

FIITJEE SAMPLE PAPER – 2018

(Big Bang Edge Test / Talent Recognition Exam)

for students presently in

Class 11 (Paper 1)

Time: 3 Hours (9:30 am – 12:30 pm)

Code 1100

Maximum Marks: 234

Instructions:

Caution: Class, Paper, Code as given above **MUST** be correctly marked on the answer OMR sheet before attempting the paper. Wrong Class, Paper or Code will give wrong results.

1. You are advised to devote 60 Minutes on Section-I, 90 Minutes on Section-II and 30 Minutes on Section-III.
2. This Question paper consists of 3 sections. Marking scheme is given in table below:

Section	Subject	Question no.	Marking Scheme for each question	
			correct answer	wrong answer
SECTION – I	APTITUDE	1 to 30	+3	0
SECTION – II	PHYSICS (PART-A)	31 to 44	+3	0
	CHEMISTRY (PART-B)	45 to 58	+3	0
	MATHEMATICS (PART-C)	59 to 72	+3	0
SECTION – III	PHYSICS (PART-A)	73 to 78	+1	-0.25
	CHEMISTRY (PART-B)	79 to 84	+1	-0.25
	MATHEMATICS (PART-C)	85 to 90	+1	-0.25

3. Answers have to be marked on the OMR sheet. The Question Paper contains blank spaces for your rough work. No additional sheets will be provided for rough work.
4. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.
5. **Before attempting paper write your OMR Answer Sheet No., Registration Number, Name and Test Centre** in the space provided at the bottom of this sheet.

Note: Please check this Question Paper contains all **90** questions in serial order. If not so, exchange for the correct Question Paper.

OMR Answer Sheet No. : _____

Registration Number : _____

Name of the Candidate : _____

Test Centre : _____

Recommended Time: 60 Minutes for Section – I

Section – I

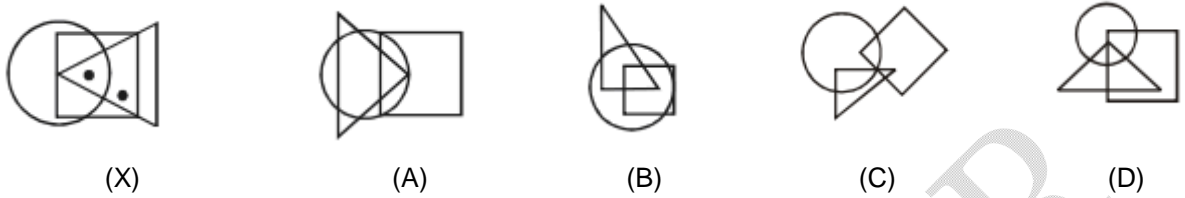
APTITUDE TEST

This section contains 30 Multiple Choice Questions number 1 to 30. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

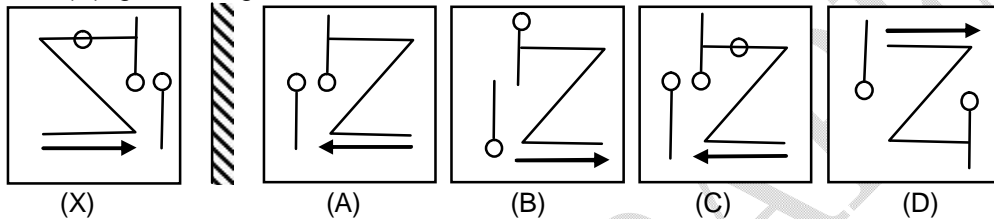
- In the following number sequence, how many such even numbers are there which are exactly divisible by its immediate preceding number but not exactly divisible by its immediate following number?
3 8 4 1 5 7 2 8 3 4 8 9 3 9 4 2 1 5 8 2
(A) One (B) Two
(C) Three (D) Four
- Various terms of an alphabet series are given with one term is missing as shown by (?). Choose the missing term out of the given alternatives.
BD, EG, HJ, ?
(A) LN (B) LM
(C) KM (D) KN
- In the following question, select the word which cannot be formed using the letters of the given word.
DICTIONARIES
(A) CATION (B) SITE
(C) DICTATE (D) TIRED
- Three of the following four are alike in a certain way and so form a group. Which is the one that does not belong to the group?
(A) America (B) India
(C) Bangladesh (D) Pakistan

Space for Rough Work

5. A dot is placed in the figure marked as (X), this figure is followed by the four alternatives marked as (A), (B), (C), (D). One out of these four options contains the common region to circle, square, rectangle, triangle similar to that of marked by dot in figure (X).



