



the best of creative minds

Margdarshan
for JEE (Main & Advanced), NTSE, KVPY, Olympiad
A Division of SHYAM SAI CLASSES PVT. LTD.



HINDUSTAN MARGDARSHAN SCHOLARSHIP TEST-2017-18
SAMPLE PAPER
FOR
CLASS 9th

INSTRUCTIONS

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.
You are not allowed to leave the examination hall before the end of the test.

[A] General :

1. Attempt ALL the questions. Answer have to be marked on the **OMR** sheets
2. This question paper contains **90 questions**.
3. The question paper consists of **THREE Parts Physics, Chemistry & Mathematics**
4. Blank spaces are provided at the bottom of each page for rough work. No additional sheets will be provided for rough work.
5. Blank paper, clipboard, log tabs, silde rules, calculators, cellular phones, pagers and electronic gadgets in any form are **NOT** allowed.
6. Do not Tamper / mutilate the **OMR sheet** or this booklet.
7. Do not break the seals of the question-paper booklet before instructed to do so by the invigilator.
8. **SUBMIT** the OMR sheet to the invigilator after completing the test & take away the test paper with you.

[B] Filling of OMR Sheet :

9. In all the parts, each question will have 4 choices out of which **only one choice is correct**
10. Use only Black/Blue ball point pen for filling the OMR sheet.
11. On the OMR sheet, darken the appropriate bubble for each character of your name, Registration No., Phone No. etc.

[C] Marking Scheme :

12. For each right answer you will be **awarded 3 marks** if you darken the bubble corresponding to the correct answer and **zero marks** if no bubble is darkened. In case of bubbling of incorrect answer, **minus one (-1)** mark will be awarded.

MATHEMATICS

1. The value of k for which $x + k$ is a factor of $x^3 + kx^2 - 2x + k + 4$ is :

- (A) -5 (B) $-\frac{4}{3}$ (C) 2 (D) $\frac{6}{7}$

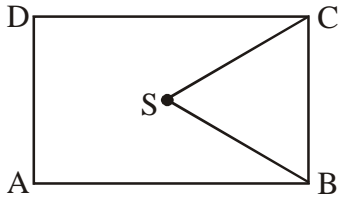
2. If $2 \times (\sqrt{2})^5 \times (\sqrt{2})^{-2/3} = (\sqrt{2})^{x+1}$, then the value of x is :

- (A) $\frac{2}{3}$ (B) $5\frac{1}{3}$
(C) $4\frac{1}{3}$ (D) $1\frac{1}{3}$

3. If a bicycle wheel has 48 spokes then the angle between the adjacent pair spokes is :

- (A) $(7\frac{1}{2})^\circ$ (B) $(7\frac{1}{3})^\circ$
(C) $(6\frac{1}{2})^\circ$ (D) $(6\frac{2}{3})^\circ$

4. If ABCD is a parallelogram, CS and BS are the bisectors of $\angle C$ and $\angle B$ respectively, then the measure of $\angle S$ will be:



- (A) 85° (B) 60°
(C) 90° (D) 45°

5. If $x = 2 + 2^{1/3} + 2^{2/3}$ then $x^3 - 6x^2 + 6x = \dots$

- (A) 3 (B) 2
(C) 1 (D) 0

1. 'k' dsfdl eku dsfy, $x^3 + kx^2 - 2x + k + 4$ dk , d xdu kM x + k gsk

- (A) -5 (B) $-\frac{4}{3}$ (C) 2 (D) $\frac{6}{7}$

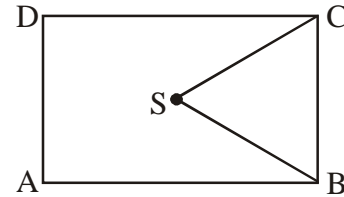
2. ; fn $2 \times (\sqrt{2})^5 \times (\sqrt{2})^{-2/3} = (\sqrt{2})^{x+1}$, rlsx dkeku gsk%

- (A) $\frac{2}{3}$ (B) $5\frac{1}{3}$
(C) $4\frac{1}{3}$ (D) $1\frac{1}{3}$

3. ; fn, d l kdy ds fg se 48 rj, gh m ds v k ur jka dkeè dsk gsk%

- (A) $(7\frac{1}{2})^\circ$ (B) $(7\frac{1}{3})^\circ$
(C) $(6\frac{1}{2})^\circ$ (D) $(6\frac{2}{3})^\circ$

4. ; fn ABCD, d l eaj pr h g SCsv BS Ø'e' % $\angle C$ v $\angle B$ ds ef, Hk d g r s $\angle S$ dkeki gsk



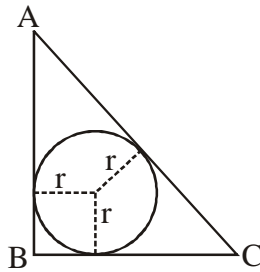
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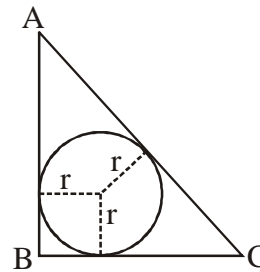
Space for Rough Work

6. 37 pens and 53 pencils together cost Rs. 394 while 53 pens and 37 pencils together cost Rs. 506. The cost of a pen is
 (A) Rs. 9 (B) Rs. 8.50
 (C) Rs. 8 (D) Rs. 9.50
7. If $x^2 - 1$ is a factor of $x^4 + ax^3 + 3x - b$ then
 (A) $a = 3, b = -1$ (B) $a = -3, b = 1$
 (C) $a = 3, b = 1$ (D) None of these
8. The length of a chord of a circle of radius 10 cm. is $10\sqrt{3}$ cm. Its distance from the centre is
 (A) 10 cm. (B) $5\sqrt{3}$ cm.
 (C) 5 cm. (D) $5\sqrt{2}$ cm.
9. The radius of a cylinder is same as that of a sphere. Their volumes are equal. The height of cylinder is n times its radius, then $n = \dots\dots\dots$
 (A) 1 (B) 2
 (C) $\frac{2}{3}$ (D) $\frac{4}{3}$
10. In below figure $\triangle ABC$ is a right angle triangle in which $\angle B = 90^\circ, BC = 6$ cm and $AB = 8$ cm. Then radius of incircle will be—



