

# FIITJEE INTERNAL TEST

## COMMON TEST – II

Batches: NWCMPA920M1, N1, A1, B1, C1 & NWCMPD920A1

IIT- JEE 2020

QP CODE: 123210

Time: 3 hours

Maximum Marks: 186

- Please read the instructions carefully. You are allotted 5 minutes specially for this purpose.
- You are not allowed to leave the examination hall before end of the test.
- Use Blue/Black Ball Point Pen only for writing particulars on Side-1 and Side-2 of the Answer Sheet. Use to Pencil is strictly prohibited.

### Instructions

**Forthcoming Exam –  
Big Bang Edge Test  
on 20<sup>th</sup> Oct. 2019**

#### Note:

1. The question paper contains 3 sections (Sec-1, Chemistry, Sec-II, Physics & Sec-III, Mathematics.)
2. Each section is divided into one part, **Part-A**.
3. **Part – A** contains 18 questions which are further divided as follows:
  - ❖ **Q. 1 – 6** are multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which **only one is correct**.
  - ❖ **Q. 7 – 14** are multiple correct answer type questions. Each question has four choices (A), (B), (C) and (D), out of which **one or more answer(s) is/are correct**.
  - ❖ **Q. 15 – 18** contains 2 Paragraphs. Based upon each paragraph, 2 Multiple Choice Questions have to be answered. Each question has **Only One Correct** answer.

#### Marking Scheme

1. For each question in the group **Q. 1 – 6 to Part – A** you will be awarded **3 marks** if you have darkened only the bubble corresponding to the answer and zero marks if no bubble is darkened. In all other cases, **minus one (-1) mark will be awarded**.
2. For each question in the group **Q. 7 – 14 of Part – A** contains 8 Multiple Choice Questions which have One or More Correct answer. Each question carries **+4 marks** for correct answer and **- 1 marks** for wrong answer.  
For each question in the group **Q. 7 – 14 of PART – A** you will be awarded  
*Full Marks: +4* If only the bubble(s) corresponding to all the correct options(s) is (are) darkened.  
*Partial Marks: +1* For darkening a bubble corresponding to **each correct option**, provided NO incorrect option is darkened.  
*Zero Marks: 0* If none of the bubbles is darkened.  
*Negative Marks: -1* In all other cases.  
For example, if **(A), (C) and (D)** are all the correct options for a question, darkening all these three will result in **+4 marks**; darkening only **(A) and (D)** will result in **+2 marks**; and darkening **(A) and (B)** will result in **-1 marks**, as a wrong option is also darkened.
3. For each question in the group **Q. 15 – 18 of Part – A** you will be awarded **3 marks** if you have darkened all the bubble(s) corresponding to the correct answer and **zero marks** if no bubble is darkened. No negative marks will be awarded in this section.

Name of the Candidate :

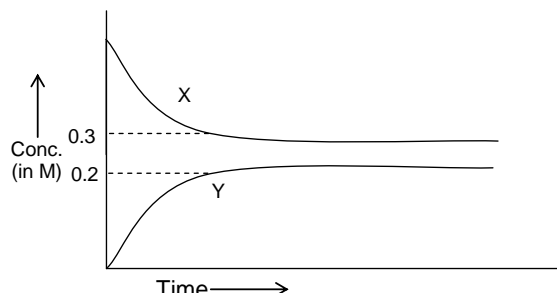
Enrolment Number :

## Section – I (Chemistry)

## PART – A

## (Single Correct Choice Type)

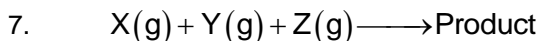
This section contains 6 multiple choice questions. Each question has four choices (A), (B), (C) and (D) out of which only ONE option is be correct.

1.  $2\text{NH}_3(\text{g}) \longrightarrow \text{N}_2(\text{g}) + 3\text{H}_2(\text{g})$   
If the rate of above reaction is  $0.4 \text{ mol L}^{-1}\text{s}^{-1}$  at a certain temperature, what will be the value of the rate of formation of  $\text{H}_2$  gas in  $\text{mol L}^{-1}\text{s}^{-1}$  unit?  
(A) 0.2 (B)  $\frac{0.4}{3}$  (C) 1.2 (D) 0.6
2. If the equilibrium constant  $K_P$  of the following reaction is  $0.2 \text{ atm}^{-1}$ , what is the partial pressure of  $\text{CO}_2$  gas at equilibrium?  
 $\text{CaO}(\text{s}) + \text{CO}_2(\text{g}) \rightleftharpoons \text{CaCO}_3(\text{s})$   
(A) 4 atm (B) 5 atm (C) 2 atm (D) 0.2 atm
3. The half-life of a first order decomposition reaction is 8 min. What fraction of the reactant left undecomposed after 32 minutes from the start of the reaction?  
(A)  $\frac{1}{4}$  (B)  $\frac{1}{16}$  (C)  $\frac{1}{32}$  (D)  $\frac{1}{64}$
4. What is the unit of  $K_P$  of the following reaction?  
 $\text{NO}_2(\text{g}) + \text{NO}(\text{g}) \rightleftharpoons \text{N}_2\text{O}_3(\ell)$   
(A) atm (B)  $\text{atm}^{-2}$  (C)  $\text{atm}^2$  (D)  $\text{atm}^{-1}$
5.   
What will be the value of equilibrium constant of the reaction which graph is given above?  
[The reaction involves one mole of reactant and one mole of product]  
(A)  $\frac{1}{3}$  (B)  $\frac{3}{2}$  (C)  $\frac{2}{3}$  (D)  $\frac{1}{2}$
6. In the expression,  $\ln \frac{K_{P_2}}{K_{P_1}} = \frac{X}{R} \left[ \frac{T_2 - T_1}{T_1 T_2} \right]$ , the term represented by 'X' is  
(A) entropy change (B) free energy change (C) enthalpy change (D) work done