6. Choose the correct mirror – image of the figure (X) from amongst four alternatives (A), (B), (C) and (D), given along with it.



7. There is some relationship between the two terms to the left of :: and the same relationship holds between the two terms to its right. Find out the related term from the given alternatives.

JQXE : LSZG :: MTNL : ?

- (A) OPVN (B) KRPN
(C) OVPN (D) OPLJ

8. Arrange the given words in the sequence in which they occur in the dictionary.

1. Dragon 2. Dracula 3. Dormont 4. Drapery 5. Deviate
(A) 53214 (B) 53124
(C) 53421 (D) 53412

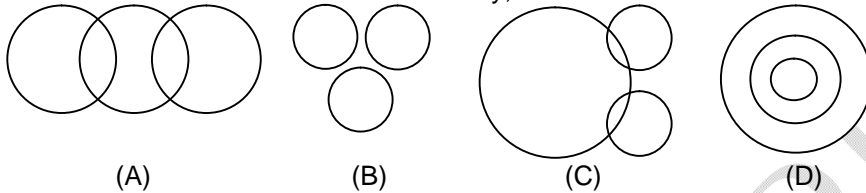
9. Three of the following four are alike in a certain way and so form a group. Which is the one that does not belong to the group?

- (A) Quick : Fast (B) Lazy : Slow
(C) Credible : Deceptive (D) Exhaust : Tired

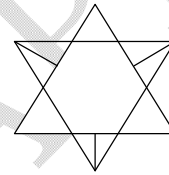
Space for Rough Work

10. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?
 P_P_RPQ_S_Q_ST
 (A) QRQPR (B) QQRPR
 (C) PQPRR (D) PRQRQ

11. In this question given below contains three elements. These elements may or may not have some inter linkage. Each group of elements may fit into one of these diagrams at (A), (B), (C) and/or (D). You have to indicate the group of elements which correctly fits into the diagrams and indicates the best relation between Hockey, Football and Cricket?



12. How many triangles are there in the given figure?
 (A) 12
 (B) 14
 (C) 16
 (D) 18

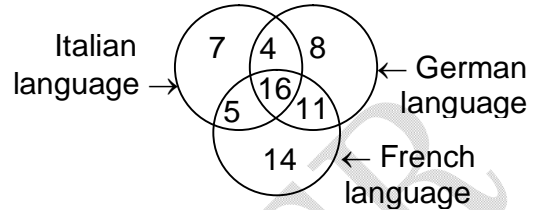


13. In a class of five students, P has more marks than Q and R does not have the least marks. S has more marks than T and T has more marks than P, who among them will have the least marks?
 (A) P (B) Q
 (C) S (D) T
14. In a certain code language, "CASIO" is written as "3119915". How is "CITIZEN" written in that code language?
 (A) 295629134 (B) 3192295614
 (C) 3912659214 (D) 3920926514

Space for Rough Work

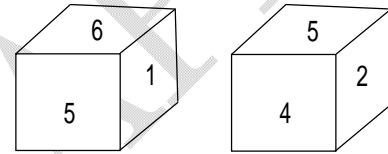
15. From a point, Lokesh starts walking towards south and after walking 30 metres he turns to his right and walks 20 metres, then he turns right again and walks 30 metres. He finally turns to his left and walk 40 metres. In which direction is he with reference to the starting point?
 (A) North-West (B) East
 (C) West (D) South