- (A) 5 cm (B) 4 cm
 (C) 3 cm (D) 2 cm

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Space for Rough Work

11. If $x = \frac{\sqrt{b^2 + ab} + \sqrt{b^2 - ab}}{\sqrt{b^2 + ab} - \sqrt{b^2 - ab}}$, then the value of

$ax^2 - 2bx$ is:

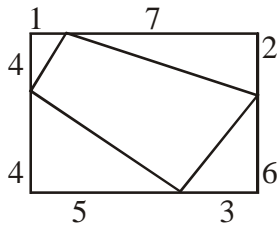
- (A) $-a$ (B) b
 (C) a (D) $-b$

12. If $a + b + c = 0$, then

$\frac{(a+b)^2}{ab} + \frac{(b+c)^2}{bc} + \frac{(c+a)^2}{ca}$ is equal to

- (A) $3\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$ (B) $3abc$
 (C) $3(a+b+c)$ (D) 3

13. The sides of an 8×8 square are cut by certain points into pieces of length 1 and 7, 2 and 6, 3 and 5 and 4 and 4 as shown in figure. The area of the quadrilateral determined by these four points are:



- (A) 28 (B) 8
 (C) 48 (D) 36

14. The area of three adjoining faces of cuboid are A, B and C respectively then its volume will be

- (A) ABC (B) \sqrt{ABC}
 (C) $A^2B^2C^2$ (D) None of these

11. ; fn $x = \frac{\sqrt{b^2 + ab} + \sqrt{b^2 - ab}}{\sqrt{b^2 + ab} - \sqrt{b^2 - ab}}$, rls $ax^2 - 2bx$ dk

eku gsk%

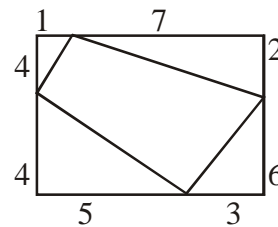
- (A) $-a$ (B) b
 (C) a (D) $-b$

12. ; fn $a + b + c = 0$ rls

$\frac{(a+b)^2}{ab} + \frac{(b+c)^2}{bc} + \frac{(c+a)^2}{ca}$ dk eku gsk%

- (A) $3\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$ (B) $3abc$
 (C) $3(a+b+c)$ (D) 3

13. , d 8×8 Hkkoy soxZ ds f-ku jk fu pr fcl dks s 1 o 7] 2 o 6] 3 o 5 r f k 4 o 4 y fcl ds d M ead k k t k k g S tu p j fcl ds j k cuspr hZ dk { l k Q g s l A



- (A) 28 (B) 8
 (C) 48 (D) 36

14. , d f k k dh rhu l g x i Q d l a d s { l k Q O e' l % A, B o C g S m d k v k r u g s k

- (A) ABC (B) \sqrt{ABC}
 (C) $A^2B^2C^2$ (D) l u e a l s d l k Z u g a

Space for Rough Work

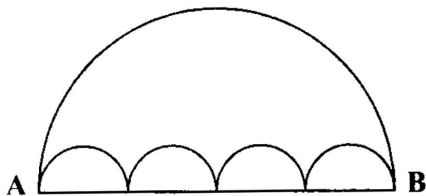
15. ΔABC is an equilateral triangle of side $2\sqrt{3}$ cm. P is any point in the interior of ΔABC . If x, y, z are the distances of P from the sides of the triangle, then $x + y + z =$

- (A) $2 + \sqrt{3}$ cms. (B) 5 cms.
- (C) 3 cms. (D) 4 cms.

16. Which of the following statements holds always ?

- (A) Every rectangle is a square
- (B) Every parallelogram is a trapezium
- (C) Every rhombus is a square
- (D) Every parallelogram is a rectangle

17. All the arcs in the following diagram are semi-circles. This diagram shows two paths connecting A to B. Path I is the single large semi-circle and Path II consists of the chain of small semi-circles then



- (A) Path I is longer than path II
- (B) Path I is of the same length as Path II
- (C) Path I is shorter than Path II
- (D) Path I is of the same length as Path II, only if the number of semicircles is not more than 4

18. $\sqrt{(a-b)^2} + \sqrt{(b-a)^2}$ is

- (A) Always zero
- (B) Never zero
- (C) Positive if and only if $a > b$
- (D) Positive only if $a \neq b$

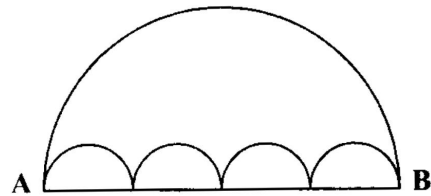
15. ΔABC , d l eckqf-Hlq gSft l dh Hlqk $2\sqrt{3}$ cm gSA-Hlq ABC dsv rj P d kZclwqgSA ; fn x, y, z fclwq l sf-Hlq dh Hlqk l srfj, k gS kx + y + z =

- (A) $2 + \sqrt{3}$ cms. (B) 5 cms.
- (C) 3 cms. (D) 4 cms.

