Roll Number		

SET C

INDIAN SCHOOL MUSCAT
HALF YEARLY EXAMINATION
SCIENCE

CLASS: IX | Sub. Code: 086 | Time Allotted: 3 Hrs

17.09.2019 | Max. Marks: 80

General Instructions:

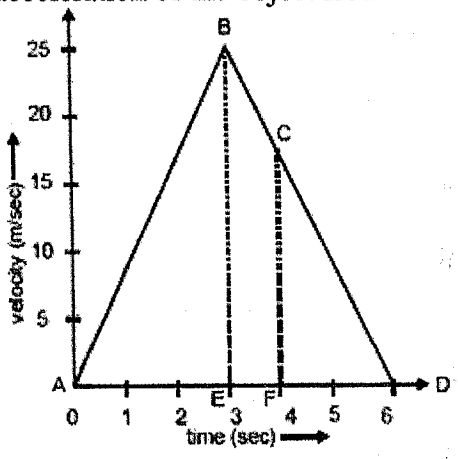
(i) The question paper comprises of Two sections – A and B. You are to attempt all the sections.
(ii) All questions are compulsory.
(iii) Internal choice is given in section B.
(iv) Question numbers 1 and 20 in Section-A are one-mark questions.
(v) Question numbers 21 to 30 in Section- B are three marks questions. These are to be answered in about 50 words each.
(vii) Question numbers 31 to 36 in Section-B are 5 marks questions. These are to be answered in about 70words each.

Section - A

1. A particle is moving around a circular path of radius r. What will be its displacement after half a circle? 1

   a) 0 b) $2\pi r$ c) 2r d) r/2

2. The velocity-time graph of an object moving with non-uniform velocity is shown below. The acceleration of the object from A to B. 1

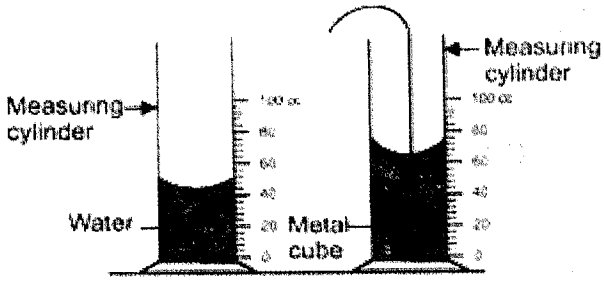


   a) $25 m/s^2$ b) $8.3 m/s^2$ c) $3 m/s^2$ d) $-2 m/s^2$

3. Same force acts on the objects A, B, C and D having mass 1Kg, 2Kg, 3Kg and 4Kg respectively. Which of the objects has least acceleration? 1

   a) A b) B c) C d) D

4. The water level in a measuring cylinder, before and after immersing a metal cube in it, is shown in the figure. The volume of the metal cube is: 1



a) 24 cm3 b) 22 cm3 c) 20 cm3 d) 18 cm3

5. Which one of the following is a colloid?
a) Vinegar b) Air c) Ink d) Copper sulphate

6. Process of sublimation is applied for the separation of:
a) sand & salt b) sand & sulphur
c) ammonium chloride & salt d) Ammonium chloride & naphthalene

7. Which one of the following mixtures is immiscible?
a) water & alcohol b) water & acetone
c) water & kerosene d) water & vinegar

8. Which of the following is a homogeneous mixture?
a) Iron filings and sulphur powder b) sand and salt
c) salt and water d) water & kerosene oil

9. Smooth Endoplasmic Reticulum in the liver cells of vertebrates are responsible for :
a) Storage of proteins b) detoxifying poisons
c) excretion of food waste d) production of proteins and lipids

10. In which group of plant kingdom, the organisms which are predominantly aquatic included
a) Thallophyta b) Pteridophyta c) Gymnosperms d) Bryophyta

11. Write two precautions we should observe while doing the activity of temporary slide preparation of human cheek cells.

12. Write any two observations you make while observing the prepared slide of an onion peel.

13. The combined effort of which two tissues enables the animals to move in response to stimuli.

14. Read the statements carefully and select the appropriate option given from the general instructions
Assertion: Cotyledons are called seed leaves
Reasoning: In many instances cotyledons emerge and become green when the seed germinates.

