

FIITJEE RET – 6

EXTENDED_2019

IIT-2017 (P1)

DATE: 03.09.2018

Time: 3 hours

Maximum Marks: 183

INSTRUCTIONS:

A. General

1. This booklet is your Question Paper containing 54 questions.
2. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.
3. Fill in the boxes provided for Name and Enrolment No.
4. The answer sheet, a machine-readable Objective Response (ORS), is provided separately.
5. DO NOT TAMPER WITH / MULTILATE THE ORS OR THE BOOKLET.

B. Filling in the OMR:

6. The instructions for the OMR sheet are given on the OMR itself.

C. Question paper format & Marking Scheme

7. Each part has three sections as detailed in the following table:

Section	Question Type	Number of Questions	Category wise Marks Each Question				Maximum marks of the section
			Full Marks	Partial Marks	Zero Marks	Negative Marks	
1	One or more correct option (s)	7	+4 If only the bubble(s) corresponding to all the correct option(s) is(are) darkened	+1 For darkening a bubble corresponding to each correct option, provided NO incorrect option is darkened	0 If none of the bubbles is darkened	-2 In all other cases	28
2	Single digit integer (0–9)	5	+3 If only the bubble corresponding to the correct answer is darkened.	---	0 In all other cases	---	15
3	Single correct option	6	+3 If only the bubble corresponding to the correct option is darkened	---	0 If none of the bubbles is darkened	-1 In all other cases	18

Don't write / mark your answers in this question booklet.

If you mark the answers in question booklet, you will not be allowed to continue the exam.

NAME:

ENROLLMENT NO.:

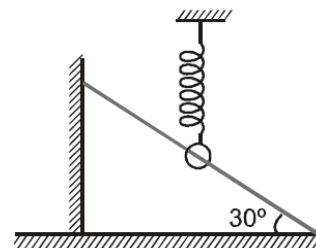
PAPER-I
PART I: PHYSICS
SECTION 1 (Maximum Marks: 28)

- * This section contains **SEVEN** questions.
- * Each question has **FOUR** options (A), (B), (C) and (D). **ONE OR MORE THAN ONE** of these four options is(are) correct.
- * For each question, darken the bubble(s) corresponding to all the correct option(s) in the ORS
- * For example, if (A), (C) and (D) are all the correct options for a question, darkening all these three will get +4 marks; darkening only (A) and (D) will get +2 marks; and darkening (A) and (B) will get -2 marks, as a wrong option is also darkened.

1. A light vertical chain is used to haul up an object of mass M attached to its lower end. The vertical pull applied has a magnitude F at $t = 0$ and it decreases at a uniform rate of $f \text{ Nm}^{-1}$ over a distance s through which the object is raised
- (A) The acceleration of the object is $\left(\frac{F - fy - Mg}{M}\right)$ when the object is raised through a distance y ($< s$)
- (B) The acceleration of the object is constant
- (C) The object has a velocity $\sqrt{\frac{2s}{M}\left(F - Mg - \frac{fs}{2}\right)}$ when it has been raised through a distance s
- (D) The object has velocity $\sqrt{\frac{s}{g}}$ when it has been raised through a distance s .
2. A small block of mass m is kept on a rough inclined surface of inclination θ fixed in a lift. The lift moves up with a uniform velocity v and the block does not slide on the incline. The work done by the force of friction on the block (w.r.t an observer standing on ground) in time t will be.
- (A) zero (B) $mgvt \cos^2 \theta$
- (C) $mgvt \sin^2 \theta$ (D) $mgvt \sin 2\theta$

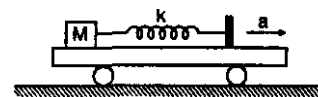
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3. A rod is fixed between a vertical wall and a horizontal surface. A smooth ring of mass 1 kg is released from rest which can move along the rod as shown. At the release point spring is vertical and relaxed. The natural length of the spring is $(\sqrt{3} + 1)$ m. Rod makes an angle of 30° with the horizontal. Ring again comes to rest when spring makes an angle of 30° with the vertical. ($g = 10 \text{ m/s}^2$): Then



