ARMY PUBLIC SCHOOL,DAGSHAI

CLASS-9TH

SUBJECT-SCIENCES(BIOLOGY)

HOLIDAYS HOMEWORK

1.The term cell was given by

a)Robert hooke

b)Tatum

c)Schwann

d)De bary

2. The cell is not applied for

a)Algae

b)Bacteria

c)Virus

d)Fungi

3.A plant cell is mainly composed of

a)Protein

b)cellulose

c)lipid

d)starch

4.who proposed the cell theory

a)singer and Nicholson

b)schwaan and schleiden

c)hook and brown

d) Robertson

5. Who proposed that new cells arise from pre existing cells?

a)Robert hooke

b)Rudolf Virchow

c)Robert brown

d)singer

6.Cell wall is present on the outer side of

a)cell membrane

b)cytoplasm

c)middle lamella

d)nucleus

7.Cell membrane is found

a)only in plant cells

b)only in animal cells

c)only in bacterial cells

d)in all types of cells

8.The process of movement of solvent from high to low concentration is called as

a)osmosis

b)diffusion

c)plasmolysis

d)transport

9.Cell wall is not found in

a)plant cell

b)animal cell

c)bacterial cell

d)fungal cell

10.Plasma membrane is mainly composed of

a)carbohydrates

b)lipids and proteins

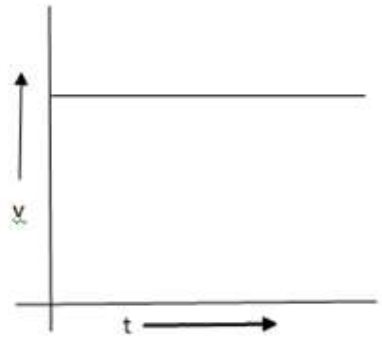
c)nucleic acids

d)proteins only

Physics Holidays Home work 2024
MCQs 01 Chapter 07: Motion

1. If the displacement of an object is proportional to square of time, then the object moves with:
   (a) Uniform velocity
   (b) Uniform acceleration
   (c) Increasing acceleration
   (d) Decreasing acceleration

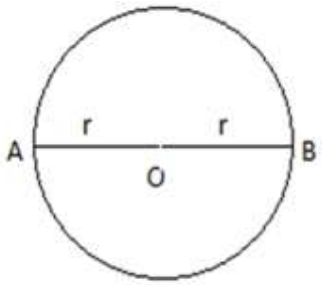
2. From the given v-t graph, it can be inferred that the object is



   (a) At rest
   (b) In uniform motion
   (c) Moving with uniform acceleration
   (d) In non-uniform motion

3. Suppose a boy is enjoying a ride on a marry-go-round which is moving with a constant speed of 10 m/s. It implies that the boy is:
   (a) At rest
   (b) Moving with no acceleration
   (c) In accelerated motion
   (d) Moving with uniform velocity

4. A particle is moving in a circular path of radius r.



   The displacement after half a circle would be:
   (a) Zero (b) πr (c) 2r (d) 2πr

5. Which of the following can sometimes be 'zero' for a moving body?
   i. Average velocity
   ii. Distance travelled

iii. Average speed

iv. Displacement

(a) Only (i)

(b) (i) and (ii)

(c) (i) and (iv)

(d) Only (iv)

6. Which of the following statement is correct regarding velocity and speed of a moving body?

(a) Velocity of a moving body is always higher than its speed

(b) Speed of a moving body is always higher than its velocity

(c) Speed of a moving body is its velocity in a given direction

(d) Velocity of a moving body is its speed in a given direction

7. When a car driver travelling at a speed of 10 m/s applies brakes and brings the car to rest in 20 s, then the retardation will be:

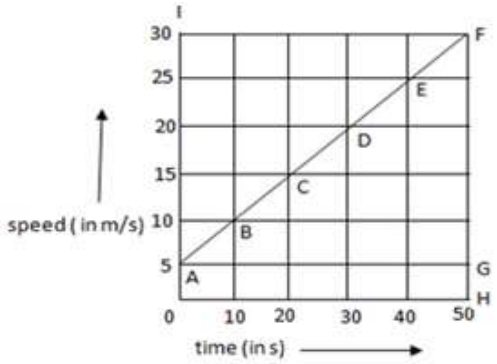
(a) + 2 m/s^2

(b) − 2 m/s^2

(c) − 0.5 m/s^2

(d) + 0.5 m/s^2

8. The speed – time graph of a car is given here. Using the data in the graph calculate the total distance covered by the car.



(a) 1250 m (b) 875 m (c) 1500 m (d) 870 m

9. A car of mass 1000 kg is moving with a velocity of 10 m/s. If the velocity-time graph for this car is a horizontal line parallel to the time axis, then the velocity of the car at the end of 25 s will be:

(a) 40 m/s

(b) 25 m/s

(c) 10 m/s

(d) 250 m/s

10. Which of the following is most likely not a case of uniform circular motion?

(a) Motion of the earth around the sun

(b) Motion of a toy train on a circular track

(c) Motion of a racing car on a circular track

(d) Motion of hours' hand on the dial of a clock

on a circular track

11. In which of the following cases of motions, the distance moved and the magnitude of the displacement are equal?

i. If the car is moving on a straight road

ii. If the car is moving in circular path

iii. The pendulum is moving to and fro

iv. The earth is moving around the sun

(a) only(ii)

(b) (i) and (iii)

(c) (ii) and (iv)

(d) only (i)

12. A car is travelling at a speed of 90 km/h. Brakes are applied so as to produce a uniform acceleration of –0.5 m/s^2. Find how far the car will go before it is brought to rest?

(a) 8100 m

(b) 900 m

(c) 625 m

(d) 620 m

13. In a free fall the velocity of a stone is increasing equally in equal intervals of time under the effect of gravitational force of the earth. Then what can you say about the motion of this stone? Whether the stone is having:

(a) Uniform acceleration

(b) Non-uniform acceleration

(c) Retardation

(d) Constant speed

14. The numerical ratio of displacement to distance for a moving object is:

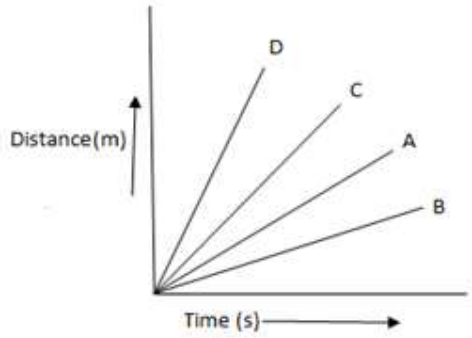
(a) Always less than 1

(b) Equal to 1 or less than 1

(c) Always more than 1

(d) Equal to 1 or more than one

15. Four cars A, B, C and D are moving on a levelled, straight road. Their distance time graphs are shown in the figure below. Which of the following is the correct statement regarding the motion of these cars?