16. fuEu eadl k d fu l nS l R gS

- (A) i R d vkr , d oxZgSA
- (B) i R d l ekrj prhl , d leyE prhl gSA
- (C) i R d l eprhl , d oxZgSA
- (D) i R d l ekrj prhl , d vkr gSA

17. fuEu fp-ke d Hlqk v dZk gSA d fp-ke d d l st Msd sfj ; sn k sZfn k x ; gSA ekZI ek , d cMk v dZk gSt cfd ekZII v dZk dh klyk gS k



- (A) ekZI ekZI l syEck gS
- (B) ekZI ekZI dscjkj gS
- (C) ekZI ekZI l snk gS
- (D) ekZI rFk ekZI l eku njndsg d sy ; fn v dZk dh l k 4 l svfed ugragSA

18. $\sqrt{(a-b)^2} + \sqrt{(b-a)^2}$ gS

- (A) l nS 'kl
- (B) dnki 'kl ugra
- (C) eked ; fn v l s dos ; fn $a > b$
- (D) eked d sy ; fn $a \neq b$

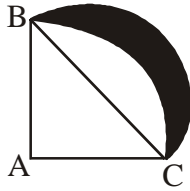
Space for Rough Work

19. Re. 1 and Rs. 5 coins are available (as many required). Find the payment which **cannot** be made by these coins, if not more than 5 coins are allowed.
 (A) 3 (B) 12 (C) 14 (D) 16
20. There are several human beings and several dogs in a room. One tenth of the humans have lost a leg. The total number of feet are 77. Then the number of dogs is
 (A) not determinable due to insufficient data
 (B) 4
 (C) 5 (D) 6
21. If x, y, z are positive real numbers and a, b, c are rational numbers, then the value of $\frac{1}{1+x^{b-a}+x^{c-a}} + \frac{1}{1+x^{a-b}+x^{c-b}} + \frac{1}{1+x^{b-c}+x^{a-c}}$ is
 (A) -1 (B) 0
 (C) 1 (D) None of these
22. If 3 is the least prime factor of number x and 7 is the least prime factor of number y, then the least prime factor of x + y is
 (A) 2 (B) 3 (C) 5 (D) 10
23. If the diameter of a sphere is decreased by 25%, by what per cent does its curved surface area decrease ?
 (A) 43.75% (B) 21.88%
 (C) 50% (D) 25%
24. ABC and BDE are two equilateral triangles such that D is the mid-point of BC. Ratio of the areas of triangles ABC and BDE is
 (A) 2 : 1 (B) 1 : 2
 (C) 4 : 1 (D) 1 : 4

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Space for Rough Work

25. In figure ABC is a quadrant of a circle of radius 14 cm and a semicircle is drawn with BC as diameter. The area of the shaded region is

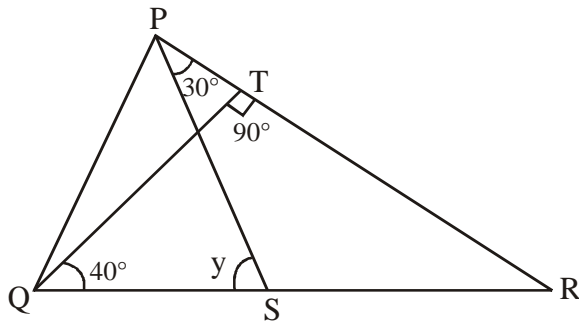


- (A) 98 cm^2 (B) 154 cm^2
 (C) 56 cm^2 (D) None of these

26. The ratio of the volume of a cube to that of a sphere which exactly fits inside the cube is

- (A) $6 : \pi$ (B) $\pi : 6$
 (C) $\pi : 12$ (D) $12 : \pi$

27. In figure If $QT \perp PR$, $\angle TQR = 40^\circ$ and $\angle SPR = 30^\circ$, then y is

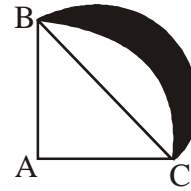


- (A) 70° (B) 110°
 (C) 90° (D) 80°

28. Find the value of $(8)^{\frac{-5}{3}}$

- (A) 32 (B) -32
 (C) $\frac{1}{32}$ (D) $-\frac{1}{32}$

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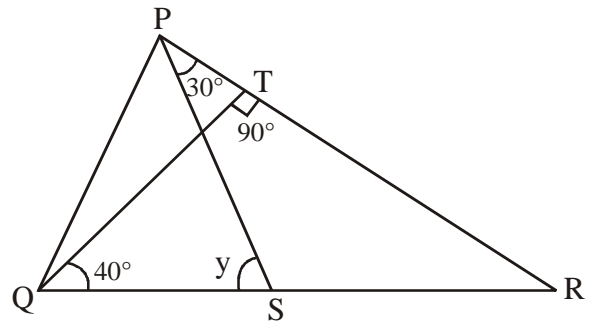


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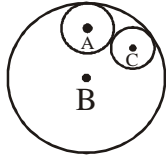
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Space for Rough Work

29. The three circles in the figure centred at A, B and C are tangent to one another and have radii 7, 21 and 6 respectively. The area of the triangle ABC is



- (A) 74 (B) 64
(C) 84 (D) 54

30. $1, -2, 3, -4, 5, -6, \dots, n(-1)^{n+1}$ consider the sequence. What is the average of the first 300 terms of the sequence -

- (A) -0.5 (B) 0.5
(C) 0 (D) -1

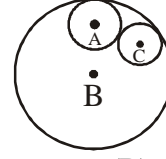
31. A man running with a uniform speed 'u' on a straight road observes a stationary bus at a distance 'd' ahead of him. At that instant, the bus starts with an acceleration 'a'. The condition that he would be able to catch the bus is

- (A) $d \leq \frac{u^2}{a}$ (B) $d \leq \frac{u^2}{2a}$
(C) $d \leq \frac{u^2}{3a}$ (D) $d \leq \frac{u^2}{4a}$

32. A body of mass m is stationary on an inclined plane of angle θ with the horizontal due to friction. What will be the force exerted by the plane on the body ?

