = 20)

Q1. Chlorophyll is not present in _____?

a) Algae

b) Fungi

c) Bryophyta

d) Pteridophyte

Q2. The most primitive vascular plants are

a) Cycas

b) Ferns

c) Moss

d) Brown algae

Q3. _____ are also called vascular cryptogams.

Q4. The binomial nomenclature is made up of two words a _____ name and a _____ name.

Q5. A sea anemone belongs to the phylum _____?

Q6. The inertia of a moving object depends on

a) Momentum of the object,

b) Speed of the object,

c) Mass of the object,

d) Shape of the object.

Q7. When we jump out a boat standing in water it moves.

a) Forward,

b) Backward,

c) Sideways,

d) None of the above.

Q8. The speed of a falling body increases continuously this is because,

a) No force acts on it,

b) It is very light,

c) The air exerts the frictional force,

d) The earth attracts it.

Q9. Assertion: newtons third law applies to all types of forces (e.g.) gravitational, electric or magnetic forces.

Reason: Newton's third law of motion is applicable only when bodies are in motion.

Q10. A body at rest explodes into two equal parts. Then,

a) They move with different speeds in different directions,

b) They move with different speeds in same direction,

c) They move with same speed in same direction,

d) They move with same speed in opposite direction.

Q11. _____ is equal to change in momentum?

Q12. Mechanical wave can travel,

a) In vacuum as well as in medium.

b) In vacuum but not in median.

c) In a medium but not in vacuum.

d) Neither in a medium nor in vacuum.

Q13. Velocity of sand in vacuum is _____?

Q14. Loudness of ∝ note increases with the increase in _____?

Q15. The sound waves having a frequency, more than 20,000 Hz are called,

a) Infrasonic waves,

b) Supersonic waves,

c) Ultrasonic waves,

d) Hypersonic waves.

Q16. Of the following the one which emits sound of higher pitch is,

a) Mosquito

b) Man

c) Lion

d) Woman.

Q16. The inter-particle force is the strongest in,

a) Hydrogen

b) Methyl alcohol

c) Water

d) Sodium chloride.

Q17. The state of matter which consists of super energetic particles in the form of ionized gases is called,

a) Gaseous state

b) Liquid state

c) Plasma state

Q18. Which mixture will be the most difficult to separate?

Q19. Soda water cane be separated by _____ the pressure.

Q20. Evaporation of a liquid can take place,

a) At its boiling point,

b) Below its boiling point

c) Above its boiling point

d) At fixed temperature.

SECTION-B (15 × 3 = 45)

Q21.

a) When a soli8d starts melting its temperature does not rise till the whole of it has melted. Explain?

b) Difference between boiling and Evaporation.

Q22.

a) Two ball A and B of masses ‘m’ and ‘2m’ are in motion with velocities ‘2v’ and ‘v’ respectively. Compare their inertia and their momentum.

b) State the relation between force and momentum.

Q23. Name the subgroup of kingdom plantae. Which is called amphibians of plants. Write 2 characteristic features of this subgroup.

Q24. Define the following terms,

a) Rigidity
b) Compressibility
c) Diffusion

Q25. Give reasons,

a) Perspiration helps to keep our body cool on a hot day.

b) Gas fills its container completely.

c) Ice at 0°c appears colder to the mouth than water at 0°c why?

Q26. Name the following,

a) Liquid metal

b) Hardest non-metal

c) Non-metal that can conduct electricity

d) Substance that can become liquid when kept slightly above the room temperature.

Q27. List the 3 differences between Angiosperms and Gymnosperm's.

Q28.

a) A vibrating body produces sound. However, no sound is heard when a simple pendulum oscillates in air why?

b) A sound wave travels at a speed of 339 m/s. If its wavelength is 65cm. what is the frequency of the wave? Can we hear the sound of the wave?

Q29.

a) Give any two example of phylum Nematoda.

b) Write any 2 characteristics of class Mammalia. Name one egg laying mammal.

Q30. A body of mass ‘m’ is moving with velocity ‘u’. When a force is applied on it for time ‘t’, its velocity increases to ‘v’. Write expressions for,

a) Initial and final momentum
b) Change of momentum
c) Rate of change of momentum. Also write S.I unit for each.

Q31.

a) What are hermaphrodites? Give examples.

b) Name the phylum of the following,

i) Tapeworm

ii) Starfish

iii) Jellyfish

iv) Octopus

Q32. When a sound is reflected from a distant object an echo is produced. Let the distance between the reflecting surface and the source of sound production remains the same. Do you hear echo sound on a hotter day?

Q33.

a) What are longitudinal waves? Give two examples.
b) A longitudinal wave of wavelength 1 cm travels in air with a speed of 330 ms^{-1}. Calculate the frequency of the wave. Can this wave be heard by a normal human being?

Q34. Why do athletes have a special posture with their right foot resting on a solid supporter for athletic races?

Q35.

a) If a ball is thrown up in a moving train, it comes back to the persons hands. Why?
b) There are 3 solid balls made up of aluminum, steel and wood of the same shape and volume. Which of them would have highest inertia? Why?

SECTION-C (7 × 5 = 35)

Q36.

i) State and prove the law of conservation of momentum.

ii) A body of mass 5kg is initially moving with the velocity of 30m/s. A force is applied on it for 5s which changes velocity to 40 m/s. Calculate,
   a) Change in the momentum of the body.
   b) Rate of change of momentum of the body.
   c) Acceleration produced in the body.
   d) Force applied on the body.

Q37. Give reasons,

a) Generally, no hydrogen gas is evolved when metals react with dilute nitride acid.

b) Sodium hydroxide solution cannot be kept in aluminum container.

c) Silver metal does not combine easily with oxygen but silver jewelry tarnishes after some time.

d) Sodium is obtained by the electrolysis of its molten chloride and not from its aqueous solution.

e) Aluminum react with dilute hydrochloric acid slowly in the beginning.

Q38.

a) Write the full form of ‘SONAR’.

b) Explain the working and application of ‘SONAR’ with a neat diagram?

Q39.

a) State two characteristics features of vertebrates.

b) State reasons for each of the following statements

i) Echidna and platypus lay eggs, but are considered as mammals.

ii) Forelimbs of birds are modified.

iii) Crocodiles have four chambered heart but are still reptiles.

Q39.

i) Draw a diagram of well-labelled diagram of Paramecium.

ii) Name the kingdom to which it belongs to.

Q40.

a) Define the following characteristics of sound,
   i) Pitch
   ii) Loudness
   iii) Quality or Timbre

b) A boy receives his echo 3 seconds later. Find the distance of the reflecting surface from the boy.
Speed of sound in air is 342 m/s.

Q41.

a) Explain the term diffusion. Illustrate with an activity that rate of diffusion increases with temperature.

b) Name two compressed gases which are used in,
   i) Our homes for cooking
   ii) Are supplied to hospital in cylinders.

Q42.

a) Write an activity to difference between a balanced and unbalanced force.

b) Explain whether the force is balanced or unbalanced in the following situations,

i) A suitcase is dropped from a certain height.

ii) A bicycle is moving in a straight line with constant velocity.

iii) In the game of tug of war, the two teams apply force but the rope doesn't move.

iv) A ball rolling on the ground stops after sometime.