Strive for Perfection

ANGEL'S PUBLIC SCHOOL

SAMPLE PAPER
HALF YEARLY EXAMS SESSION 2021 – 22
CLASS – IX CODE – 086

TIME: 3 HRS **SUBJECT : SCIENCE** **M.M:80**

General Instructions

(a) Section A contains question numbers 1 to 13, multiple choice questions of one mark each.

(b) Section B contains question numbers 14, short answer type questions of two marks each.

(c) Section C contains question numbers 15 & 16, long questions of three marks each.

(d) Section D contains question number 17 very long five marks each.

SECTION – A

1. Which of the following can be made into crystal?
(a) a bacterium (b) an Amoeba (c) a virus (d) a sperm

2. A cell will swell up if_____.
(a) the concentration of water molecules in the cell is higher than the concentration of water molecules in the surrounding medium
(b) the concentration of water molecules in the surrounding medium is higher than water molecules concentration in the cell
(c) the concentration of water molecules is same in the cell and in the surrounding medium
(d) concentration of water molecules does not matter

3. Chromosomes are made up of
(a) DNA (b) protein (c) DNA and protein (d) RNA

4. Which of these is not related to endoplasmic reticulum?
(a) It behaves as a transport channel for proteins between nucleus and cytoplasm.
(b) It transports materials between various regions in the cytoplasm.
(c) It can be the site of energy generation.
(d) It can be the site for some biochemical activities of the cell.

5. Which cell organelle plays a crucial role in detoxifying many poisons and drugs in a cell?
(a) golgi apparatus (b) lysosomes
(c) smooth endoplasmic reticulum (d) vacuoles

6. The undefined nuclear region of prokaryotes is also known as_____.
(a) nucleus (b) nucleolus
(c) nucleic acid (d) nucleoid

7. Following are a few definitions of osmosis. Read carefully and select the correct definition.
(a) Movement of water molecules from a region of higher concentration to a region of lower concentration through a semi–permeable membrane.
(b) Movement of solvent molecules from its higher concentration to lower concentration.
(c) Movement of solvent molecules from higher concentration to lower concentration of solution through a permeable membrane.
(d) Movement of solute molecules from lower concentration to higher concentration of solution through a semi permeable membrane.

8. Which of the following tissues has dead cells?
(a) parenchyma (b) sclerenchyma
(c) collenchyma (d) epithelial tissue

9. Girth of stem increases due to_____.
(a) apical meristem (b) lateral meristem
(c) intercalary meristem (d) vertical meristem

10. Intestine absorbs the digested food materials. What type of epithelial cells are responsible for that?
(a) stratified squamous epithelium (b) columnar epithelium
(c) spindle fibres (d) cuboidal epithelium

11. Which muscles act involuntarily?
(a) striated muscles (b) smooth muscles
(c) cardiac muscles (d) skeletal muscles
(i) (a) and (b) (ii) (b) and (c)
(iii) (c) and (d) (iv) (a) and (d)

12. Which is not a function of epidermis?
(a) protection from adverse condition (b) gaseous exchange
(c) conduction of water (d) transpiration

13. Cartilage is not found in_____.
(a) nose (b) ear (c) kidney (d) larynx

14. Solids do no flow because_____.
(a) large intermolecular spaces (b) they do not have definite shape
(c) very strong molecular forces (d) all of these

15. Which of the following doesn't effect the rate of evaporation?
(a) wind speed (b) temperature
(c) humidity (d) impurities

16. During summer water kept in an earthen pot becomes cool because of the phenomena of_____.
(a) diffusion (b) osmosis
(c) transpiration (d) evaporation

17. Which of the following statements is incorrect?
(a) Matter is made up of particles. (b) Matter is continuous in nature.
(c) Particles attract each other. (d) Particles of matter are always in state of motion.