(a) Car A is faster than car D
(b) Car B is the slowest
(c) Car D is faster than car C
(d) Car C is the slowest

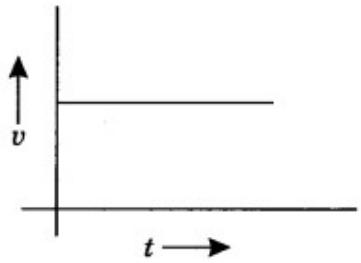
16. A particle is moving in a circular path of radius r. The displacement after half a circle would be:
(a) Zero
(b) πr
(c) 2r
(d) 2πr

17. A body is thrown vertically upward with velocity u, the greatest height h to which it will rise is,
(a) ulg
(b) u^2l2g
(c) u^2lg
(d) ul2g

18. The numerical ratio of displacement to distance for a moving object is
(a) always less than 1
(b) always equal to 1
(c) always more than 1
(d) equal or less than 1

19. If the displacement of an object is proportional to square of time, then the object moves with
(a) uniform velocity
(b) uniform acceleration
(c) increasing acceleration
(d) decreasing acceleration

20. From the given υ – t graph, it can be inferred that the object is



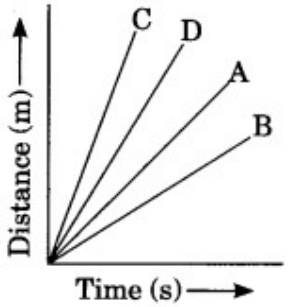
(a) in uniform motion
(b) at rest
(c) in non-uniform motion
(d) moving with uniform acceleration

21. Suppose a boy is enjoying a ride on a merry-go-round which is moving with a constant speed of 10 m/s. It implies that the boy is
(a) at rest
(b) moving with no acceleration

(c) in accelerated motion
(d) moving with uniform velocity

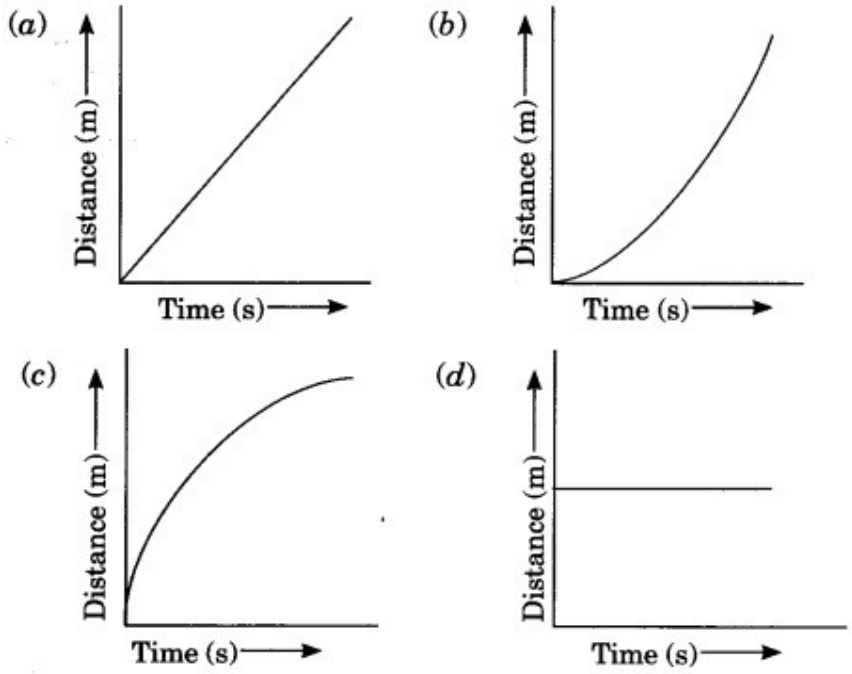
22.Area under a υ-t graph represents a physical quantity which has the unit
(a) m^2
(b) m
(c) m^3
(d) ms^{-1}

23. Four cars A, B, C and D are moving on a levelled road. Their distance versus time graphs are shown in the adjacent figure. Choose the correct statement.



(a) Car A is faster than car D.
(b) Car B is the slowest.
(c) Car D is faster than car C.
(d) Car C is the slowest.

24. Which of the following figures correctly represents uniform motion of a moving object?



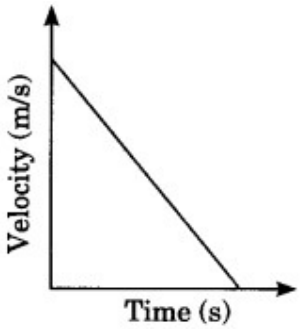
25. Slope of a velocity-time graph gives
(a) the distance
(b) the displacement

(c) the acceleration
(d) the speed

26. In which of the following cases of motions, the distance moved and the magnitude of displacement are equal?
(a) If the car is moving on a straight road
(b) If the car is moving in Circular path
(c) The pendulum is moving to and fro
(d) The earth is revolving around the sun.