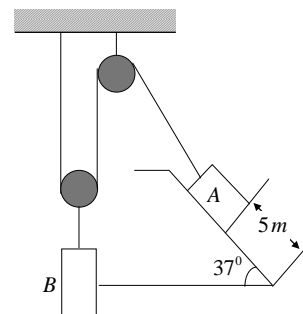
- (A) Force constant of the spring is $\frac{5}{2}(\sqrt{3} + 1) \text{ N/m}$
 (B) Maximum displacement of ring is $\frac{2}{\sqrt{3} - 1} \text{ m}$
 (C) Maximum extension in the spring is $(\sqrt{3} - 1) \text{ m}$
 (D) Normal reaction on ring due to rod when it again comes to rest is $\frac{5}{2}(\sqrt{3} - 1) \text{ N}$

4. A block of mass M is attached with a spring of spring constant k . The whole arrangement is placed on a vehicle as shown in the figure. If the vehicle starts moving towards right with an acceleration a (there is no friction anywhere), then:



- (A) maximum elongation in the spring is $\frac{Ma}{k}$ (B) maximum elongation in the spring is $\frac{2Ma}{k}$
 (C) maximum compression in the spring is $\frac{2Ma}{k}$ (D) maximum compression in the spring is zero

5. The blocks A and B shown in figure have masses $M_A = 5 \text{ kg}$ and $M_B = 4 \text{ kg}$. The system is released from rest. The speed of B after A has traveled a distance 1 m along the incline is



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

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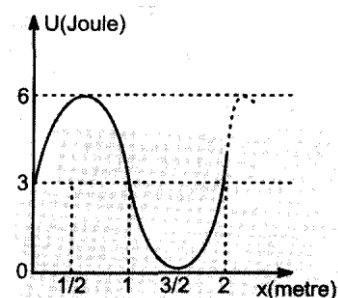
6. A body of mass 2 kg is moved from a point A to a point B by an external agent in a conservative force field. If the velocity of the body at the points A and B are 5 m/s and 3 m/s respectively and the work done by the external agent is -10 J, then the change in potential energy between points A and B is
 (A) -26 J (B) 36 J (C) 16 J (D) 6 J
7. A small body is lifted from floor and kept at a height. Choose the correct statement
 (A) one person says that the potential energy of the book is increased by 40 J and the other says it is increased by 5 J. One of them is necessarily wrong?
 (B) one person says final potential energy is 40 J and the other says it is 50 J. One of them is necessarily wrong.
 (C) as there is no change in kinetic energy, it is a violation of conservation of energy.
 (D) work done by external agency is equal to change in potential energy of the body.

SECTION 2 (Maximum Marks: 15)

- * This section contains **FIVE** questions.
- * The answer to each question is a **SINGLE DIGIT INTEGER** ranging from 0 to 9, both inclusive.
- * For each question, darken the bubble corresponding to the correct integer the ORS.

8. A force acting on a particle is $2\hat{i} + 3\hat{j}$ N. Work done by this force is zero, when the particle moves on the line $3y + kx = 5$. The value of k is

9. Potential energy (sinusoidal curve) is shown graphically for a particle. The potential energy does not depend on y and z co-ordinates. For range $0 < x < 2$ maximum value of conservative force (in magnitude) is $(\beta\pi)$. Find the value of β . [Here this force is corresponding to above potential energy and all units are in SI]

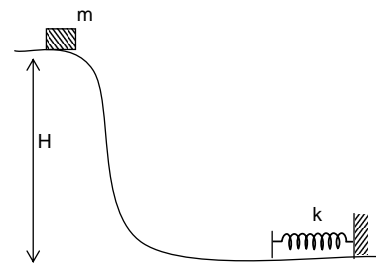


10. The displacement x (in m), of a particle of mass m (in kg) is related to the time t (in second) by $t = \sqrt{x} + 3$. Find the work done in first six second (in mJ)

Space for rough work

11. A spring of spring constant 'K' is fixed horizontally at the bottom of a hilly terrain as shown in the figure. A small block of mass m, initially at an altitude 'H' is gently pushed downwards. Assuming no friction anywhere, the maximum compression in the spring will be

$$\sqrt{\frac{4mgH}{nK}}. \text{ Find the value of } n?$$



12. A particle of mass 5 kg is acted upon by a force $\vec{F} = 2xy^2\hat{i} + 2x^2y\hat{j}$. It is displaced from origin to (1, 1) along the parabola $y = x^2$. The work done by this force is _____ Joule.