*space for rough work*

**(Multiple Correct Choice Type)**

This section contains 8 **multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONE OR MORE** may be correct.



The rate equation of above reaction is expressed as:

$$\text{Rate} = \frac{k[X][Y]^2}{[Z]}$$

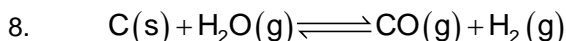
Choose correct statement(s) regarding the reaction.

(A) The overall order of the reaction is two

(B) The unit of rate constant is  $\text{mol}^{-1} \text{L s}^{-1}$

(C) The rate doubles if the concentration of 'X' is doubled keeping the conc. of other reactants fixed

(D) the reaction rate increases by increasing the concentration of Z



Under which of the following conditions the reaction will favour formation of CO and H<sub>2</sub> gases.

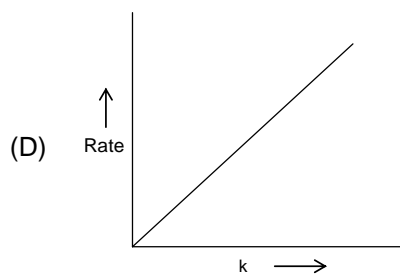
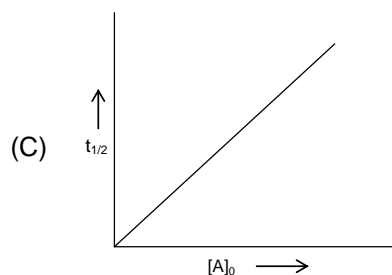
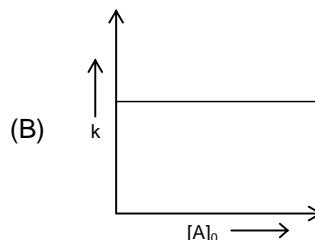
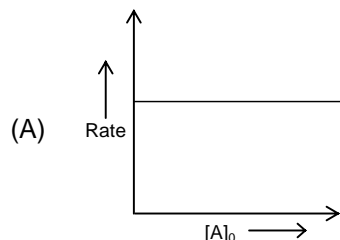
(A) Decreasing pressure

(B) Adding an inert gas at constant volume

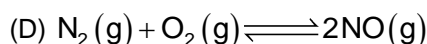
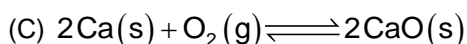
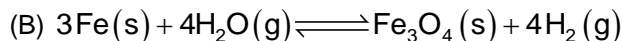
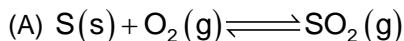
(C) Adding carbon

(D) Removing H<sub>2</sub>O(g)

9. Which of the following graph(s) is/are incorrect for a zero order reaction?



10. For which of the following reaction  $K_P = K_C$ ?



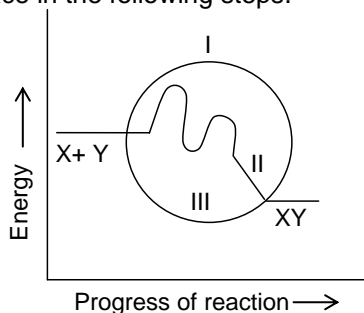
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11. The correct statement(s) regarding a first order reaction is/are  
 (A)  $t_{75\%} = 2 \times t_{\frac{1}{2}}$   
 (B)  $t_{\frac{1}{2}}$  does not change as long as temperature is constant  
 (C) rate constant and  $t_{\frac{1}{2}}$  have same units  
 (D) rate of reaction depends on concentration
12.  $\text{NH}_3$  dissociates through the following reaction.  $2\text{NH}_3(\text{g}) \rightleftharpoons \text{N}_2(\text{g}) + 3\text{H}_2(\text{g})$ . Initially only  $\text{NH}_3$  was taken in a container. When the reaction attained equilibrium, the molecular mass of the equilibrium mixture was found to be 11.33. The degree of dissociation( $\alpha$ ) of  $\text{NH}_3$  can be determined from the following relation.

$$\alpha = \frac{D - d}{(n - 1)d}$$

'D' and 'd' are the initial and equilibrium vapour density terms respectively. Choose correct statements from the following.