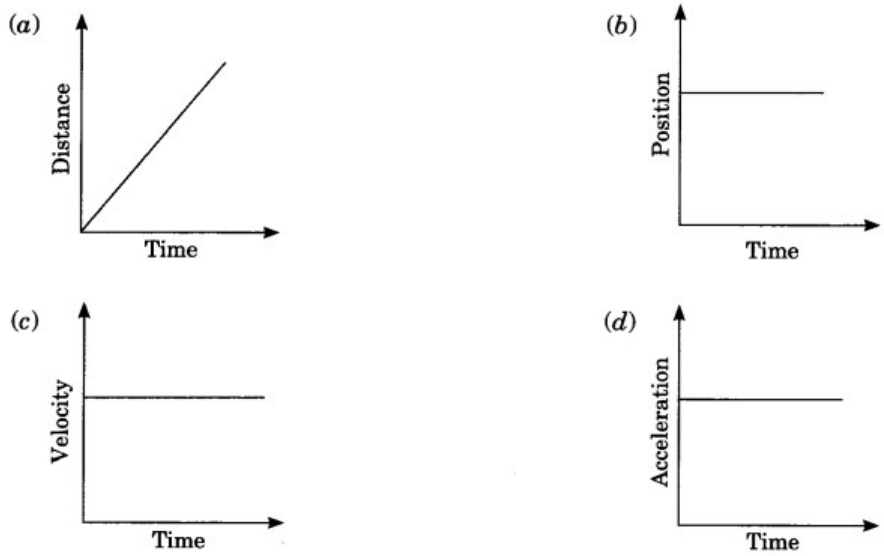
27. A boy goes from A to B with a velocity of 20 m/min and comes back from B to A with a velocity of 30 m/min. The average velocity of the boy during the whole journey is
(a) 24 m/min
(b) 25 m/s
(c) Zero
(d) 20 m/min

28. Velocity-time graph of an object is given below. The object has



(a) Uniform velocity
(b) Uniform speed
(c) Uniform retardation
(d) Variable acceleration

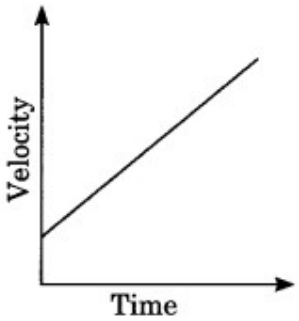
29. Which one of the following graphs shows the object to be stationary?



30. A body is projected vertically upward from the ground. Taking vertical upward direction as positive and point of projection as origin, the sign of displacement of the body from the origin when it is at height h during upward and downward journey will be

(a) Positive, positive
(b) Positive, negative
(c) Negative, negative
(d) Negative, positive

31. According to the given velocity-time graph, the object

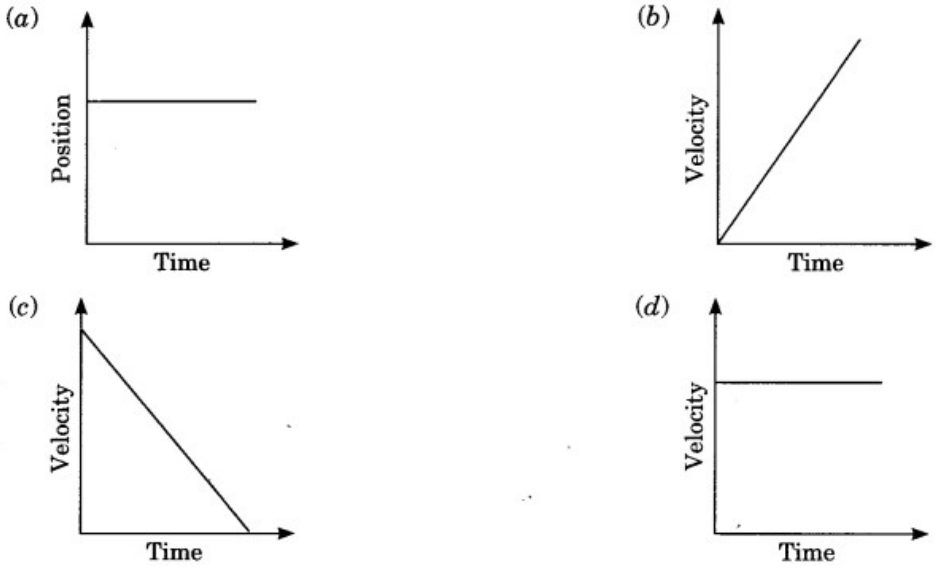


(a) is moving with uniform velocity
(b) has some initial velocity
(c) is moving uniformly with some initial velocity
(d) is at rest

32. The ratio of speed to the magnitude of velocity when the body is moving in one direction is

(a) Less than one
(b) Greater than one
(c) Equal to one
(d) Greater than or equal to one

33. A car is moving along a straight road with uniform velocity. It is shown in the graph.



34. Which of the following situations is possible?

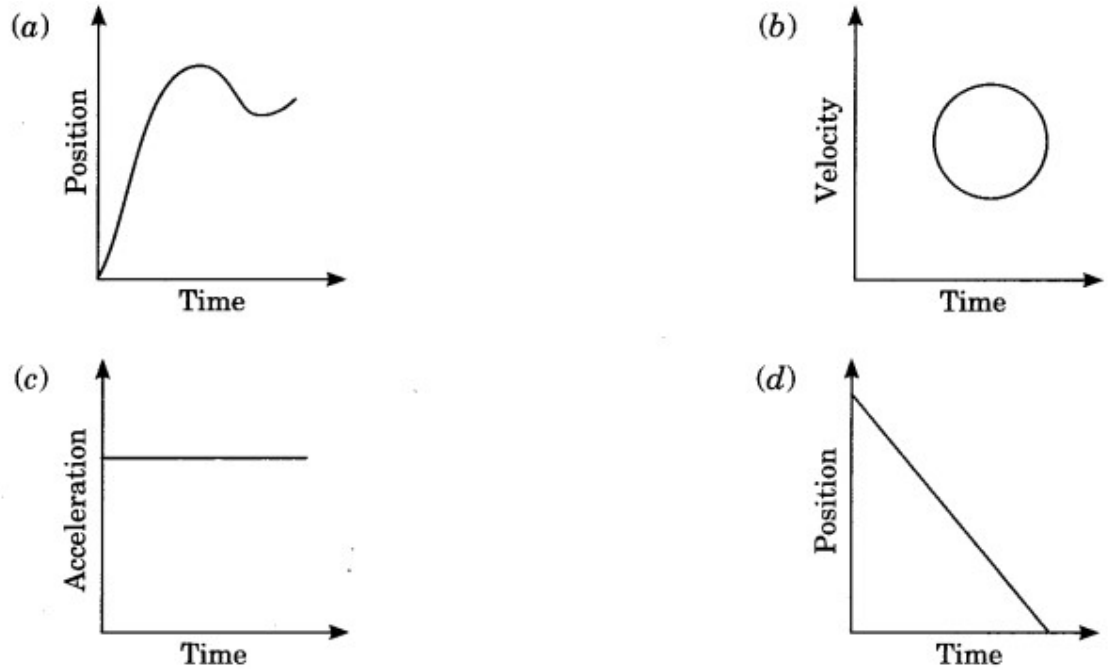
(a) An object can have acceleration, but constant velocity.

