

DAV BORL PUBLIC SCHOOL, BINA

Sample Paper Half Yearly Examination Session (2019-20)

Class: IX
Time Allowed: 3 hrs.

Subject: SCIENCE
Maximum Marks: 80

General Instructions :

1. All questions are compulsory
2. Question numbers 1 to 20 are of one mark multiple choice questions.
3. Question numbers 21 to 30 are three marks questions. These are to be answered in about 50 words each
4. Question numbers 31 to 36 are five marks questions. These are to be answered in about 70 words each.

1. If the displacement of an object is proportional to square of time, then the object moves with 1
 - a) uniform velocity
 - b) uniform acceleration
 - c) increasing acceleration
 - d) decreasing acceleration
2. Area under a $v - t$ graph represents a physical quantity which has the unit 1
 - a) m^2
 - b) m
 - c) m^3
 - d) $m s^{-1}$
3. According to the third law of motion, action and reaction 1
 - a) always act on the same body
 - b) always act on different bodies in opposite directions
 - c) have same magnitude and directions
 - d) act on either body at normal to each other
4. The inertia of an object tends to cause the object 1
 - a) to increase its speed
 - b) to decrease its speed
 - c) to resist any change in its state of motion
 - d) to decelerate due to friction

5. Choose the correct statement of the following 1
- (a) Conversion of solid into vapours without passing through the liquid state is called vapourisation.
- (b) Conversion of vapours into solid without passing through the liquid state is called sublimation.
- (c) Conversion of vapours into solid without passing through the liquid state is called freezing.
- (d) conversion of solid into liquid is called sublimation
6. Which of the following will show tyndall effect? Why? 1
- a. salt solution b. Milk c. copper sulphate solution d. starch solution
7. Two chemical species X and Y combine together to form a product P which contains both X and Y 1
- $X + Y \rightarrow P$
- X and Y cannot be broken down into simpler substances by simple chemical reactions. Which of the following concerning the species X, Y and P are correct?
- (i) P is a compound(ii) X and Y are compounds
- (iii) X and Y are elements(iv) P has a fixed composition
- (a) (i), (ii) and (iii),(b) (i), (ii) and (iv)(c) (ii), (iii) and (iv)(d) (i), (iii) and (iv)
8. A mixture of sulphur and carbon disulphide is 1
- (a) heterogeneous and shows Tyndall effect
- (b) homogeneous and shows Tyndall effect
- (c) heterogeneous and does not show Tyndall effect
- (d) homogeneous and does not show Tyndall effect
9. The property to flow is unique to fluids. Which one of the following statements is correct? 1
- (a) Only gases behave like fluids
- (b) Gases and solids behave like fluids
- (c) Gases and liquids behave like fluids
- (d) Only liquids are fluids
10. Chromosomes are seen best in which of the following stage of the cell. 1
- (a) Interphase
- (b) Dividing phase

- (c) Resting phase
- (d) G-Zero phase

11. The powerful hydrolytic enzymes found inside the Lysosomes are made by which of the following cell organelle? 1
- a) SER
 - b) RER
 - c) Mitochondria
 - d) Vacoules
12. Epidermis of Xerophytes (Desert plant) has a thick coating of which of the following carbohydrate to make it waterproof. 1
- a) Glucose
 - b) Suberin
 - c) Insulin
 - d) Cutin
13. Which of the following is called as polynuclear Leucocytes? 1
- a) Eosinophil
 - b) Basophil
 - c) Lymphocytes
 - d) Neutrophil
14. The atmosphere is held to the earth by ----- 1
15. A sample of water under study was found to boil at 102°C at normal temperature and pressure. Is the water pure? Will this water freeze at 0°C? Comment. 1
16. What is the source of centripetal force that a planet requires to revolve around the Sun? 1
17. Evaporation of a liquid at room temperature leads to a —— effect. 1
18. Draw a velocity-time graph for uniform acceleration. 1
19. The arrangement of particles is less ordered in the —— state. However, there is no order in the —— state. 1
20. Water as ice has a cooling effect, whereas water as steam may cause severe burns. Explain these observations. 3