16. In the given figure, how many people speak both Italian and French language?
 (A) 21
 (B) 16
 (C) 27
 (D) 20



17. If $6 * 9 - 4 = 58$ and $3 * 9 - 7 = 34$, then in the expression $A * 4 - 9 = 91$, what is the value of 'A'?
 (A) 6.5 (B) 17.5
 (C) 20.5 (D) 30.5

18. Two positions of a dice are shown below. What will come opposite to face containing '4'?
 (A) 1
 (B) 2
 (C) 3
 (D) 6



19. In the following question, correct the given equation by interchanging two numbers.
 $(8 \times 3) \div 4 + 9 - 5 = 16$
 (A) 3 and 4 (B) 4 and 8
 (C) 5 and 3 (D) 5 and 9
20. In a row of cars Maruti is 20th from the left end of row. Honda is 10th to the right from Maruti and is at the exact center of row. How many cars are there in the row?
 (A) 54 (B) 59
 (C) 57 (D) 56

Space for Rough Work

21. X and Y are brothers. R is the father of Y. T is the sister of S who is maternal uncle of X. How is T related to R?
(A) Mother (B) Wife
(C) Sister (D) Brother
22. What will come in place of question mark (?) in the following series?
X2Z, B6D, ? , J14L, N18P
(A) F10H (B) F6H
(C) D5J (D) F18J
23. If white is called blue, blue is called red, red is called yellow, yellow is called green, green is called black, black is called violet and violet is called orange, what would be the color of human blood?
(A) Red (B) Yellow
(C) Orange (D) Green
24. How many times from 4 pm to 10 pm the hour and minute hands of a clock are at right angles?
(A) 9 (B) 11
(C) 10 (D) 6

Directions (Q.25 to Q.26): Study the following information carefully and answer the questions given below:

In an Exhibition seven cars of different companies - Cadillac, Ambassador, Fiat, Maruti, Mercedes, Bedford and Fargo are standing facing to East in the following order :

1. Cadillac is next to right of Fargo.
 2. Fargo is fourth to the right of Fiat.
 3. Maruti car is between Ambassador and Bedford.
 4. Fiat which is third to the left of Ambassador, is at one end.
25. Which of the cars are on both the sides of cadillac car ?
(A) Ambassador and Maruti (B) Maruti and Fiat
(C) Fargo and Mercedes (D) Ambassador and Fargo
26. Which of the following statement is correct ?
(A) Maruti is next left of Ambassador (B) Bedford is next left of Fiat
(C) Bedford is at one end (D) Fiat is next second to the right of Maruti.

Space for Rough Work

Directions (Q.27 to Q.28): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer.

- (A) if the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
- (B) if the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
- (C) if the data in both statements I and II together are not sufficient to answer the question.
- (D) if the data in both statements I and II together are necessary to answer the question.
27. How many speeches were delivered in the two days' programme?
 I. 18 speakers were invited to give at least one speech (maximum of two speech), out of which one-sixth of the speakers could not come.
 II. One-third of the speakers who come gave two speeches each.
28. Statement: Six persons A, B, C, D, E, F are sitting in queue. All of them are facing south direction. Who among the following sits exactly between C and B?
 I. B sits at extreme end of the row. A sits second to the right of B. Only one person sits between A and C. E sits immediate right of C.
 II. E sits third to the right of D. Only one person sits between E and A. F sits to the right to E. C is an immediate neighbour of E.

Directions (Q.29 to Q.30): In this following questions two statements are given each followed by two conclusions I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements. Give answer:

- (A) If only conclusion I follows
 (B) If only conclusion II follows
 (C) If neither conclusion I nor II follows
 (D) If both conclusions I and II follow
29. **Statements:**
 All rackets are bats.
 All bats are wickets.
Conclusions:
 I. Some wickets are rackets.
 II. All wickets are rackets.
30. **Statements:**
 All radios are electric goods.
 All tablelamps are electric goods.
Conclusions:
 I. Some radios are tablelamps.
 II. Some tablelamps are radios.