(b) The velocity of an object may be zero but acceleration is not zero.

(c) Distance and the magnitude of displacement are equal in circular motion.

(d) Average speed and the magnitude of average velocity are always equal in circular motion.

35. Which of the following graphs is not possible?



Fill in the blanks:

1. The total path length travelled by a body in a given interval of time is called …….
2. A body moving in a straight line has a uniform motion if it travels ……. distance in ……. intervals of time.
3. Velocity is defined as ……. per unit time.
4. Speed is scalar quantity and velocity is …… quantity.
5. If speed of a body is continuously decreasing, the body is said to ……
6. Acceleration is vector quantity and its SI unit is ……..
7. A physical quantity that has magnitude as well as ……. is called vector quantity.
8. The slope of velocity-time graph gives …….. and the slope of displacement-time graph gives ……..

III. Match the following columns

Column I	Column II
(a) Straight line parallel to time axis in velocity-time graph	(i) Scalar quantity
(b) Distance	(ii) Body at rest

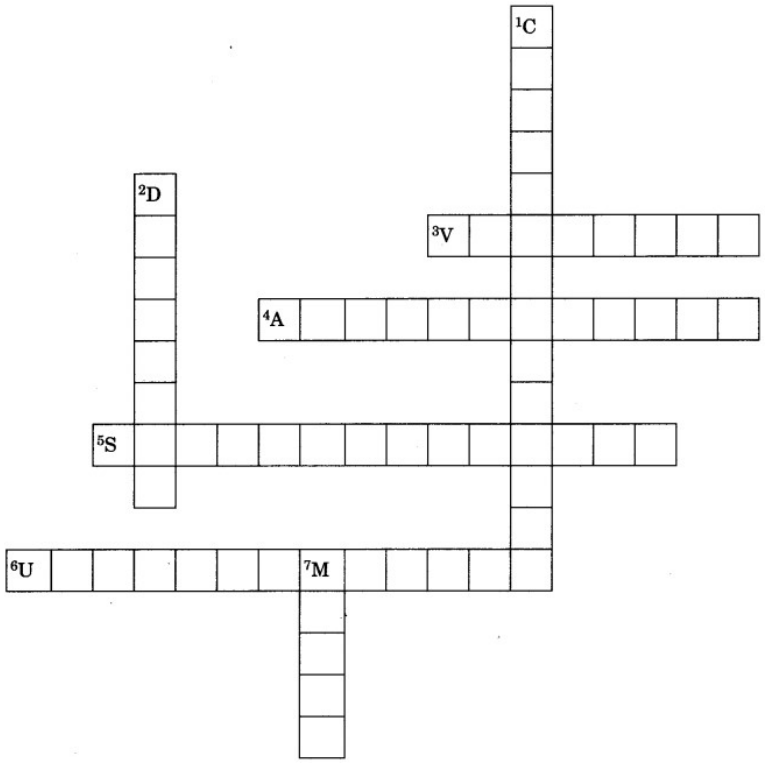
(c) Displacement	(iii) Motion of object in circular path with uniform speed
(d) Straight line parallel to time axis in position time graph	(iv) Body in uniform motion
(e) Uniform circular motion	(v) Rate of change of velocity with respect to time
(f) Slope of velocity-time graph gives	(vi) Shortest distance between initial and final position
(g) Acceleration	(vii) Acceleration

Answer

Answer:

Column I	Column II
(a) Straight line parallel to time axis in velocity-time graph	(i) Scalar quantity
(b) Distance	(ii) Body at rest
(c) Displacement	(iii) Motion of object in circular path with uniform speed
(d) Straight line parallel to time axis in position time graph	(iv) Body in uniform motion
(e) Uniform circular motion	(v) Rate of change of velocity with respect to time
(f) Slope of velocity-time graph gives	(vi) Shortest distance between initial and final position
(g) Acceleration	(vii) Acceleration

Complete the crossword given below:



Across:

3. Displacement per unit time
4. Rate of change of velocity
5. A physical quantity which is described completely by its magnitude only
6. If a body travels equal distance in equal intervals of time in straight line then motion is

Down:

1. Motion of body in circular path
2. Area of speed-time graph gives
7. SI unit of distance and displacement

Answer

Answer:

Across:

3. Velocity 4. Acceleration 5. Scalar quantity 6. Uniform motion

Down:

1. Circular motion 2. Distance 7. Metre

MCQs 02 Chapter 07: Motion

1. Which of the following statement is correct regarding velocity and speed of a moving body?
   (a) Velocity of a moving body is always higher than its speed
   (b) Speed of a moving body is always higher than its velocity
   (c) Speed of a moving body is its velocity in a given direction
   (d) Velocity of a moving body is its speed in a given direction

2. The slope of the distance-time graph is:
   (a) Distance (b) acceleration (c) Speed (d) Displacement

3. For a body performing motion with uniform speed, the distance-time graph is:
   (a) Straight line parallel to y-axis
   (b) Straight line inclined to the time axis
   (c) Straight line parallel to x-axis
   (d) Curved line

4. Which of the following is a correct measure of velocity?
   (a) 30 s (b) 30 m/s (c) 30 South (d) 30 m/s, South

5. An object travels 20 m in 5 sec and then another 40 m in 5 sec. What is the average speed of the object?
   (a) 6 m/s (b) 2 m/s (c) 12 m/s (d) 0 m/s

6. A body moves in a uniform circular motion
   (a) it is moving with constant velocity.
   (b) its acceleration is zero
   (c) the body has an acceleration
   (d) none of these

7. The S.I. unit of acceleration is:

(a) ms^{-2} (b) ms (c) ms 2 (d) m

8. What is the average velocity of a car that moved 60 km in 3 hours?

(a) 60 km/h (b) 20 km/h (c) 30 km/h (d) 10 km/h

9. Which of the following situations are not possible?

(a) A body moving with constant acceleration but with zero velocity.

(b) A body moving horizontally with an acceleration in vertical direction

(c) A body moving with a constant velocity in an accelerated motion

(d) All of these

10. A boy throws a ball up and catches it when the ball falls back. In which part of the motion the ball is accelerating?

(a) During downward motion

(b) When the ball comes to rest

(c) During upward motion

(d) When the boy catches the ball

11. Choose the correct option:

(a) distance is a scalar, velocity is a vector, acceleration is a vector.