- (A) mg (B) $\frac{1}{2} mg$
(C) $mg \cos \theta$ (D) $mg \sin \theta$

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SCIENCE

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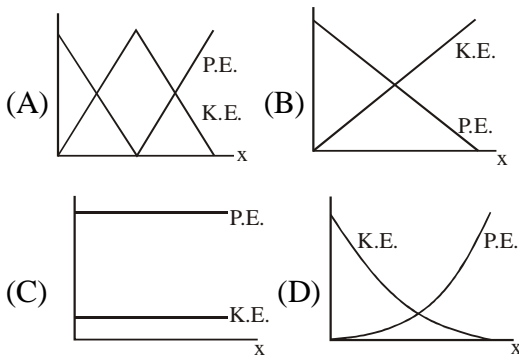
33. A ball is thrown vertically upwards with a given velocity 'v' (m/s) such that it rises for T seconds ($T > 1$). What is the distance traversed by the ball during the last one second of ascent (in meters)? (Acceleration due to gravity is $g \text{ m/s}^2$.)

- (A) $\frac{1}{2}gT^2$ (B) $vT + \frac{1}{2}g[T^2 - (T-1)^2]$
 (C) $\frac{g}{2}$ (D) $\frac{1}{2}g[T^2 - (T-1)^2]$

34. The radius of a planet A is twice that of planet B. The average density of the material of planet A is thrice that of planet B. The ratio between the values of acceleration due to gravity on the surface of planet A and that on the surface of planet B is

- (A) $\frac{2}{3}$ (B) $\frac{3}{2}$
 (C) $\frac{4}{3}$ (D) 6

35. The variation in the kinetic energy (K.E.) and the potential energy (P.E.) of a particle moving along the x-axis are shown in the graphs below. Which one of the following graphs violates the law of conservation of energy?



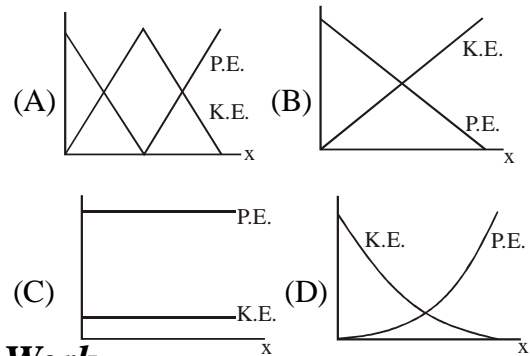
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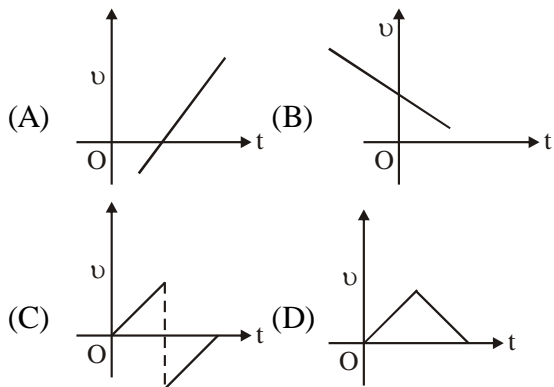
36. The disc of a siren containing 60 holes rotates at a constant speed of 360 rotations per minute. The emitted sound is in unison with a tuning fork of frequency

- (A) 270 Hz (B) 360 Hz
- (C) 480 Hz (D) 540 Hz

37. A tuning fork is excited by striking it with a padded hammer. What would be the nature of the vibrations executed by the prongs as well as the stem of the fork respectively ? (The reference direction is that of the propagation of the sound wave.)

- (A) Both vibrate longitudinally
- (B) Both vibrate transversely
- (C) The prongs vibrate longitudinally whereas the stem vibrates transversely
- (D) The prong vibrate transversely whereas the stem vibrates longitudinally

38. The velocity - time graph of a body falling from rest under gravity and rebounding from a solid surface is represented by



39. For hearing distinct echoes, the minimum distance of the obstacle from the source of sound must be (Given velocity of sound = 344 m/s)

- (A) 17.2 m (B) 34.4 m
- (C) 172 m (D) 344 m

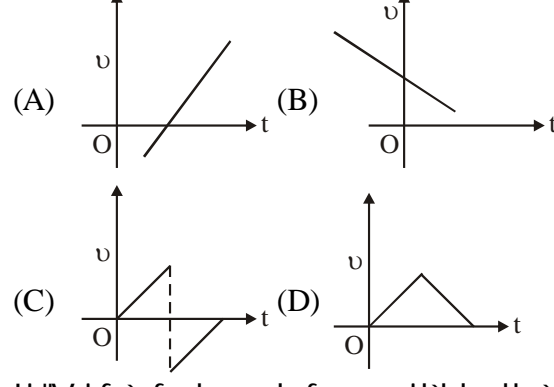
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- (A) 270 Hz (B) 360 Hz
- (C) 480 Hz (D) 540 Hz

37. A tuning fork is excited by striking it with a padded hammer. What would be the nature of the vibrations executed by the prongs as well as the stem of the fork respectively ? (The reference direction is that of the propagation of the sound wave.)

- (A) Both vibrate longitudinally
- (B) Both vibrate transversely
- (C) The prongs vibrate longitudinally whereas the stem vibrates transversely
- (D) The prong vibrate transversely whereas the stem vibrates longitudinally

38. The velocity - time graph of a body falling from rest under gravity and rebounding from a solid surface is represented by



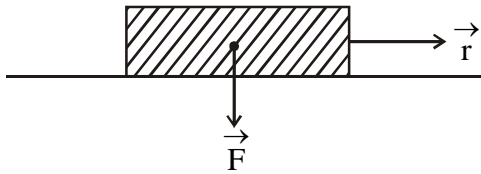
39. For hearing distinct echoes, the minimum distance of the obstacle from the source of sound must be (Given velocity of sound = 344 m/s)

- (A) 17.2 m (B) 34.4 m
- (C) 172 m (D) 344 m

Space for Rough Work

40. The gravitational force between two objects of mass 1 kg each separated by a distance of 1 m in vacuum will be
- (A) zero
- (B) $6.675 \times 10^{-11} \text{ N}$
- (C) $13.350 \times 10^{-11} \text{ N}$
- (D) $3.337 \times 10^{-11} \text{ N}$