SECTION 3 (Maximum Marks: 18)

- * This section contains **SIX** questions of matching type.
- * This section contains **TWO** tables (each having 3 columns and 4 rows)
- * Based on the table, there are **THREE** questions
- * Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four options is correct.
- * For each question, darken the bubble corresponding to the correct option in the ORS.

Answer questions 13, 14 and 15 by appropriately matching the information given in the three columns of the following table.

Column-1 shows a uniform chain of mass m initially placed as shown in the diagram. It is moved from the initial position to the final position, where the chain is hanging vertically with its highest point touching the reference line (shown dotted). Column-2 lists the potential energy of the chain in the initial position relative to the reference line. Column-3 lists the work done by weight on the chain in slowly moving from the initial to the final position.

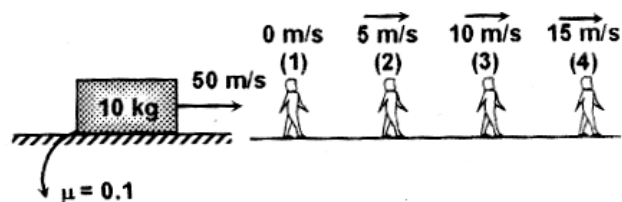
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	Column 1	Column 2	Column 3
(I)		(i) $mg\frac{R}{2}$	(P) $\frac{13}{6}mgR$
(II)	<p>Equilateral Triangle</p>	(ii) mgR	(Q) $\left(1 + \frac{1}{\sqrt{2}}\right)mgR$
(III)	<p>Cube</p>	(iii) $\frac{2}{3}mgR$	(R) $\left(\frac{\pi^2 + 4}{2\pi}\right)mgR$
(IV)	<p>Isosceles right Triangle</p>	(iv) $\frac{2}{\pi}mgR$	(S) $mgR\left(\frac{1}{2} + \frac{2}{\sqrt{3}}\right)$

13. Pick correct combination
 (A) IV \rightarrow ii \rightarrow P (B) IV \rightarrow i \rightarrow Q (C) III \rightarrow i \rightarrow Q (D) I \rightarrow iii \rightarrow R
14. Pick correct combination for maximum initial potential energy.
 (A) II \rightarrow ii \rightarrow Q (B) IV \rightarrow iii \rightarrow P (C) III \rightarrow iii \rightarrow P (D) I \rightarrow ii \rightarrow R
15. Pick correct combination for maximum work done.
 (A) I \rightarrow iv \rightarrow R (B) II \rightarrow i \rightarrow P (C) III \rightarrow ii \rightarrow S (D) IV \rightarrow iii \rightarrow Q

Space for rough work

In the given situation a block, of mass 10 kg is on the ground and given initial velocity 50 m/s. Observer – 1 is at rest, observer – 2 is moving with velocity 5 m/s, observer – 3 moving with velocity 10 m/s and observer – 4 moving with velocity 15 m/s in the direction as shown in the figure.



Column 1		Column 2 Work done on block due to friction (in 2 sec)		Column 3 Work done on ground due to friction (in 2 sec)	
(I)	Observer - 1	(i)	-880 J	(P)	- 300 J
(II)	Observer – 2	(ii)	-980 J	(Q)	- 200 J
(III)	Observer – 3	(iii)	-780 J	(R)	- 100 J
(IV)	Observer - 4	(iv)	-680 J	(S)	0 J

16. Match the column if work done by friction on ground is – 200 J
 (A) III → iii → Q (B) I → iv → Q (C) III → i → Q (D) II → ii → Q
17. Match the column if work done by friction on the block is – 680 J
 (A) IV → iv → R (B) IV → iv → P (C) I → iv → S (D) III → iv → P
18. Match the column for observer-2
 (A) II → iii → P (B) II → ii → Q (C) II → iv → S (D) II → i → R

Space for rough work

PART II: CHEMISTRY
SECTION 1 (Maximum Marks: 28)

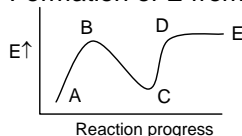
- * This section contains **SEVEN** questions.
- * Each question has **FOUR** options (A), (B), (C) and (D). **ONE OR MORE THAN ONE** of these four options is(are) correct.
- * For each question, darken the bubble(s) corresponding to all the correct option(s) in the ORS
- * For example, if (A), (C) and (D) are all the correct options for a question, darkening all these three will get +4 marks; darkening only (A) and (D) will get +2 marks; and darkening (A) and (B) will get -2 marks, as a wrong option is also darkened.