(b) distance is a vector, velocity is a scalar, acceleration is a vector.

(c) distance is a vector, velocity is a vector, acceleration is a vector.

(d) distance is a scalar, velocity is a vector, acceleration is a scalar.

12. Name the instrument used to measure instantaneous speed of a vehicle

(a) multi meter

(b) ammeter

(c) speedometer

(d) accelerator

13. 180° plane angle is equal to

(a) π/2 radian (b) π radian (c) 2π radian (d) none of these

14. The area under the speed-time graph gives the _____.

(a) velocity (b) distance (c) acceleration (d) time

15. 1 km/ h = _____ m/s

(a) 3/50 (b) 18/5 (c) 50/3 (d) 5/18

16. The ratio of the heights from which two bodies are dropped is 3:5 respectively. The ratio of their final velocities is:

(a) 9: 25 (b) √ 3: √ 5 (c) 5: 3 (d) √5: √3

17. The speed at any instant of time is known as

(a) velocity
(b) given speed
(c) average speed
(d) instantaneous speed

18. A racing car has a uniform acceleration of 6 m/s2. In 10s it will cover:
(a) 300m (b) 100m (c) 200m (d) 350m

19. A body starts to slide over a horizontal surface with an initial velocity of 0.2 m/s. Due to friction, its velocity decreases at the rate of 0.02 m/s 2. How much time will it take for the body to stop?
(a) 10s (b) 15s (c) 1s (d) 5s

20. The equations of motion can be derived by using:
(a) Distance – time graph
(b) Velocity – time graph for non-uniform acceleration
(c) Displacement time graph
(d) Velocity – time graph for uniform acceleration

21. A man is moving with 36 kmph. The time of reaction is 0.9 seconds. On seeing an obstacle in the path, he applies brakes and decelerates at 5 m/s^{-2}, the total distance covered before he stops is:
(a) 19 m (b) 17 m (c) 16 m (d) 18 m

22. Speed of a body in particular direction can be called
(a) acceleration
(b) displacement
(c) velocity
(d) distance

23. The ratio of C.G.S. to M.K.S. unit of acceleration is:
(a) 1:10 (b) 1:1 (c) 1:100 (d) 10:1

29. Distance covered by a body from velocity-time graph is equal to:
(a) the slope of the graph.
(b) Area under the graph.
(c) Is denoted by a line parallel to the time axis at any point on the distance axis.
(d) Is denoted by a line parallel to the distance axis at any point on the time axis.

30. A body performs an accelerated motion, with uniform speed. The motion of body is
(a) Linear (b) Circular (c) Parabolic (d) Irregular

31. The slope of distance – time graph gives instantaneous.
(a) acceleration (b) speed (c) velocity (d) Distance covered

32. _____ describes how fast something is going, whereas, _____ describes how fast something is going in a certain direction.

(a) rate, velocity (b) rate, speed (c) speed, velocity (d) speed, acceleration

33. If a moving body comes to rest, then its acceleration is-
    (a) positive
    (b) both of these depending upon the initial velocity
    (c) negative
    (d) zero

34. If car A is at 40 km/h and car B is at 10 km/h in the opposite direction, what is the velocity of the car A relative to the car B?
    (a) 40 km/h (b) 50 km/h (c) 10 km/h (d) 30 km/h

35. Speed of 90 km/h when expressed in m/s is
    (a) 2.5 (b) 90000 (c) 250 (d) 25

36. A body is moving with a velocity of 10m/s. If the motion is uniform, what will be the velocity after 10 second?
    (a) 15m/s. (b) 5m/s (c) 10m/s (d) 20m/s

37. A body is said to be in rest when
    (a) its position doesn't change with time with respect to the observer.
    (b) body moves in uniform motion w.r.t observer
    (c) its position changes with time w.r.t observer.
    (d) none of these

38. If you whirl a stone on the end of the string and the string suddenly breaks, the stone will:
    (a) Fly off along the tangent to its circular path.
    (b) Fly directly towards you.
    (c) Spiral away from your hand.
    (d) Spiral in towards your hand.

CLASS IX English H.W

1. Design a Comic Strip depicting a conversation between a tourist and a local resident of Lakshadweep or Andaman and Nicobar Islands discussing various aspects /tourist attractions of the place.
   OR
2. Design a school newspaper highlighting the major attractions of your school. Include the basic overview of the school structure and its goals. The newspaper content should be handwritten/drawn. You may include the following sections: • Infrastructure • Academic Goals • Sports • Major attractions • House Achievements • School Assembly

Hindi

Write the first five paragraphs and informal letters of your Grammar book in a thin notebook.

योग्यता-विस्तार

1. इस पाठ में आए दस अंग्रेज़ी शब्दों का चयन कर उनके अर्थ लिखिए।
2. पर्वतारोहण से संबंधित दस चीज़ों के नाम लिखिए।
3. तेनजिंग शेरपा की पहली चढ़ाई के बारे में जानकारी प्राप्त कीजिए।
4. इस पर्वत का नाम 'एवरेस्ट' क्यों पड़ा? जानकारी प्राप्त कीजिए।

परियोजना कार्य

1. आगे बढ़ती भारतीय महिलाओं की पुस्तक पढ़कर उनसे संबंधित चित्रों का संग्रह कीजिए एवं संक्षिप्त जानकारी प्राप्त करके लिखिए–
   (क) पी.टी. उषा
   (ख) आरती साहा
   (ग) किरण बेदी

Do these activities in Activity Sheet

Social Science

India-Size and Location Class 9 Geography Chapter 1

1. The total length of the coastline of the mainland including Andaman and Nicobar and Lakshadweep is _____ .

2. The neighboring countries that share their boundaries with India are _____

3.What is the longitudinal extent of India ?

4. What is the latitudinal extent of India ?

5.Which is the smallest state in India ?

6. The north-south extent of India is about _____ .

7. Which states does not share any international boundary ?

8.Which canal has reduced India's distance from Europe by 7,000 km ?

9. What influences the duration of the day and night as one moves from south to north ?

10. Which ocean has been named after a country ?

11.China is the _____ largest country in the world ?

12. What is the rank of India in Area?

13.From Gujarat to Arunachal Pradesh, the time lag is _____ .

14.The southernmost point of Indian mainland is _____ .