21. A car having mass 700 kg is moving at a speed of 90 km/h. On applying brakes, its speed is reduced to 36 km/h in 10 s. Calculate the force applied by the brakes. 3
22. During arm wrestling, participants put their arms on the table, and wrestle with the palms. If the force exerted by both the players is equal, 3
- a) Where are balanced forces acting?
 - b) Where is the action reaction pair acting?
23. Suppose an astronaut lands on the moon and drops an object from a height of 4.97m from the surface. How much time will it take to reach the moon's surface? 3
24. Comment on the following statements: 3
- (a) Evaporation produces cooling.
 - (b) Rate of evaporation of an aqueous solution decreases with increase in humidity.
 - (c) Sponge though compressible is a solid.
25. Why does the temperature of a substance remain constant during its melting point or boiling point? 3
26. Suggest separation technique(s) one would need to employ to separate the following mixtures. (Any Three) 3
- (a) Mercury and water
 - (b) Potassium chloride and ammonium chloride
 - (c) Common salt, water and sand
 - (d) Kerosene oil, water and salt
27. What would you observe when 3
- (a) a saturated solution of potassium chloride prepared at 60°C is allowed to cool to room temperature.
 - (b) an aqueous sugar solution is heated to dryness.
 - (c) a mixture of iron filings and sulphur powder is heated strongly.
28. The teacher instructed three students 'A', 'B' and 'C' respectively to prepare a 50% (mass by volume) solution of sodium hydroxide (NaOH). 'A' dissolved 50g of NaOH in 100 mL of water, 'B' dissolved 50g of NaOH in 100g of water while 'C' dissolved 50g of NaOH in water to make 100 mL of solution. 3
- Which one of them has made the desired solution and why?

OR

- (a) Name two properties of a substance to check its purity?
- (b) Alloys cannot be separated by physical means, though it is considered mixture, Why?
29. Give names of any two organisms associated with following. 3
a) Bee keeping b) Cattle farming c) Kharif crop d) Weeds Marine fish
e) Shell fish f) Indegenous cattle g) Exotic varieties of cattle.
30. a) Mention the two precautions to determine the boiling point of water in 5
laboratory.
b) A mixture of sand, powdered glass and common salt is dissolved in water and then filtered. Name the substance left on filter paper. Name the substance in the filtrate.
c) Explain how both physical and chemical changes take place during the burning of a candle.
31. a) Ball is thrown upward with a velocity of 20 ms^{-1} . Calculate the maximum height 5
attained, net displacement and total distance covered by the ball ($g=10 \text{ ms}^{-2}$)
b) Differentiate between universal gravitational constant and acceleration due to gravity.
32. a) State the Universal law of gravitation. Give its expression. 5
b) What is the S.I unit of universal constant of gravitation 'G'?
c) An object weights 15 N on earth. Calculate its weight on moon.
33. (a) List any four properties of a colloid and mention any two properties in which 5
colloids differ from suspension.
(b) State what is Tyndall effect? Which of the following solutions will show Tyndall effect? Starch solution, sodium chloride solution, Tincture iodine, air

OR

- (a) What happens to sugar when it is dissolved in water? What information do you get about the nature of matter from the dissolution of sugar in water?
- (b) Why does diffusion occur more quickly in a gas than a liquid?
- (c) What is Brownian motion? Write the characteristics of matter is demonstrated by Brownian motion?

34. Differentiate between evaporation and boiling (five points) 5

OR

a) Define diffusion.

b) How do you get the smell of a hot sizzling food from a distance?

c) Compare between solids liquids and gas on the basis of rate of diffusion

35. a) Draw a well labeled diagram of the functional unit of your nervous system and explain the function of any two parts. 5

b) i) Write a short note on apiculture.

ii) Explain composite fishery.

36. Answer the following questions in brief: 5

a) Role of parenchyma

b) Lateral meristematic tissue

c) Crop Rotation

d) Green manuring

e) Indigenous species

~~~~~ **END** ~~~~~

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