19. The hardness of water due to HCO_3^- is 122ppm.

Select the correct statement(s)

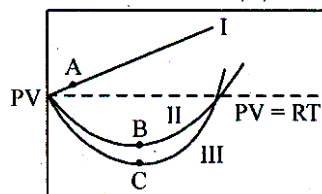
- (A) The hardness of water in terms of CaCO_3 is 200 ppm
- (B) The Hardness of water in terms of CaCO_3 is 100 ppm
- (C) The hardness of water in terms of CaCl_2 is 222 ppm
- (D) The hardness of water in terms of MgCl_2 is 95 ppm

20. Formation of E from A is shown through the graph. It can not be concluded that



- (A) reaction A to B is endothermic
- (B) reaction A to B as well as C to D is exothermic
- (C) reaction B to C is exothermic
- (D) $\Delta H = 0$ for the stage D to E

21. Consider isotherms, I, II and III. Select the correct statement.



- (A) For He gas isotherm I is obtained .
- (B) When force of attraction is negligible, isotherms II and III are followed after point B or C
- (C) When covolume is neglected isotherm II and III are followed A to B or A to C.
- (D) Intermolecular forces in H_2 gas are attractive.

Space for rough work

22. The vander Waal's constants of a gas are

$$a = 0.751 \text{ dm}^6 \text{ atm mol}^{-2}$$

$$b = 0.0226 \text{ dm}^3 \text{ mol}^{-1}$$

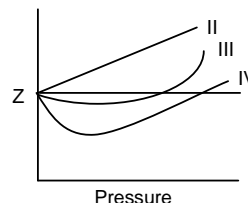
Hence,

(A) $V_c = 0.678 \text{ dm}^3 \text{ mol}^{-1}$
 (C) $P_c = 54.5 \text{ atm}$

(B) $V_c = 0.0678 \text{ dm}^3 \text{ mol}^{-1}$
 (D) $T_c = 120 \text{ K}$

23. For the non-zero volume of molecules having no forces of attraction, the variation of compressibility factor with pressure cannot be represented by the graph(s)

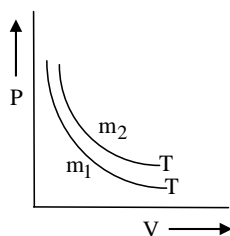
- (A) I (B) II
 (C) III (D) IV



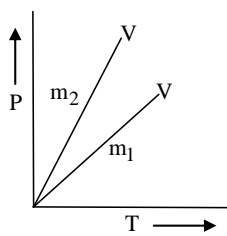
24. Indicate the correct statement for equal volumes of $N_2(g)$ and $CO_2(g)$ at $25^\circ C$ and 1 atm.

- (A) The average translational K.E. per molecule is the same for N_2 and CO_2
 (B) The rms speed remains constant for both N_2 and CO_2
 (C) The density of N_2 is less than that of CO_2
 (D) The total translational K.E. of both N_2 and CO_2 is the same

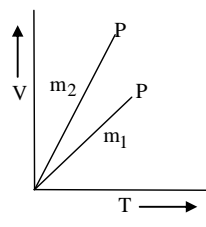
25. If m_1, m_2 are masses of an ideal gas, then which of the graph represents $m_2 > m_1$



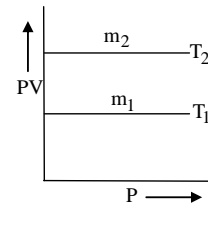
(A)



(B)



(C)



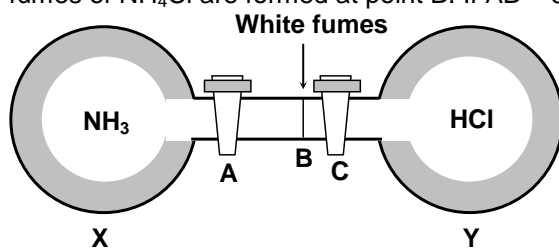
(D)

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SECTION 2 (Maximum Marks: 15)

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- * For each question, darken the bubble corresponding to the correct integer the ORS.