15.Suez Canal was opened in the year.....

History French revolution

1. When did the French Revolution begin?
2. Which event is often considered the start of the French Revolution?
3. Who was the king of France during the French Revolution?
4. The French Revolution was primarily triggered by:

a) Economic inequality

b) Religious conflict

c) Foreign invasion

d) Cultural differences

5. What was the primary goal of the National Assembly during the French Revolution?

a) Abolition of monarchy

b) Expansion of the French Empire

c) Reformation of the Catholic Church

d) Strengthening the power of the nobility

6. The Tennis Court Oath took place in response to:

a) The execution of Louis XVI

b) The Storming of the Bastille

c) The dissolution of the Estates-General

d) The outbreak of the Reign of Terror

7. Which document proclaimed the rights of individuals and citizens during the French Revolution?

8. The Reign of Terror in France was led by: …..

9. The storming of the Bastille occurred on:…….

10. What was the significance of the storming of the Bastille?

a) It marked the beginning of the French Revolution

b) It led to the coronation of Napoleon Bonaparte

c) It resulted in the capture of King Louis XVI

d) It signaled the end of the Reign of Terror

11. Who were the sans-culottes during the French Revolution? a) Wealthy merchants b) Peasants and workers c) Aristocrats d) Clergy

12. Which revolutionary leader was known as "the Incorruptible"? a) Georges Danton b) Maximilien Robespierre c) Jean-Paul Marat d) Louis Antoine de Saint-Just

13. Which of the following was NOT a factor contributing to the economic crisis in France before the Revolution? a) High taxes on the clergy and nobility b) Expensive wars c) Poor harvests and food shortages d) Abolition of serfdom

14. What was the fate of King Louis XVI during the French Revolution? a) Exile to England b) Imprisonment in the Bastille c) Execution by guillotine d) Abdication and escape to Austria

15. Which revolutionary government body held power during the Reign of Terror?

a) National Convention

b) National Assembly

c) Directory

d) Committee of Public Safety

What is Democracy? Why Democracy?

1.What does a candidate need before contesting elections in China?

2.In a democracy, the final decision must rest with those leaders or representatives who are _____ .

3.Give a definition of democracy.

4.It is a system in which only those who are in power and their supporters are benefited, and excludes minorities and weaker sections.

5.It Is a system under which military chief enjoys all the powers and suppress all the protests against him by the people.

6.The strength of democracy is its ability to uphold the values for which it stands for. These values are _____ .

7. Who led a military coup in Pakistan in 1999?

8.When did Zimbabwe attain independence and from whom?

9.In which period did China face one of the worst famines that have occurred in the world?

10.Democracy improves the quality of decision-making because

11.What is the most common form of democracy in modern world?

12.Which body in the Indian political system is an example of direct democracy?

13.What is ZANU-PF?

14.Name the Chinese Parliament.

25.Name the country where women do not have the right to vote till 2015.

People as Resource

1.Activities like agriculture, forestry, animal husbandry, fishing, poultry farming and mining are part of _____ .

2.Quarrying and manufacturing is included in the _____ .

3.What do you mean by 'death rate' ?

4.The activities that result in the production of goods and services and add value to the national income are called _____ .

4.Economic activities are basically of two types _____ .

5.Activities which include production of goods or services, including government service and are performed for pay or profit, are called _____ .

6. What is Population of India s per 2021 census?

7.Our national policy aims at improving the _____ .

8.The workforce population of India includes people from the age group of _____ .

9.When does population become human capital ?

10.What do you understand by the term 'National Income' ?

11.What is Infant Mortality Rate ?

12. What do you understand by the term "Sarva Siksha Abhiyan"?

13.What does increase in longevity of life indicate?

14.What do you mean by "Birth Rate"?

15.What is the main purpose of mid-day meal scheme?

Mathematics

PRACTICE QUESTIONS

CHAPTER 1 and 2

1 One of the linear factors of $3x^2+8x+5$ is
a. (x+1)
b. (x-2)
c. (x+2)
d. (x-4)
2 Find the value of 7^2-5^2.
a. 22
b. 23
c. 24
d. 25
3 If $x^2+kx+6 = (x+2)(x+3)$ for all k, find the value of k.
a. -1
b. 1
c. 3
d. 5
4 If $p(x)= x^2 – 2\sqrt{2}x + 1$, then $p(2\sqrt{2})$ is equal to
(A) 0
(B) 1
(C) $4\sqrt{2}$
(D) $8\sqrt{2} +1$
5 If $p(x) = x + 3$, then $p(x) + p(–x)$ is equal to on
(A) 3
(B) 2x
(C) 0
(D) 6
6 One of the zeroes of the polynomial $2x^2 + 7x –4$ is
(A) 2
(B) ½
(C) – ½
(D) –2
7 In between two rational number there is/are:
a) Exactly one rational number
b) Infinitely many rational number
c) Many irrational numbers
d) Only irrational numbers
8 The product of a rational and an irrational numbers is:
a) Always an integer
b) Always a rational number
c) Always an irrational number
d) Sometimes rational and sometimes irrational
8 The decimal expansion of an irrational number may be:
a) Terminating
b) Recurring
c) Either terminating or non-terminating
d) Non-terminating and non-recurring
9 A rational number between √2 and √3:
a) 1.9
b) (√2. √3)/2
c) 1.5
d) 1.8
10 Value of $(256)^{0.16}$ X $(256)^{0.09}$ is:
a) 4
b) 16
c) 64
d) 256.25
11 √3 is a polynomial of degree:
a) 2
b) 0
c) 1
d) 1/2
12 Degree of the polynomial $7x^5 + 8x^2 - 5x + 3$ is:
a) 1
b) 3
c) 2
d) 5