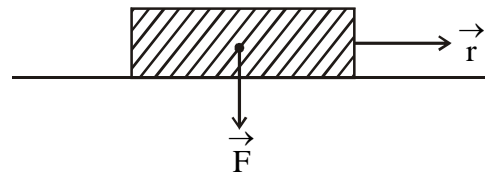
41. The force F is acting on an object of mass m . The direction of displacement (\vec{r}) and force (\vec{F}) of the object is shown by an arrow. Work done by the force will be



- (A) positive (B) negative
- (C) zero
- (D) either positive or negative
42. A bullet of mass 10 g travelling horizontally with a velocity of 160 ms^{-1} strikes a stationary wooden block and comes to rest in 0.02 s . Assume constant retardation is provided by the block. The distance of penetration of the bullet into the block will be
- (A) 1.20 m (B) 1.60 m
- (C) 2.00 m (D) 2.40 m
43. When a body is immersed in a liquid, the buoyant force that acts on the body will be
- (A) vertically downwards
- (B) vertically upwards
- (C) horizontally right side
- (D) horizontally left side

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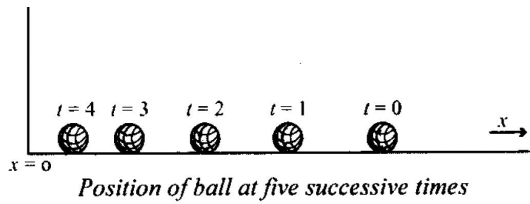
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Space for Rough Work

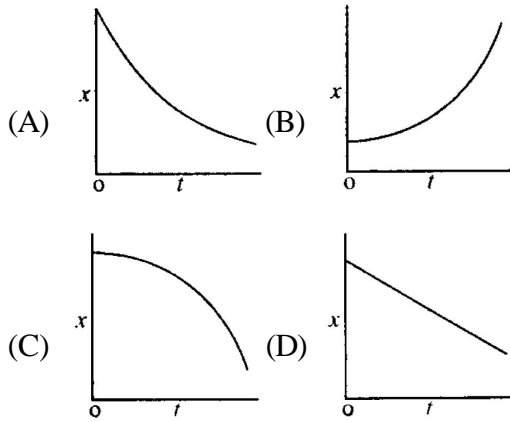
44. A geo-stationary satellite is orbiting around earth at height of 30,000 km in circular orbit. The radius of the earth is taken as 6000 km. The geo-stationary satellite comes back to its position after one revolution in exactly 24 hours. Let the acceleration due to gravity (g) be 10 m/s^2 on the surface of earth and mass of satellite be 1000 kg; calculate the work done in 12 hours when moving under gravitational force.

- (A) $3.6\pi \times 10^{14} \text{ J}$ (B) $2\pi \times 7.2\pi \times 10^{14} \text{ J}$
 (C) $1.8\pi \times 10^{14} \text{ J}$ (D) 0 J

45. The figure below shows the position of a ball at $t = 0, t = 1 \text{ s}, t = 2 \text{ s}, t = 3 \text{ s}$ and $t = 4 \text{ s}$



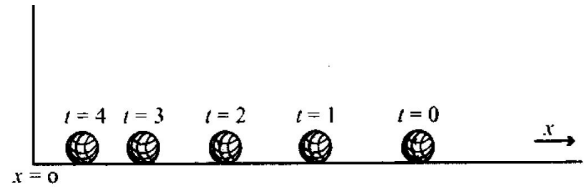
Which of the graph below is a possible graph of the position $x(t)$?



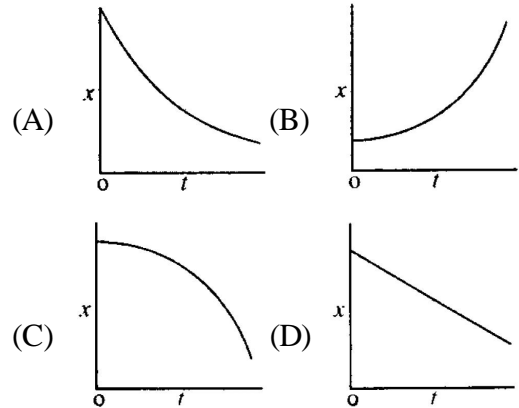
44. , d HwLFj nixg i Fohd si fjr %ok d {kea 30,000 km dh ApkZ j w jgk gSA i Fohd h fT, k dls 6,000 km fy; k x; k gSA; g HwLFj nixg , d ifj Øek dsi 'pk viusLFku ij l gh 24 ghaseokil vkkgSA xefh ej.kdkeku i Fohdhl rg ij 10 m/s^2 r Fk nixg dka Oku 1000 kg ekudj xefh cy dsi hko eaxfr djrsgg nixg ij 12 ghasefd, x; sdk Zdk ifjdyu dhft , A

- (A) $3.6\pi \times 10^{14} \text{ J}$ (B) $2\pi \times 7.2\pi \times 10^{14} \text{ J}$
 (C) $1.8\pi \times 10^{14} \text{ J}$ (D) 0 J

45. fuEu fp-k t=0, t=1 s, t=2 s, t=3 s r Fk t=4s ij fdl hxa dh fLFfr; k n kZk gSA

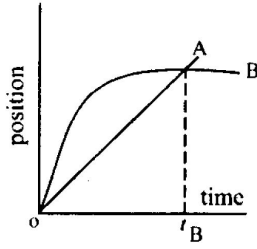


fuEu esl sdls l k x(t) dls n kZsd s fy, l Ehf or x(t) Ogsl drk gS



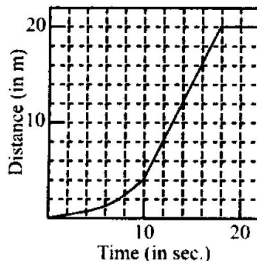
Space for Rough Work

46. The graph shows position as a function of time for two trains A and B running on parallel tracks. For time $t > 0$, which of the following statements is true ?



- (A) At time t_B , both trains have the same velocity.
- (B) Both trains speed up all the time.
- (C) Both trains may have the same velocity at some time earlier than t_B .
- (D) Graph indicates that both trains have the same acceleration at a given time.