26. When 100 ml ozonised oxygen is passed through turpentine oil, there was a reduction of volume by 20 ml. If 100 ml of such mixture is heated what will be the increase in volume is x. Then $\frac{x}{10}$ is.
27. The mass of molecule A is twice the mass of molecule B. The rms speed of A is twice the rms speed of B. If two samples of A and B contain same no. of molecules, what will be the ratio $\frac{P_A}{P_B}$, P_A & P_B are the pressures of two samples in separate containers of equal volume ?
28. The stopcock of the bulbs X (containing NH_3) and Y (containing HCl) are opened simultaneously, white fumes of NH_4Cl are formed at point B. If $AB = 36.5$ cm, then BC is approximately x^2 what is x ?



29. A box of 1L capacity is divided into two equal compartments by a thin partition which are filled with 6g H_2 and 16g CH_4 respectively. The pressure in each compartment is recorded as 2 atm. The total pressure when partition is removed will be x. What is x ?
30. ${}^7_4\text{Be}$ captures a K electron in to its nucleus what will be the mass number of resulting nuclide.

Space for rough work

SECTION 3 (Maximum Marks: 18)

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- * Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four options is correct.
- * For each question, darken the bubble corresponding to the correct option in the ORS.

Column 1		Column 2		Column 3	
(I)	Inversion temperature	(i)	The temperature at which a real gas behaves like an ideal gas.	(P)	$\frac{2a}{Rb}$
(II)	Boyle temperature	(ii)	Molar volume = 22.4 L mol ⁻¹	(Q)	$\frac{8a}{27Rb}$
(III)	Critical temperature	(iii)	The temperature above which any gas cannot be liquefied howsoever high pressure is applied	(R)	P = 1 atm T = 273 K
(IV)	STP	(iv)	Temperature at which every gas shows neither heating nor cooling effect when allowed to expand adiabatically according to Joule-Thomson effect	(S)	$\frac{a}{Rb}$

31. Which is correct combination
 (A) I, iv, P (B) I, iii, P (C) II, i, P (D) II, ii, S
32. Which is correct combination
 (A) III, iv, P (B) III, iv, Q (C) III, ii, S (D) III, I, Q
33. Which is incorrect combination
 (A) II, i, P (B) II, i, S (C) I, iv, P (D) IV, ii, R

Space for rough work

Column 1		Column 2		Column 3	
(I)	x is plotted against t in zero order reaction	(i)	Slope = $-k/2.303$	(P)	Intercept = 0
(II)	$\log(a-x)$ is plotted against t in first order reaction	(ii)	Slope = $2k$	(Q)	Intercept = $1/a$
(III)	$(a-x)^{-1}$ is plotted against t in second order reaction	(iii)	Slope = $-k$ (when log is natural)	(R)	Intercept = $1/a^2$
(IV)	$(a-x)^{-2}$ is plotted against t in second order reaction	(iv)	Slope = $-k$	(S)	Intercept = $\log a$

34. Which is correct combination
 (A) I, iv, P (B) I, iv, Q (C) II, I, R (D) II, ii, S
35. Which is correct 2nd order reaction.
 (A) III, ii, Q (B) III, iv, Q (C) III, iii, R (D) III, iv, S
36. Which is incorrect combination
 (A) IV, iii, R (B) I, iv, Q (C) II, ii, S (D) II, iii, S

Space for rough work

PART III: MATHEMATICS
SECTION 1 (Maximum Marks: 28)

- * This section contains **SEVEN** questions.
- * Each question has **FOUR** options (A), (B), (C) and (D). **ONE OR MORE THAN ONE** of these four options is(are) correct.
- * For each question, darken the bubble(s) corresponding to all the correct option(s) in the ORS
- * For example, if (A), (C) and (D) are all the correct options for a question, darkening all these three will get +4 marks; darkening only (A) and (D) will get +2 marks; and darkening (A) and (B) will get -2 marks, as a wrong option is also darkened.