13. The product $\sqrt[3]{2} \cdot (2)^{-1/3} \cdot$

a) $\sqrt[12]{32}$

b) $\sqrt[12]{2}$

c) $\sqrt{2}$

d) 2

14. If $\sqrt{3} = 1.732$, then $\sqrt{\frac{\sqrt{3}-1}{\sqrt{3}+1}}$ i

a) 2.732
b) 0.2679
c) 0.732
d) 0.517

15. If $81y^2 - k = \left(9y + \frac{1}{2}\right)\left(9y - \frac{1}{2}\right)$, th

a) 0
b) 1/4
c) 1/2
d) $1/\sqrt{2}$

16 If $y^{97} + 97$ is divided by y + 1, the remainder is:
a) 0
b) 1
c) 95
d) 96

17 If x + 1 is a factor of the polynomial $2x^2 + kx$, then the value of k is:
a) -3
b) 4
c) 2
d) -2

18 The value of $99^2 - 98^2$ is:
a) 1
b) 197
c) 187
d) 207

19 One of the factors of $(1 + 7x)^2 + (49x^2 - 1)$ is:
a) x – 7
b) 7 – x
c) 7x – 1
d) 14x

20 The factorization of $6x^2 + 11x + 3$ is:
a) (3x + 1) (2x + 3)
b) (x + 1) (2x + 3)
c) (x + 3) (2x + 1)
d) (3x + 3) (x + 1)

21 The zero of the polynomial p(x) = -9x + 9is:
a) 0
b) -9
c) -1
d) 1

14. If $\frac{a}{b} + \frac{b}{a} = -1 (a, b \neq 0)$, the value of $a^3 - b^3$ is:
a) 1
b) –1
c) 0
d) ½

23 A polynomial with one degree is called:
a) Linear polynomial
b) Quadratic polynomial
c) Monomial
d) Binomial

24 The value of the polynomial $7x^4 + 3x^2 - 4$, when x = - 2 is:
a) 100
b) 110
c) 120
d) 130

25 √12 X √15 is equal to:
a) 5√6
b) 6√5
c) 10√5
d) √25

26 The coefficient of x^2 in $3x^3+2x^2-x+1$ is:
a. 1
b. 2
c. 3
d. -1

27 The value of $p(t) = 2+t+2t^2-t^3$ when t=0 is
a. 2
b. 1
c. 4
d. 0

28 If $x^2+kx+6 = (x+2)(x+3)$ for all k, find the value of k.

a. -1
b. 1
c. 3
d. 5

29 If $(3^x.9^y) = 9$ and $(25^x.125^y) = 25$, then find (x, y).

1. -2, 2
2. 2, -2
3. -2, 3
4. More than one of the above

30 The zeros of the cubic polynomial $x^3 – 12x^2 + 47x - 60$ are a, b and c respectively, then, (ab + bc + ca) is equal to –

1. 43
2. 45
3. 42
4. 47

31 If x = 3 is a root of the polynomial, $f(x) = 4x^3 + 2x^2 + 5x - a$. Find the value of a.

1. 123
2. 141
3. 136
4. 155

32 If one of the zeros of the quadratic polynomial $(k - 1)x^2 + kx + 1$ is -3, then the value of k is:

1. -2/3
2. 2/3
3. -4/3
4. 4/3

33 Which one is not a polynomial

(a) $4x^2 + 2x – 1$

(b) $y + \frac{3}{y}$

(c) $x^3 – 1$

(d) $y^2 + 5y + 1$

34 The polynomial $px^2 + qx + rx^4 + 5$ is of tyep

(a) linear

(b) quadratic

(c) cubic

(d) Biquadratic

35 Identify the polynomial

(a) $x^{-2} + x^{-1} + 5$

(b) $x^2 + 5\sqrt{x} + 7$

(c) $\frac{1}{x^3} + 7$

(d) $3x^2 + 7$

36 The zero of the polynomial $p(x) = 2x + 5$ is

(a) 2

(b) 5

(c) $\frac{2}{5}$

(d) $-\frac{5}{2}$

37 The number of zeros of $x^2 + 4x + 2$

(a) 1

(b) 2

(c) 3

(d) none of these

38 The polynomial of type $ax^2 + bx + c$, $a = 0$ is of type

(a) linear

(b) quadratic

(c) cubic

(d) Biquadratic

39 The value of k, if $(x – 1)$ is a factor of $4x^3 + 3x^2 – 4x + k$, is

(a) 1

(b) 2

(c) –3

(d) 3

40 The degree of polynomial $p(x) = x + \sqrt{x^2 + 1}$ is

(a) 0

(b) 2

(c) 1

(d) 3

41 If $3 + 5 – 8 = 0$, then the value of $(3)^3 + (5)^3 – (8)^3$ is

(a) 260

(b) –360

(c) –160

(d) 160

42 If value of 104 × 96 is

(a) 9984

(b) 9469

(c) 10234

(d) 11324

43 The value of 5.63 × 5.63 + 11.26 × 2.37 + 2.37 × 2.37 is

(a) 237

(b) 126

(c) 56

(d) 64

44 The value of $\frac{(361)^3+(139)^3}{(361)^2-361\times139+(139)^2}$ is

(a) 300

(b) 500

(c) 400

(d) 600

45 If $x + y = 3$, $x^2 + y^2 = 5$ then xy is

(a) 1

(b) 3

(c) 2

(d) 5

46 If $x + 2$ is a factor of $x^3 – 2ax^2 + 16$, then value of a is

(a) 3

(b) 1

(c) 4

(d) 2

47 If one of the factor of $x^2 + x – 20$ is $(x + 5)$. Find the other

(a) $x – 4$

(b) $x + 2$

(c) $x + 4$

(d) $x – 5$

ARTIFICIAL INTELLIGENCE (417)

Multiple Choice Question:

1. **Individual who is determined to be self-employed, starts his/her own venture with a sense of ownership is called …… .**
   i. Entrepreneur
   ii. Dealer
   iii. Partner
   iv. Customer
2. **Which of the following is an example of e-mail service provider?**
   i. Gmail
   ii. Yahoo
   iii. Hotmail
   iv. All of these
3. **Which of the following methods of communication is used when we write an e-mail to our friend?**
   i. Verbal
   ii. Non verbal
   iii. Both a and b
   iv. None of these

4. **Which of the following options is used to send a received e-mail to someone who was not one of the original recipients?**
   i. Reply
   ii. Forward
   iii. Reply to all
   iv. Delete

5. **Which of the following is a type of natural resource?**
   i. Renewable
   ii. Non Renewable
   iii. Exhaustible
   iv. All of the above
6. **Which of the following in the human brain receive the impulse and pass on to the cell body of the neuron?**
   i. Axons
   ii. Dendrites
   iii. Synapses
   iv. Layers

7. **In ……., the machine is trained with huge amounts of data which helps it in training itself around the data.**
   i. Deep Learning
   ii. Artificial Intelligence
   iii. NLP
   iv. None of the above

8. **The intention of ……. is to enable machines to learn by themselves using the provided data and make accurate Predictions/Decisions.**

i. Machine Learning
ii. Deep Learning
iii. Artificial Intelligence
iv. Neural Networks

9. **Which of the following is not an advantage of a flowchart?**

i. It is an effective way to solve and analyze a problem.
ii. The flowchart makes program or system maintenance easier.
iii. It is used in preparing documentation of an application or a process.
iv. It is a time-consuming process.