Space for Rough Work

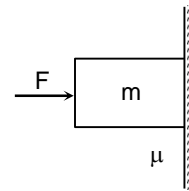
Recommended Time: 90 Minutes for Section – II

Section – II

PHYSICS – (PART – A)

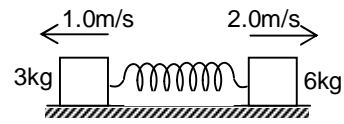
This part contains 14 Multiple Choice Questions number 31 to 44. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

31. A shell is fired from a cannon with a velocity V (m/s) at an angle θ with the horizontal direction. At the highest point in its path, it explodes into two pieces of equal mass. One of the pieces retraces its path to the cannon and the speed (in m/s) of the other piece immediately after the explosion is
- (A) $3V \cos \theta$ (B) $2V \cos \theta$
 (C) $\frac{3}{2} V \cos \theta$ (D) $\frac{\sqrt{3}}{2} V \cos \theta$
32. The minimum value of F for which the block remains in equilibrium is
- (A) $\frac{mg}{\mu}$ (B) $\frac{mg}{2\mu}$
 (C) $\frac{2mg}{\mu}$ (D) none of these
33. Under the action of a force, a 2 kg, body moves such that its position x as a function of time is given by $x = \frac{t^3}{3}$ the work done by the force in the first 2 sec is
- (A) 1600 J (B) 160 J
 (C) 16 J (D) 1.6 J



Space for Rough Work

34. Two blocks of mass 3 kg and 6 kg respectively are placed on a smooth horizontal surface. They are connected by a light spring of force constant $K = 200\text{N/m}$. Initially the spring is unstretched. The indicated velocities are imparted to the blocks. The maximum extension of the spring will be



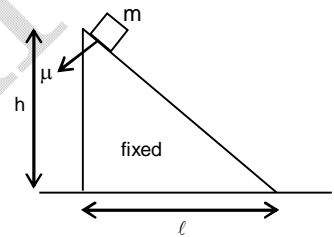
- (A) 30 cm (B) 25 cm
(C) 20 cm (D) 15 cm

35. A particle is moving with kinetic energy K , straight up an inclined plane of inclination α , the coefficient of friction being μ . The modulus of work done by friction before the particle comes to rest is:

- (A) $\frac{K\mu \cos \alpha}{\sin \alpha + \mu \cos \alpha}$ (B) $\frac{K \cos \alpha}{\sin \alpha + \mu \cos \alpha}$
(C) $\frac{K}{\sin \alpha + \mu \cos \alpha}$ (D) $\frac{K}{g(\sin \alpha + \mu \cos \alpha)}$

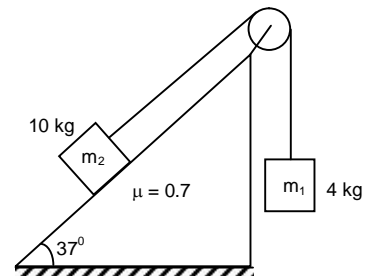
36. The block slides down the inclined plane when placed on the top of the incline. The speed of the block when it reaches the ground will be

- (A) $\sqrt{g\ell + \mu gh}$ (B) $\sqrt{2gh - 2\mu g\ell}$
(C) $\sqrt{2g\ell - 2\mu gh}$ (D) $\sqrt{2gh + 2\mu g\ell}$



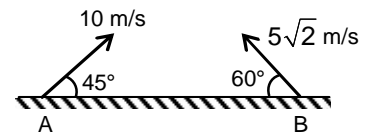
37. For the arrangement shown in figure, net contact force applied by incline plane on block of mass m_2 will be

- (A) 80N (B) $20\sqrt{17}$ N
(C) 20N (D) 100N



Space for Rough Work

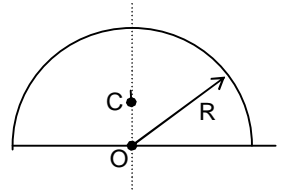
38. The path followed by A as seen from B will be
 (A) Parabolic (B) Straight line
 (C) Curvilinear (D) Cannot say