37. The locus of the midpoint of the focal distance of a variable point moving on the parabola $y^2 = 4ax$ is a parabola whose
 (A) latus rectum is half rectum of the original parabola
 (B) vertex is $\left(\frac{a}{2}, 0\right)$
 (C) directrix is y-axis
 (D) focus has coordinates (a, 0)
38. The parabola $y^2 = 4x$ and the circle having its centre at (6, 5) intersect at right angle. The possible point of intersection of these curves can be
 (A) (9, 6) (B) $(2, \sqrt{8})$ (C) (4, 4) (D) $(3, 2\sqrt{3})$
39. The equation of the line that touches the curves $y = x|x|$ and $x^2 + (y - 2)^2 = 4$, where $x \neq 0$, is
 (A) $y = 4\sqrt{5}x + 20$ (B) $y = 4\sqrt{3}x - 12$ (C) $y = 0$ (D) $y = -4\sqrt{5}x - 20$
40. If a chord, which is not a tangent, of parabola $y^2 = 16x$ has the equation $2x + y = p$, and midpoint (h, k), then which of the following is (are) possible value(s) of p, h and k ?
 (A) $p = 5, h = 4, k = -3$ (B) $p = -1, h = 1, k = -3$ (C) $p = -2, h = 2, k = -4$ (D) $p = 2, h = 3, k = -4$
41. For the function $f(x) = \frac{e^x}{1 + e^x}$, which of the following hold good ?
 (A) f is monotonic in its entire domain
 (B) maximum of f is not attained even though f is bounded
 (C) f has a point of inflection
 (D) f has one asymptote

Space for rough work

42. The function $y = \frac{2x-1}{x-2}$, ($x \neq 2$),
 (A) is its own inverse (B) decreases at all values of x in the domain
 (C) has a graph entirely above the x -axis (D) is unbounded
43. Let $g'(x) > 0$ and $f'(x) < 0 \forall x \in \mathbb{R}$. Then
 (A) $(f(x+1)) > g(f(x-1))$ (B) $f(g(x-1)) > f(g(x+1))$
 (C) $g(f(x+1)) < g(f(x-1))$ (D) $g(g(x+1)) < g(g(x-1))$

SECTION 2 (Maximum Marks: 15)

- * This section contains **FIVE** questions.
 * The answer to each question is a **SINGLE DIGIT INTEGER** ranging from 0 to 9, both inclusive.
 * For each question, darken the bubble corresponding to the correct integer the ORS.

44. Consider $P(x)$ to be a polynomial of degree 5 having extremum at $x = -1, 1$ and
 $\lim_{x \rightarrow 0} \left(\frac{P(x)}{x^3} - 2 \right) = 4$. Then the value of $[P(1)]$ is
 (where $[.]$ denotes greatest integer function)
45. Let $f(x) = \begin{cases} |x^3 + x^2 + 3x + \sin x| \left(3 + \sin \frac{1}{x} \right), & x \neq 0 \\ 0, & x = 0 \end{cases}$. Then the number of points where $f(x)$ attains its
 minimum value is
46. A right triangle is drawn in a semicircle of radius $\frac{1}{2}$ with one of its legs along the diameter. If the maximum
 area of the triangle is M , then the value of $32\sqrt{3} M$ is
47. The locus of the midpoints of the portion of the normal to the parabola $y^2 = 16x$ intercepted between the
 curve and the axis is another parabola whose latus rectum is
48. If the circle $(x-6)^2 + y^2 = r^2$ and the parabola $y^2 = 4x$ have maximum number of common chords, then the
 least integral value of r is

Space for rough work

SECTION 3 (Maximum Marks: 18)

- * This section contains **SIX** questions of matching type.
- * This section contains **TWO** tables (each having 3 columns and 4 rows)
- * Based on the table, there are **THREE** questions
- * Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four options is correct.
- * For each question, darken the bubble corresponding to the correct option in the ORS.

49 – 51: Answer the following questions by appropriately matching the information given in the three columns of the following table:

Column I, II and III contains the information about the parabola $y^2 = 12x$.