10. **What is meant by Artificial Intelligence?**

1. a) Artificial intelligence is defined as a field aiming to make humans more intelligent.
2. b) Artificial intelligence is defined as a field aiming to improve security.
3. c) Artificial intelligence is defined as a field aiming to mine the data.
4. d) Artificial intelligence is defined as a field aiming to develop intelligent machines.

11. Which is considered the branch of Artificial Intelligence?

1. a) Cyber Forensics
2. b) Machine Learning
3. c) Network Design
4. d) Full-stack Developer

12. Blind Search is used for which of the mentioned situations?

1. a) Advanced Game Theory
2. b) Real-life Simulation
3. c) Small Search Space
4. d) None of the above

13. In case a machine is capable of changing its course of action based on the external environment without any external help then the machine is called ____.

1. a) Intelligent
2. b) Mobile
3. c) Both A and B
4. d) None of the above

14. What is the main aim of Artificial Intelligence?

1. a) To solve real-world issues
2. b) To explain different sorts of intelligence
3. c) To solve artificial problems
4. d) To obtain information about scientific causes

15. Who is known as the inventor of Artificial Intelligence?

1. a) Charles Babbage
2. b) John McCarthy
3. c) Alan Turing
4. d) Andrew Ng

Long answer type questions.

1. **Mention features of Mobile Operating system.**

12 **Give three applications of neural networks.**

3. **What is Application Programming Interface (APIs)?**

IX SCIENCE CH_1_ MATTER IN OUR SURROUNDINGS

MCQ s 1 MARK EACH

1. Every matter has its own…… and……..

   a) Mass, volume

   b) Weight, mass

   c) Brittleness, tough

   d) Shape, shadow

2. When Potassium permanganate dissolve in water shows……. a) Red in colour

b) Blue in colour

c) Violet in colour

d) Orange in colour

3. With increasing kinetic energy,

   a) No change in Pressure

   b) Temperature increases

   c) Temperature decreases

   d) Pressure decreases

4. Intermixing of particles of two different types of matter on their own called…….
.A) Dilution

b) Mixing

c) Diffusion

d) Precipitate

5. Which of the following is not a solid.

a) Book

b) Completely cooked Vegetables

c) Completely molten ice

d) Ice bag

6. …….. and …….. gases are essential for the survival of aquatic animals and plants. A) Hydrogen, oxygen

b) Carbon dioxide, nitrogen

c) Oxygen, water

d) Carbon dioxide, oxygen

7. The correct procedure of heating iron-sulphur mixture to prepare iron sulphide is: :

a) Heat the powder mixture at the base of the test tube using a blue flame throughout.

b) Heat the iron filings and sulphur mixture in the middle of the test tube using yellow flame throughout.

c) Heat the powder mixture at the top of the test tube using an orange flame throughout.

D) Heat the iron filings-sulphur mixture at ¾ quarters of the test tube using a red flame throughout.

8. Which one of the following set of phenomena would increase on raising the temperature?

A) Diffusion, evaporation, compression of gases

b) Evaporation, compression of gases, solubility

c) Evaporation, diffusion, expansion of gases

d) Evaporation, solubility, diffusion, compression of gases

9. Which of the following statement is correct?

a) Materials existing as liquids at room temperature have their melting and boiling points lower than that of room temperature.

b) The phenomenon involving the transition of a substance from solid to liquid state is called sublimation.

c) To convert a temperature on the Celsius scale to Kelvin scale, subtract 273 from the given temperature

D) The density of ice is less than that of water.

11. Arrange the following substances in increasing order of forces of attraction between the particles – air, oil, salt

A) Air < oil < salt b) salt < air < oil

d) Oil < salt < air d) air < salt < oil

12.. Which phenomenon is responsible behind the conversion of 1kg of water into water vapour at its boiling point?

13 Calculate the following temperature in degree Celsius. (i) 673 k , (ii) 350 k

14. How can you liquefy gases?

15 What is dry ice?

16. Sponge is solid, but we can still compress it. Why?

17. What happen to the rate of diffusion if the temperature is increased?

18. Name the process which occurs when a drop of dettol is added to water.

19. Name the state of matter in which:

(i) Layers of particles can slip and slide over one another easily.

(ii) Particles just move around randomly because of very weak force of attraction.

20.. How does naphthalene balls reduce its size after sometime when kept in between clothes?

21. Assertion (A): Ice floats on the surface of water.

Reason ®: The density of both water and ice is same.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

22 Name the phenomenon which cause one crystal of potassium permanganate to turn a beaker of water purple

(a) Centrifugation (c) Filtration

(b) Diffusion (d) Sedimentation

23. A glass tumbler containing hot water is kept in the freezer compartment of a refrigerator (temperature <0°C). If you could measure the temperature of the content of the tumbler, which of the following graphs would correctly represent the change in its temperature as a function of time?

24. Analyse the temperature versus time graph of water, given below.

Which region contains all liquids?

25. During summers, water kept in an earthen pot becomes cooler after some time. Which phenomenon leads to the cooling of water in an earthen pot? (a) Diffusion

(c) Transpiration

© Osmosis (d) Evaporation

26.

Latent heat of evaporation of two liquids A and B is 100 J/kg and 150 J/kg respectively. Which one can produce more cooling effect and why?

27. Assertion : A gas can easily be compressed by applying pressure.

Reason:Since the inter-particle spaces between gases are very large, they can decrease by applying pressure.

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

© A is true but R is false.

(c) A is false but R is true.

28. Assertion : Gases exert pressure on the walls of the container.

Reason : The intermolecular force of attraction is very strong in gases.

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

© A is true but R is false.

(c) A is false but R is true.

29. Assertion : The boiling point of water is 100 ˚C.

Reason : The boiling point of water increases at higher altitudes.

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A

(c) A is true but R is false.

d)A is false but R is true.

30. Assertion : Molten ionic solid conducts electricity.

Reason : On melting ions becomes free to move.

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

(d) is false but R is true.

‘