39. The equation of a wave is given by $y = a \sin \omega \left(\frac{x}{v} - k \right)$ where ω is angular velocity and v is the linear velocity. The dimensions of k will be
 (A) $[T^2]$ (B) $[T^{-1}]$
 (C) $[T]$ (D) $[LT]$
40. Two particles P and Q initially at rest, move towards each other under a mutual force of attraction. At the instant when the speed of P is v and the speed of Q is $2v$, the speed of the centre of mass of the system is
 (A) $3v$ (B) $1.5v$
 (C) v (D) zero
41. A man of mass M stands at one end of a plank of length L which lies at rest on a frictionless surface. The man walks to the other end of the plank. If the mass of the plank is $M/3$, the distance that the man moves relative to the ground is
 (A) $\frac{3L}{4}$ (B) $\frac{4L}{5}$
 (C) $\frac{L}{4}$ (D) $\frac{L}{3}$

Space for Rough Work

42. The centre of mass of a half disc shown is at C while O is the centre, thus OC is
- (A) $R/2$ (B) $2R/\pi$
 (C) $\frac{4R}{3\pi}$ (D) none of the above



43. A particle of mass m is moving with a velocity of $(4\hat{i} - \hat{j})$ m/s when it hits a wall and rebounds with a velocity $(\hat{i} + 3\hat{j})$ m/s. Then the impulse it receives is
- (A) $m(3\hat{i} + 4\hat{j})$ (B) $m(-3\hat{i} + 4\hat{j})$
 (C) $m(3\hat{i} - 4\hat{j})$ (D) $-m(3\hat{i} + 4\hat{j})$
44. A particle is moving on a curved path then
- (A) rate of change of speed may be zero.
 (B) rate of change of speed must not be zero.
 (C) the component of acceleration perpendicular to velocity must be zero.
 (D) the component of acceleration parallel to velocity must be zero.

Space for Rough Work

CHEMISTRY – (PART – B)

This part contains **14 Multiple Choice Questions** number **44 to 58**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

45. If the radius of the first orbit of hydrogen atom be a_0 , what will be the radius of its third orbit?
(A) $3a_0$ (B) $6a_0$
(C) $9a_0$ (D) $12a_0$
46. The energy change of which of the following processes is called ionization energy or ionization enthalpy? ['M' is a metal]
(A) $M(\text{solid}) \rightarrow M^+(\text{gas}) + e^-$ (B) $M(\text{solid}) + e^- \rightarrow M^-(\text{gas})$
(C) $M(\text{gas}) \rightarrow M^+(\text{gas}) + e^-$ (D) $M(\text{gas}) + e^- \rightarrow M^-(\text{gas})$
47. What is the bond angle of BeCl_2 molecule?
(A) 120° (B) 180°
(C) 109.5° (D) 90°
48. Which of the following change is called oxidation?
(A) $\text{MnO}_4^- \rightarrow \text{Mn}^{2+}$ (B) $\text{NO}_2^- \rightarrow \text{NO}_3^-$
(C) $\text{ClO}_3^- \rightarrow \text{Cl}^-$ (D) $\text{CrO}_4^{2-} \rightarrow \text{Cr}^{3+}$
49. The pressure produced by a definite mass of an ideal gas is
(A) directly proportional to volume at constant temperature
(B) inversely proportional to temperature at constant volume
(C) directly proportional to density at constant temperature
(D) directly proportional to volume and temperature at constant molecular mass
50. Which of the following electronic transition in hydrogen atom forms a spectral line which belongs to Balmer series?
(A) $n = 3 \rightarrow n = 1$ (B) $n = 4 \rightarrow n = 2$
(C) $n = 5 \rightarrow n = 3$ (D) $n = 6 \rightarrow n = 4$