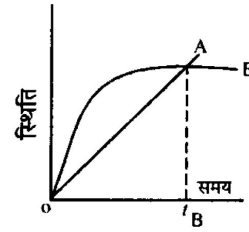
47. The figure shown below depicts the distance travelled by a body as a function of time.



The average speed and maximum speed between 0 and 20 s are nearly

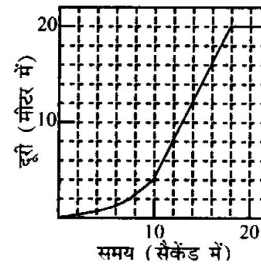
- (A) 1 m/s, 2.0 m/s respectively.
- (B) 1 m/s, 1.6 m/s respectively.
- (C) 2.0 m/s, 2.6 m/s respectively.
- (D) 1.3 m/s, 2.0 m/s respectively.

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The average speed and maximum speed between 0 and 20 s are nearly

- (A) 1 m/s, 2.0 m/s respectively.
- (B) 1 m/s, 1.6 m/s respectively.
- (C) 2.0 m/s, 2.6 m/s respectively.
- (D) 1.3 m/s, 2.0 m/s respectively.

Space for Rough Work

48. A hypothetical planet has density p , radius R , and surface gravitational acceleration g . If the radius of the planet were doubled, but the planetary density stayed the same, the acceleration due to gravity at the planet's surface would be :
 (A) $4g$ (B) $2g$ (C) $g/4$ (D) $g/2$
49. Temperature of an iron block is 140°F . Its temperature in Celcius scale will be—
 (A) 100°C (B) 60°C
 (C) 32°C (D) 140°C
50. A drop of water is always spherical due to—
 (A) Viscosity
 (B) Surface tension
 (C) Atmospheric pressure
 (D) Gravity
51. The molecule that deviates from octet rule is :
 (A) NaCl (B) BF_3 (C) MgO (D) NCl_3
52. 'X' and 'Y' are two elements which form X_2Y_3 and X_3Y_4 . If 0.2 mol of X_2Y_3 weighs 32g and 0.4 mole of X_3Y_4 weight 92.8 g, the atomic weights of X and Y respectively are
 (A) 16,56 (B) 16,16
 (C) 56,16 (D) 56,56
53. Salt made of non-metallic elements only is
 (A) NaCl (B) NH_4Cl
 (C) AlN (D) MgCl_2
54. Which of the following is known as freon ?
 (A) CCl_2F_2 (B) CHCl_3
 (C) CH_2F_2 (D) CF_4
55. Valency of carbon in CO_3^{2-} ion is
 (A) 2 (B) 3 (C) 4 (D) 5
48. fdl hifjdfYr xg dk ?ul p, f-k; k R r Flk
 l rgh x@h h j.k g gSA xgh ?ul dsl eku
 j[ksgg b xg dhf-k; kdlsnk djusi] xg
 dh lrg ij x@h h j.k gsk%
- (A) 4g (B) 2g (C) g/4 (D) g/2
49. ylgds, d V M d k r i eku 140° F gSA M ; l
 Ld y ij r k eku gsk
- (A) 100°C (B) 60°C
 (C) 32°C (D) 140°C
50. t y dscw dsxsk dk gsd kd k .k gS
 (A) ' ; kurk (B) i "B rulo
 (C) ok eby h nc (D) xq
51. og v .k t sv "Vd fu e dki yu ugha djr k gS
 (A) NaCl (B) BF₃ (C) MgO (D) NCl₃
52. X , oAY nrs l gS kX₂Y₃ , oAX₃Y₄ cuk kgSA; fn
 0.2 eky X₂Y₃ dk Hk 32 xle , oA 0.4 eky X₃Y₄ dk
 Hk 92.8 xle gsr kX , oAY dki jekk Hk Ø' l gSA
- (A) 16, 56 (B) 16, 16
 (C) 56, 16 (D) 56, 56
53. døy v k f d r lal scuk yo. k gS
 (A) NaCl (B) NH₄Cl
 (C) AlN (D) MgCl₂
54. bual sd k S Úrvu ue l st kuk t k k gS
 (A) CCl₂F₂ (B) CHCl₃
 (C) CH₂F₂ (D) CF₄
55. CO₃²⁻ vk u ead k i dh l a k dr k gS
 (A) 2 (B) 3 (C) 4 (D) 5

Space for Rough Work

56. Structure of nuclei of three atoms X, Y and Z are as follows :

- (1) X has 90 Protons and 146 Neutrons.
- (2) Y has 92 Protons and 146 Neutrons.
- (3) Z has 90 Protons and 148 Neutrons.

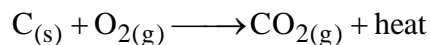
Which of the following statement is correct based on above data ?

- (A) X and Z are isotopes; Y and Z are isobars.
- (B) X and Y are isotopes; X and Z are isobars.
- (C) Y and Z are isobars; X and Y are isotopes.
- (D) X and Z are isotopes; X and Y are isobars.

57. The bond, in compound formed from combination of 14 group and 17 group elements of Periodic table will be

- (A) Electrovalent bond
- (B) Co-ordinate bond
- (C) Van der Waals bond
- (D) Covalent bond

58. The reaction between carbon and oxygen can be represented as



In which of the following type(s), the above reaction can be classified ?