Column 1	Column 2	Column 3
(I) If AB is the focal chord, S is the focus and $SA = 4$, then $SB = 12$	(i) From point $(-3, -4)$ tangents to parabola are perpendicular	(P) Equation of tangent can be $3x - y + 1 = 0$
(II) Tangents are drawn from a point on the directrix. Least length of chord of contact intercepted by the parabola is 15	(ii) From point $(2, 3)$ only one normal can be drawn to parabola	(Q) Equation of normal can be $2x - y - 36 = 0$
(III) Length of focal chord passing through the point $(12, 12)$ is $\frac{75}{4}$	(iii) Chord $3x + y - 5 = 0$ is bisected at point $(1, 2)$	(R) Equation of chord can be $2x + y - 8 = 0$ at the extremities of which tangents are perpendicular.
(IV) Length of focal chord $x + y - 3 = 0$ is 20	(iv) From point $(1, 4)$ two tangents can be drawn to parabola	(S) Equation of chord which subtends right angle at the vertex can be $x - 2y - 12 = 0$

49. Which of the following options is the only **CORRECT** combination ?
 (A) (I) (iii) (Q) (B) (II) (ii) (S) (C) (III) (i) (P) (D) (III) (iv) (R)
50. Which of the following options is the only **INCORRECT** combination ?
 (A) (I) (i) (P) (B) (I) (ii) (Q) (C) (III) (iv) (S) (D) (III) (ii) (R)
51. Which of the following options is the only **INCORRECT** combination ?
 (A) (I) (ii) (Q) (B) (I) (iv) (S) (C) (III) (ii) (P) (D) none of these

Space for rough work

52 – 54: By observing column 1, column 2, column 3 establish the relation and answer to the questions below:
 Column I contains the function $y = f(x)$.
 Column II and III contains information about functions $y = f(x)$ which are given in column I

Column 1	Column 2	Column 3
(I) $f(x) = \sin x - x^2 + 1$	(i) $f(x)$ has point of minima	(P) $f(x) = 0$ has one root
(II) $f(x) = x \log_e x - x + e^{-x}$	(ii) $f(x)$ has point of maxima	(Q) $f(x) = 0$ has two roots
(III) $f(x) = -x^3 + 2x^2 - 3x + 1$	(iii) $f(x)$ always increases	(R) Graph of $y = f(x)$ is either always concave upward or always concave downward
(IV) $f(x) = \cos \pi x + 10x + 3x^2 + x^3$	(iv) $f(x)$ always decreases	(S) Graph of $y = f(x)$ changes its concavity

52. Which of the following is the only **INCORRECT** combination ?
 (A) (I) (ii) (Q) (B) (II) (i) (R) (C) (III) (iv) (S) (D) (IV) (iii) (R)
53. Which of the following is the only **INCORRECT** combination ?
 (A) (II) (i) (Q) (B) (III) (iv) (P) (C) (IV) (iii) (P) (D) (I) (i) (R)
54. Which of the following options is the **INCORRECT** combination ?
 (A) (I) (ii) (R) (B) (IV) (iii) (S) (C) (II) (iii) (P) (D) none of these

Space for rough work

FIITJEE RET – 6

EXTENDED_2019

IIT-2017 (P1)

DATE: 03.09.2018

ANSWERS

PHYSICS

- | | | | |
|---------|-------|----------|---------|
| 1. A, C | 2. C | 3. A,B,D | 4. B, D |
| 5. C | 6. D | 7. A, D | 8. 2 |
| 9. 3 | 10. 0 | 11. 2 | 12. 1 |
| 13. B | 14. C | 15. A | 16. A |
| 17. B | 18. D | | |

CHEMISTRY

- | | | | |
|-------------|-------------|-------------|-------------|
| 19. A,C | 20. BONUS | 21. A, B, C | 22. B, C, D |
| 23. A, C, D | 24. A, C, D | 25. A, B, C | 26. 1 |
| 27. 8 | 28. 5 | 29. 2 | 30. 7 |
| 31. A | 32. BONUS | 33. A | 34. BONUS |
| 35. BONUS | 36. B or C | | |

MATHEMATICS

- | | | | |
|----------|---------|--------|-------|
| 37. ABCD | 38. AC | 39. AB | 40. D |
| 41. ABC | 42. ABD | 43. BC | 44. 2 |
| 45. 1 | 46. 9 | 47. 4 | 48. 5 |
| 49. D | 50. A | 51. D | 52. D |
| 53. D | 54. C | | |