Space for Rough Work

51. Which of the following atom can easily lose electron?
(A) Si (B) Na
(C) Mg (D) K
52. What is the hybridization of nitrogen in NCl_3 ?
(A) sp (B) sp^2
(C) sp^3 (D) sp^3d
53. What volume of 0.4 M HCl solution can completely dissolve 0.96 gram of magnesium according to this reaction?
$$\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$$

(A) 100 mL (B) 200 mL
(C) 400 mL (D) 800 mL
54. A container contains 4 moles of H_2 and 2 moles of CH_4 gases at 600 mm Hg and 80°C ? What is the partial pressure of CH_4 in the container?
(A) 300 mm Hg (B) 400 mm Hg
(C) 200 mm Hg (D) 100 mm Hg
55. What is the sum of azimuthal and principal quantum number of the valence electron of sodium?
(A) 5 (B) 2
(C) 4 (D) 3
56. Which of the following is the smallest atom of its group?
(A) Silicon (B) Sodium
(C) Chlorine (D) Nitrogen
57. Which of the following has maximum dipole moment?
(A) CO_2 (B) BF_3
(C) NF_3 (D) CF_4
58. $\text{MnO}_4^- + \text{C}_2\text{O}_4^{2-} + \text{H}^+ \longrightarrow \text{Mn}^{2+} + \text{CO}_2 + \text{H}_2\text{O}$
What would be the coefficient of $\text{C}_2\text{O}_4^{2-}$ ion if the above equation is balanced?
(A) 4 (B) 5
(C) 10 (D) 6

Space for Rough Work

MATHEMATICS – (PART – C)

This part contains **14 Multiple Choice Questions** number **59 to 72**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

59. Points on the line $x + y = 4$ that lie at a unit distance from the line $4x + 3y - 10 = 0$ are
(A) (3, 1) and (-7, 11) (B) (-3, 7) and (2, 2)
(C) (-3, 7) and (-7, 11) (D) none of these
60. A ray of light coming from the point (1, 2) is reflected at a point A on the x-axis and then passes through the point (5, 3). The coordinates of the point A are
(A) $\left(\frac{13}{5}, 0\right)$ (B) $\left(\frac{5}{13}, 0\right)$
(C) (-7, 0) (D) none of these
61. $\frac{\sin 7\theta + 6 \sin 5\theta + 17 \sin 3\theta + 12 \sin \theta}{\sin 6\theta + 5 \sin 4\theta + 12 \sin 2\theta}$ is equal to
(A) $2 \sin \theta$ (B) $2 \tan \theta$
(C) $2 \cos \theta$ (D) $2 \cot \theta$
62. Six arithmetic means are inserted between 1 and $\frac{9}{2}$, the 4th arithmetic mean is
(A) 2 (B) 1
(C) 3 (D) 4
63. If the sum of the 10 terms of an A.P. is 4 times to the sum of its 5 terms, then the ratio of first term and common difference is
(A) 1 : 2 (B) 2 : 1
(C) 2 : 3 (D) 3 : 2

Space for Rough Work

64. $\frac{\sec 8A - 1}{\sec 4A - 1}$ is equal to
- (A) $\frac{\tan 2A}{\tan 8A}$ (B) $\frac{\tan 8A}{\tan 2A}$
 (C) $\frac{\cot 8A}{\cot 2A}$ (D) none of these.
65. In a G.P. if the $(m + n)^{\text{th}}$ term be p and $(m - n)^{\text{th}}$ term be q then the m^{th} term is
- (A) \sqrt{pq} (B) $\sqrt{p/q}$
 (C) $\sqrt{q/p}$ (D) $\sqrt{p/q}$
66. If r be the ratio of the roots of the equation $ax^2 + bx + c = 0$, then $\frac{(r+1)^2}{r}$ is equal to
- (A) $\frac{a^2}{bc}$ (B) $\frac{b^2}{ac}$
 (C) $\frac{c^2}{ab}$ (D) None of these
67. If $\frac{x+8}{x+2} > 1$ then
- (A) $x > -2$ (B) $x < -2$
 (C) $x \leq -2$ (D) None of these
68. If $P(1, 2)$, $Q(4, 6)$, $R(5, 7)$ and $S(a, b)$ are the vertices of a parallelogram PQRS, then
- (A) $a = 2, b = 4$ (B) $a = 3, b = 4$
 (C) $a = 2, b = 3$ (D) $a = 3, b = 5$