- I. Combustion reaction
- II. Displacement reaction
- III. Endothermic reaction
- IV. Combination reaction

- (A) (I) and (III) (B) (I), (III) and (IV)
- (C) (I) and (IV) (D) (I) only

59. Number of moles in 128gm of sulphur will be

- (A) 0.5 (B) 2 (C) 4 (D) 8

60. By which property are gases and liquids different from solids ?

- (A) Volume (B) Mass
- (C) Conductivity (D) Fluidity

56. X, Y, oaz rhu ijek klad hukhd eal jpu k a fuEu gS

- (1) X es 90 i kRNV, oal 146 UjVAVgSA
- (2) Y es 92 i kRNV, oal 146 UjVAVgSA
- (3) Z es 90 i kRNV, oal 148 UjVAVgSA

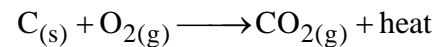
mij kOv l Mad sv lek ij fuEu eal sd l k d f u l R g S

- (A) X, oaz l e l f k u d r f k Y, oaz l e h k j d g S A
- (B) X, oaz l e l f k u d r f k X, oaz l e h k j d g S A
- (C) Y, oaz l e h k j d r f k X, oaz l e l f k u d g S A
- (D) X, oaz l e l f k u d r f k X, oaz l e h k j d g S A

57. v l o r Z i k j . k h d s l e g y 14 d s r f e , o a l e g y 17 d s r f e d s l a k s i j c u s o l y s ; k s d e a c e k g s k u

- (A) o S q l a l s h c e k (B) m i l g l a l s h c e k
- (C) o k m j o k y c e k (D) l g l a l s h c e k

58. d l c u , o a v k v h u d s e e , v f h e o , k d k s f u : f i r f d ; k t k k g S



fuEu eal sfdu i d i k l a d h v f h e o , k l a e a b v f h e o , k d l s o x h i r f d ; k t k l d r k g S

- I. n g u v f h e o ; k
- II. f o l f k i u v f h e o ; k
- III. A " e k k s h v f h e o ; k
- IV. l a l s u v f h e o ; k

- (A) (I) r f k (III) (B) (I), (III) r f k (IV)
- (C) (I) r f k (IV) (D) d o y (I)

59. 128 x e l Y o e a s y k a d h l e ; k g s h u

- (A) 0.5 (B) 2 (C) 4 (D) 8

60. x S , o a e f d l x o k e a B s l s f h A g S

- (A) v k r u (B) a e d e k u
- (C) p l y d r k (D) r j y r k

Space for Rough Work

61. At room temperature liquid non-metal is
(A) carbon (B) bromine
(C) mercury (D) iodine.
62. pH of soda-water is
(A) 7 (B) < 7 (C) > 7 (D) 0
63. About (A) Ca(OH)_2 , (B) KOH , (C) Be(OH)_2 the correct statement is:
(A) All are bases
(B) (B) and (C) are bases, (A) is acidic
(C) (A) is acidic, (B) is basic, (C) is amphoteric
(D) (B) and (C) are basic, (A) is amphoteric
64. About (A) H_2O_2 , (B) BaO_2 , (C) CO_2 the correct statement is:
(A) Both (A) and (B) are peroxides but not (C).
(B) All are peroxides
(C) (A) is peroxide but not (B) and (C)
(D) (A) and (C) are peroxides but not (B).
65. An element have atomic number 19 and mass number 39. The number of neutron in its nucleus is—
(A) 20 (B) 58 (C) 19 (D) 39
66. The number of molecules in one mole of gas is—
(A) 6.023×10^{23} (B) 6.023×10^{22}
(C) 6.023×10^{21} (D) 6.023×10^{20}
67. Mass percentage of nitrogen in the compound N_2O_3 is—
(A) 36.84 (B) 46.70
(C) 82.40 (D) 63.60
68. How much MgO is obtained on heating 5 gm of Magnesium Carbonate (MgCO_3)—
(A) 2.4 gm. (B) 2.38 gm.
(C) 2.8 gm. (D) 3.28 gm.
69. Valency of Cr in CrPO_4 is—
(A) 4 (B) 3 (C) 2 (D) 1
70. Which element will form acidic oxide in the following?
(A) Element having atomic No. 11
(B) Element having atomic No. 20
(C) Element having atomic No. 16
(D) Element having atomic No. 37
71. The common component of nuclear membrane of organelles like Mitochondria, Endoplasmic reticulum and Nucleus is—
(A) Glycolipid (B) Glycoprotein
(C) Nucleoprotein (D) Lipoprotein
61. dejsdsrki ij æ vèkrqgS
(A) dlcZ (B) ckeu (C) edjn (D) vk kshu
62. l kshokj dh pH gshgS
(A) 7 (B) < 7 (C) > 7 (D) 0
63. (A) Ca(OH)_2 , (B) KOH , (C) Be(OH)_2 l s Eflèk l gh dflu gS%
(A) l Hh {k} gS
(B) (B) v k (C) {k} gS (A) v Eyh gS
(C) (A) v Eyh gS (B) {k} gS (C) v E Osd gS
(D) (B) v k (C) {k} gS (A) v E Osd gS
64. (A) H_2O_2 , (B) BaO_2 , (C) CO_2 l sl Eflèk l gh dflu gS%
(A) (A) o (B) ijv k v k MgSij (C) ughA
(B) l Hh ijv k v k gS
(C) (A) ijv k v k MgSij (B) o (C) ughA
(D) (A) o (C) ijv k v k MgSij (B) ughA
65. , d r k i j e k l q e d 19 r f k a e k u l h ; k 39 g S d s u k h d e a l u v k e d h l h ; k g S
(A) 20 (B) 58 (C) 19 (D) 39
66. , d e l s x S e a v . k l e d h l h ; k g s h g S
(A) 6.023×10^{23} (B) 6.023×10^{22}
(C) 6.023×10^{21} (D) 6.023×10^{20}
67. ; k s d N₂O₃ e a u v k s u d k i z ' k a e k u g l s k g S
(A) 36.84 (B) 46.70
(C) 82.40 (D) 63.60
68. i p x e e s h i k e d l c a v (MgCO₃) x e z d j u s i j f d r u k e s h i k e v k v k (MgO) i t r g l s k u
(A) 2.4 x k e (B) 2.38 x k e
(C) 2.8 x k e (D) 3.28 x k e
69. O k e ; e i O M S (CrPO₄) e a C r d h l a l s d r k g S
(A) 4 (B) 3 (C) 2 (D) 1
70. f u e r y f l k e a d l s l k r l o v E y h v k v k M c u k x k l
(A) 11 i j e k l q l h ; k o k y k r l o
(B) 20 i j e k l q l h ; k o k y k r l o
(C) 16 i j e k l q l h ; k o k y k r l o
(D) 37 i j e k l q l h ; k o k y k r l o
71. e k v s k v k i j v a e h t k y d k r f k d e d v k n d l s k d e h l y k e k f > y h e a i k k t k u s o k y k k u p
(A) X y k d l s y f i M (B) X y k d l s i k s h u
(C) U t p v l s i k s h u (D) f y i l s i k s h u