18. Liquids diffuse slowly as compared to gases because_____.
(a) molecules of liquid are heavy (b) molecules of liquid move fast
(c) liquids do not have any definite shape
(d) In liquids, molecules are held together by strong molecular forces

19. Air is a _____ mixture.
(a) heterogenous (b) homogeneous
(c) miscible (d) immiscible

20. Hydrogen, nitrogen and oxygen are _____.
(a) compounds (b) elements
(c) ions (d) none of these

21. Which of the following is a colloid?
(a) milk (b) blood
(c) egg (d) all of these

22. The properties of mixtures are _____ its components.
(a) similar to (b) different from
(c) slightly different from (d) entirely different from

23. A vector quantity has_____.
(a) magnitude (b) direction
(c) both (d) none of the above

24. Odometer of an automobile records_____.
(a) distance (b) speed
(c) instantaneous speed (d) none of these

25. The slope of x–t graph gives the _____ of an object.
(a) distance (b) velocity
(c) acceleration (d) none of these

26. When a body is moving with uniform velocity, it's acceleration will be_____.
(a) infinite (b) can't be determined
(c) zero (d) some value

27. Rest and motion are _____.
(a) absolute terms (b) relative terms
(c) linear terms (d) all of these

28. The phenomena of motion is brought into sounds by the scientis (s) named_____.
(a) Galileo galilei (b) Isaac Newton
(c) both (d) none of the above

29. Under what conditions is the magnitude of average velocity of an object equals to its average speed?
(a) If object is moving in straight line. (b) If object is moving with uniform speed.
(c) If object is moving with non uniform speed.
(d) If object is stationary.

30. The rocket works on the principle of conservation of_____.
(a) mass (b) energy (c) momentum (d) velocity

31. What is the acceleration produced by a force of 12 N exerted on an object of mass 3 kg?
(a) 7m/s (b) 4m/s (c) 3m/s (d) 8 m/s

32. Which would require a greater force – accelerating a 2 kg mass at 5 m/s or a 4 kg mass at 2m/s?
(a) F1<F2 (b) F1>F2 (c) F1=F2 (d) none of the above

33. Which Newton's law explains the concept of inertia?
(a) first (b) second (c) third (d) none of these

34. Solids, liquids, gases, _____ and _____ are the five states of matter.
(a) plasma (b) BEC (c) both of these (d) none of the above

35. On Kelvin scale, 0°C is equal to _____.
(a) 273 (b) –273 (c) 0 (d) 373

36. Which of the following is a scaler quantity?
(a) displacement (b) acceleration (c) velocity (d) temperature

37. Retardation of a body is expressed in _____.
(a) m (b)m/s (c) cm/h (d) m/s^2

38. Which of the following is a compound?
(a) ammonium sulphate
(b) sodium chloride
(c) iodine
(d) barium sulphate

39. Which of the following physical quantity is not present in the third equation of motion ?
(a) time (b) acceleration (c) distance (d) velocity

SECTION – B

40. What are the functions of stomata?

41. Why can a small mass such as a bullet kill a person when fired from a gun?

42. Water sprinkler used for grass lawns begins to rotate as soon as the water is supplied. Explain the principle on which it works.

43. What do you mean by suspensions?

44. Derive the second equation of motion.

SECTION – C

45. State the roles of epidermis in plants.

46. Write a note on cardiac tissue.

47. Give reasons for the following.
(a) A sponge can be pressed easily; still it is called a solid.
(b) Water vapour has more energy than water at the same temperature.
(c) People sprinkle water on the roof after a hot sunny day.

48. A force of 20N acts upon a body whose weight is 9.8N. What is the mass of the body and how much is its acceleration? Take $g=9.8m/s^2$

SECTION – D

49. State the structure & functions of nucleus.

50. A stone is dropped from the top of a 40m tower. Calculate its speed after 2s, with which the stone strikes the ground.

51. Discuss the various factors which affect the rate of evaporation. Latent heat of evaporation of two liquids A and B is 100j/kg and 150 j/kg, respectively. Which one can produce more cooling effect and why?

52. Define acceleration due to gravity. Derive an expression for acceleration due to gravity in terms of mass of the earth(M) and universal gravitation constant(G).