Space for Rough Work

69. If a and b are roots of the equation $x^2 + x + 1 = 0$ then $a^2 + b^2 =$
 (A) 1 (B) 2
 (C) -1 (D) 3
70. If $y = \ln(\sqrt{x} + \sin^2 x)$, then $\frac{dy}{dx}$ is equal to
 (A) $\frac{1}{\sqrt{x} + \sin^2 x}$ (B) $\frac{1}{\sqrt{x} + \sin^2 x} \left(\frac{1}{2\sqrt{x}} + \sin 2x \right)$
 (C) $\frac{1}{\sqrt{x} + \sin^2 x} (\sin x + \cos^2 x)$ (D) $\frac{x + \cos x}{2(\sqrt{x} + \sin^2 x)}$
71. If $\alpha + \beta = \pi/2$ and $\beta + \gamma = \alpha$, then $\tan \alpha$ equals
 (A) $2(\tan \beta + \tan \gamma)$ (B) $\tan \beta + \tan \gamma$
 (C) $\tan \beta + 2 \tan \gamma$ (D) $2 \tan \beta + \tan \gamma$
72. Let a_n be the n^{th} term of an A.P. If $\sum_{r=1}^{100} a_r = \alpha$, and $\sum_{r=1}^{100} a_{r+1} = \beta$ then the common difference of A.P. is
 (A) $\beta - \alpha$ (B) $\alpha - \beta$
 (C) $\frac{\alpha - \beta}{100}$ (D) $\frac{\beta - \alpha}{100}$

Space for Rough Work

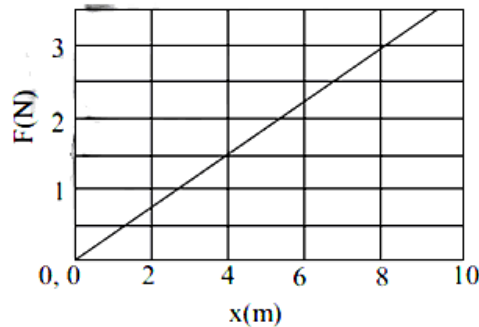
Recommended Time: 30 Minutes for Section – III

Section – III

PHYSICS – (PART – A)

This part contains **6 Multiple Choice Questions** number **73 to 78**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

73. A body of 0.5 kg moves along the positive x-axis under the influence of a varying force F (in Newtons) as shown below.



- If the speed of the object at $x = 4\text{m}$ is 3.16 ms^{-1} then its speed at $x = 8\text{m}$ is
 (A) 3.16 ms^{-1} (B) 9.3 ms^{-1} (C) 8 ms^{-1} (D) 6.8 ms^{-1}
74. A clay ball of mass m and speed v strikes another metal ball of same mass m , which is at rest. They stick together after collision. The kinetic energy of the system after collision is:
 (A) $mv^2/2$ (B) $mv^2/4$ (C) $2mv^2$ (D) mv^2
75. A ball falls vertically downward and bounces off a horizontal floor. The speed of the ball just before reaching the floor (u_1) is equal to the speed just after leaving contact with the floor (u_2); $u_1 = u_2$. The corresponding magnitudes of accelerations are denoted respectively by a_1 and a_2 . The air resistance during motion is proportional to speed and is not negligible. If g is acceleration due to gravity, then:
 (A) $a_1 < a_2$ (B) $a_1 = a_2 \neq g$ (C) $a_1 > a_2$ (D) $a_1 = a_2 = g$