72. Our atmosphere is made of many layers. The layer nearest to the surface of the earth is known as
 (A) Geosphere (B) Stratosphere
 (C) Troposphere (D) none of above
73. Which of the following is an example of algae–
 (A) Yeast (B) Spirogyra
 (C) Fern (D) Amoeba
74. Which of the following is not found in the animal cell–
 (A) Plastid
 (B) Mitochondria
 (C) Golgi body
 (D) Endoplasmic reticulum
75. In which of the following animals jointed legs are not found ?
 (A) Palaemon (B) Scorpion
 (C) Housefly (D) Leech
76. Which of the following diseases is not related with sexual transmission ?
 (A) Syphilis (B) Gonorrhoea
 (C) Allergy (D) AIDS
77. There are number of organelles in a eukaryotic cell. Which one of the following does not contain DNA.
 (A) Chloroplast (B) Mitochondria
 (C) Nucleus (D) Lysosome
78. The most intelligent mammal among the following is
 (A) Whale (B) Dolphins
 (C) Kangaroos (D) Elephants
79. An animal cell, a plant cell and a bacterium share the following structural features :
 (A) Cell membrane, endoplasmic reticulum, vacuoles
 (B) Cell wall, plasma membrane, mitochondria
 (C) cell wall, nucleus, cytoplasm
 (D) Plasma membrane, cytoplasm, ribosomes
80. A plant that has well differentiated body, special tissues for transport of water and other substances, but does not have seed or fruits is a :
 (A) Bryophyte (B) Angiosperm
 (C) Gymnosperm (D) Pteridophyte
81. Which is a prokaryotic cell, amongst the following ?
 (A) Amoeba (B) Bacteria
 (C) Yeast (D) Euglena

72. ~~gek ok qe. My vud l r g l ad k cuk gsk gSA~~
~~i Foh dsaj ky dsl eh ik ht kusoky hl rgu~~
 (A) ~~Hobly~~ (B) ~~lerk ealy~~
 (C) ~~{kk ealy~~ (D) ~~dlzh ugra~~
73. ~~fuEryf[k eal sdls ' lky dknmgj.k gS~~
 (A) ; hLV (B) Li h jsk, jk
 (C) i QZ (D) verck
74. ~~fuEryf[k eal sdls t aqdl s k k eaugrai k k~~
~~t k k u~~
 (A) yod (B) ekvskw k
 (C) xky rtk (D) va%zeht kydk
75. ~~fuEu eal sfdl i k ked ak d i Sugrai k st ks~~
~~gS~~
 (A) i syekw (B) fcPNw
 (C) eDj h (D) t kd
76. ~~fuEu eal sdls k y ad l pj. kl sl adk j k~~
~~ugragS~~
 (A) fl i Qyl (B) xlsf; k
 (C) , yt hZ (D) , M-
77. ~~; d s v ad d k k v leav u l ad s k k i k s~~
~~t k s g a fdl , d d k k eadna ugrai k k~~
~~t k k gSA~~
 (A) gfr yod (B) ekvskw k
 (C) d s d (D) yk l k s
78. ~~fuEu eal o k z d c f y e k l r u i k h gS~~
 (A) g o y (B) M y i Q
 (C) d a # (D) g f h
79. ~~, d t l r q d k k ouli fr d k k r f k t h o k k~~
~~l ad : i e s f u r y f [k l j p u e d y { k k i r h z~~
~~d j r s g a~~
 (A) d k k e f > Y h v a e h t k y d k f j f d k
 (B) d k k e f h u h l y k e f > Y h e k v s k w k
 (C) d k k e f h u h d s d] d k k e
 (D) l y k e f > Y h d k k e) j k k s
80. ~~, d i n i e a l i " V f o h r d k k t y , o a v U~~
~~i n f k s l f k u j . k d s y , f o ' k k A r d g f y d u~~
~~b e a c h v f o k i Q u g r a g s g %~~
 (A) c k i s o v (B) , a h k i e z
 (C) f t E u i e z (D) v h i s o v
81. ~~fuEryf[k eal sdls h i k s ; k d d k k~~
~~gS~~
 (A) verck (B) c s u h j ; k
 (C) ; hLV (D) ; y h u k

ANSWER KEY

CLASS-9

1.	B	2.	B	3.	A	4.	C	5.	B	6.	B	7.	B
8.	C	9.	D	10.	D	11.	A	12.	C	13.	D	14.	B
15.	C	16.	B	17.	B	18.	D	19.	C	20.	C	21.	C
22.	A	23.	A	24.	C	25.	A	26.	A	27.	D	28.	C
29.	C	30.	A	31.	B	32.	A	33.	C	34.	D	35.	D
36.	B	37.	A	38.	C	39.	A	40.	B	41.	C	42.	B
43.	B	44.	D	45.	A	46.	C	47.	A	48.	B	49.	B
50.	B	51.	B	52.	C	53.	B	54.	A	55.	C	56.	A
57.	D	58.	C	59.	A	60.	D	61.	B	62.	B	63.	C
64.	A	65.	A	66.	A	67.	A	68.	B	69.	B	70.	C
71.	D	72.	C	73.	B	74.	A	75.	D	76.	C	77.	D
78.	B	79.	D	80.	D	81.	B	82.	D	83.	B	84.	D
85.	C	86.	C	87.	D	88.	A	89.	B	90.	A		