15. In a spring balance the space between 0 and 50g marks is divided into 10 equal parts. What is the least count of spring balance? 1

16. Name the physical quantity that measures the state of inertia. Write its S.I. unit. 1

17. The Mass of object A is 60Kg whereas that of another object B is 34Kg. Which of the objects, A or B, has more inertia and why? 1

18. What is meant by melting point? What happens to the melting point of ice when salt is added to it?

19. Define the term compound. Give one example.

20. Evaporation leads to cooling. Why?

Section - B

21. Two bodies A and B of same mass are moving with velocities v and 3v respectively. Compare their (i) inertia (ii) momentum (iii) the force needed to stop them in the same time. 3

OR

Explain the following:
a) Some of the leaves may get detached from a tree if we vigorously shake its branch.
b) An athlete always runs some distance before taking a jump.
c) While getting down a moving bus, a person moves in the same direction as that of the bus.

22. State Newton's second law of motion. Derive F = ma. 1+2

23. The speedometer readings of a car are shown below. Find the acceleration of the car and its displacement. 3

Time	Speedometer
9:15 am	36 km/h
9:45 am	72 km/h

OR

The following table gives the data about motion of a car:

Time (h)	11.00	11.30	12.00	12.30	1.00
Distance (km)	0	30	30	66	100

a) Find the speed of the car between 12.00 hours and 12.30 hours.
b) What is the average speed of the car?
c) Is the car's motion an example of uniform motion? Justify.

24. a) What do you mean by terms solute and solvent?
b) Give two properties of a solution.

OR

a) Name the two types of pure substances.
b) Write two properties of gases.

25. Name & draw the apparatus you would use to separate a mixture of oil & water. Write the principle of the separation method.

26. What is meant by the term concentration?
a) 20g sugar is added to 140g water and stirred to get a solution. Find the percentage mass concentration of the solution.

OR

a) What is a saturated solution? What happens when it is heated?
b) Name the solute present soda water?
c) Name the process by which we separate a mixture of ammonium chloride & sand.

27. a. The flexibility of which part of the cell in Amoeba helps them to obtain food. Name the process.
b. Describe how organisms like Fungi and Amoeba can withstand very dilute external medium.
c. Name the process by which gaseous exchange take place through the cell.

OR

Write any two functions of Endoplasmic reticulum.
Specify one function each of RER and SER

28. Differentiate cryptogams and phanerogams.

29. Write the specific characters and functions of epidermis in leaves, roots and in desert plants.

30. What are the three basis on which Plant kingdom is further classified?

31. a) Draw velocity – time graph for a uniformly accelerated object. Using Velocity- time graph, derive $S = Ut + \frac{1}{2} at^2$. 3+2

b) A train is travelling at a speed of 72kmph. Brakes are applied so as to produce a uniform acceleration of $-0.5ms^{-2}$. Find how far the train will go before it is brought to rest?

(OR)

a) Draw velocity –time graph for an uniformly accelerated object. Using Velocity-time graph, derive $V^2 - U^2 = 2aS$.

b) A racing car has a uniform acceleration of $4ms^{-2}$. What distance will it cover in 10 sec after start?

32. a) Define recoil velocity. Derive an expression for recoil velocity. 3+2
b) A bullet of mass 40g is horizontally fired with a velocity $200ms^{-1}$ from a pistol of mass 4Kg. What is the recoil velocity of the pistol?

33. a) Write three differences between evaporation and boiling
b) Write four factors which can affect the speed of evaporation.
c) Name the physical state in which the particles possess:
i) minimum attraction
ii) minimum kinetic energy
iii) maximum space

OR

a) Write 3 characteristics of particles of matter.
b) Explain why
i) liquids have definite volume but no definite shape.
ii) diffusion is fastest in gases.
c) What is dry ice? What happens when it is exposed to air?

34. a) What are the components of a colloid? Write two properties of a colloid.
b) Give one example for a
i) metalloid ii) liquid non-metal
c) Classify the following substances in to elements , compounds & mixtures:
salt, sugar, butter, mercury

35. Write the specific characters of connective tissues? (any two)
Write the function, composition and location of any two connective tissues.

OR

a) Compare and contrast skeletal and smooth muscles based on their structure, function and location.
b) Write the function of cartilage tissue. Write two areas where areolar connective tissue is present.

36. Draw a neat diagram of plant cell with all cell inclusions.
Label the following parts in it
a) Cell wall
b) Golgi apparatus
c) Rough endoplasmic reticulum
d) Nucleus
Which are the two organelles having their own DNA and ribosomes.

End of the Question Paper