Space for Rough Work

76. A boat crossing a river moves with a velocity v relative to still water. The river is flowing with a velocity $v/2$ with respect to the bank. The angle with respect to the flow direction with which the boat should move to minimize the drift is
(A) 30° (B) 60° (C) 150° (D) 120°
77. A girl holds a book of mass m against a vertical wall with a horizontal force F using her finger so that the book does not move. The frictional force on the book by the wall is:
(A) F and along the finger but pointing towards the girl.
(B) μF upwards where μ is the coefficient of static friction.
(C) mg and upwards.
(D) equal and opposite to the resultant of F and mg .
78. A firecracker is thrown with velocity of 30 ms^{-1} in a direction which makes an angle of 75° with the vertical axis. At some point on its trajectory, the firecracker split into two identical pieces in such a way that one piece falls 27 m far from the shooting point. Assuming that all trajectories are contained in the same plane, how far will the other piece fall from the shooting point? (Take $g = 10 \text{ ms}^{-2}$ and neglect air resistance)
(A) 63 m or 144 m (B) 28 m or 72 m
(C) 72 m or 99 m (D) 63 m or 117 m

Space for Rough Work

CHEMISTRY – (PART – B)

This part contains 6 Multiple Choice Questions number 79 to 84. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

79. Which of the following quantum number is different for the unpaired electrons of nitrogen?
(A) Principal quantum number (B) Azimuthal quantum number
(C) Magnetic quantum number (D) Spin quantum number
80. Which of the following contains species with the correct order of electron affinity?
(A) $F > Cl$ (B) $O > N$
(C) $O^- > S^-$ (D) $Na > Na^+$
81. What is the oxidation number of hydrogen in CaH_2 ?
(A) +1 (B) -1
(C) -2 (D) +2
82. Which of the following expression does **NOT** represent any gas velocity?
(A) $\sqrt{\frac{3RT}{M}}$ (B) $\sqrt{\frac{8RT}{\pi M}}$
(C) $\sqrt{\frac{2RT}{M}}$ (D) $\sqrt{\frac{3RT}{\pi M}}$
83. What is the orbital angular momentum for the unpaired electron of chlorine?
(A) $\frac{h}{\sqrt{2\pi}}$ (B) $\frac{\sqrt{2}\pi}{h}$
(C) $\frac{\sqrt{2}h}{\pi}$ (D) $\frac{2\pi}{h}$
84. Which of the following compound contains the largest anion?
(A) CaO (B) Ca_2C
(C) Ca_3N_2 (D) CaF_2

Space for Rough Work

MATHEMATICS – (PART – C)

This part contains **6 Multiple Choice Questions** number **85 to 90**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

85. If roots of $ax^2 + 2bx + c = 0$ are α and β , then the roots of the equation $cx^2 + 2bx + a = 0$ are
- (A) α and β (B) $\frac{1}{\alpha}, \frac{1}{\beta}$
 (C) $\frac{2}{\alpha}, \frac{2}{\beta}$ (D) $\frac{\alpha-1}{\alpha}, \frac{\beta-1}{\beta}$
86. $\lim_{x \rightarrow 0} \frac{4 \sin^3 x - 3 \sin x}{x}$
- (A) 3 (B) -3
 (C) $\frac{1}{3}$ (D) None of these
87. If $y = 3x^2 + 4x + 7$ then $\frac{dy}{dx}$ at $x = 0$
- (A) 0 (B) 4
 (C) 3 (D) 7
88. Shortest distance of (1, 2) from straight line $3x + 4y + 10 = 0$ is
- (A) $\frac{5}{21}$ (B) 10
 (C) 4 (D) $\frac{21}{5}$
89. If $A = \log_2 \log_2 \log_4 256$ then A is
- (A) 4 (B) 2
 (C) 1 (D) 6
90. If vertices of triangle ABC are A (1, 1), B (1, 5), C (4, 1) then it's circumcentre is
- (A) $\left(\frac{5}{2}, 3\right)$ (B) $\left(3, \frac{5}{2}\right)$
 (C) (1, 1) (D) (4, 1)

Space for Rough Work

FIITJEE SAMPLE PAPER – 2018

(Big Bang Edge Test / Talent Recognition Exam)

for students presently in

Class 11 (Paper 1)

ANSWERS

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