- (A) The value of D is 17  
 (B) The value of d is 5.665  
 (C) ' $\alpha$ ' is 0.5  
 (D) All the terms like D, d and  $\alpha$  are unit less
13. The exothermic reaction between reactants X and Y produces product XY. The reaction can take place in the following steps.

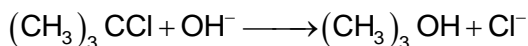


Choose correct statement(s) regarding the reaction.

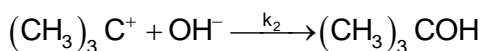
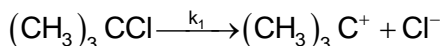
- (A) The rate of reaction is very slow through path – I as compared to other paths  
 (B) Path – II is a catalyst induced reaction  
 (C) Along Path- III, the rate of reaction decreases by increasing temperature  
 (D) Path – I is followed with the lowest activation energy
14. How does the direction of a reversible reaction change with  $\Delta G$ ?  
 (A) If  $\Delta G < 0$ , reaction proceeds along forward direction.  
 (B) If  $\Delta G > 0$ , reaction proceeds towards backward direction.  
 (C) If  $\Delta G = 0$ , reaction proceeds towards both direction with same rate.  
 (D) If  $\Delta G \gg 0$ ,  $K_{\text{equ}} = 1$

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**Comprehension Type**  
Paragraph for question nos. 15 – 16

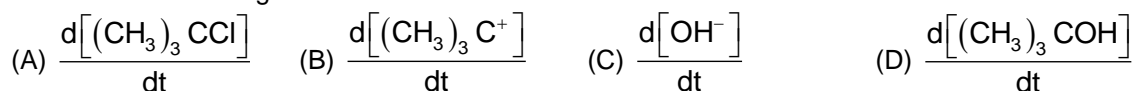


The mechanism of above reaction is given below

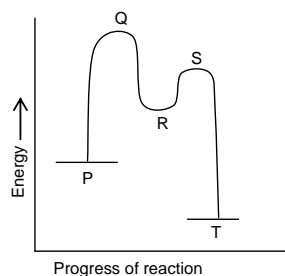


Answer the following questions on the basis of above write up.

15. Which of the following has the lowest value?



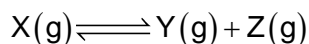
- 16.



What position will  $(\text{CH}_3)_3\text{C}^+$  occupy in the above energy profile of above reaction?

- (A) P                      (B) Q                      (C) R                      (D) S

**Paragraph for question nos. 17 – 18**



Above reaction takes place in a one litre vessel at a certain temperature. The number of moles of X, Y and Z gases are same at equilibrium. The equilibrium constant  $K_c$  is  $8 \text{ mol L}^{-1}$ .

17. If two moles of X, two moles of Y and 4 moles of Z are taken in a one litre vessel, the reaction will proceed
- (A) towards forward direction                      (B) towards backward direction  
(C) towards both direction                      (D) unpredictable
18. How many moles of Y and Z are removed at equilibrium so that the concentration of X becomes  $5 \text{ mol L}^{-1}$  at the new equilibrium?
- (A) 4.68                      (B) 2.39                      (C) 6.12                      (D) 5.98

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## Section – II (Physics)

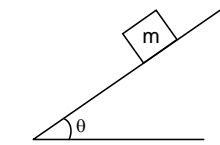
## PART – A

## (Single Correct Choice Type)

This section contains 6 multiple choice questions. Each question has four choices (A), (B), (C) and (D) out of which only **ONE** option is be correct.

1. A block of mass  $m$  is resting on an inclined rough plane of inclination  $\theta$ . The coefficient of friction between block and inclined plane is  $\mu$  ( $\mu > \tan \theta$ ). The number of force or forces experienced by the block will be

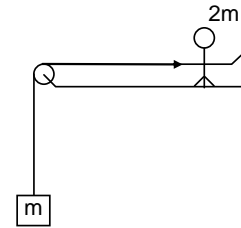
(A) 1 (B) 2 (C) 3



(D) None of these

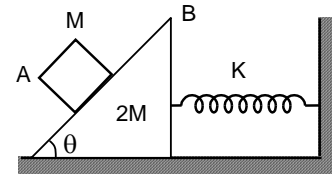
2. A man of mass  $2m$  is pulling up a block of mass  $m$  with constant velocity. The acceleration of man is (neglect any friction).

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



3. A block A of mass  $M$  rests on a wedge B of mass  $2M$  of inclination  $\theta$ . There is sufficient friction between A and B so that A does not slip on B. If there is no friction between B and ground, the compression in spring is

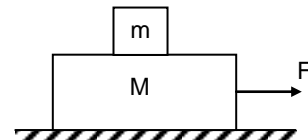
(A)  $\frac{Mg \cos \theta}{K}$  (B)  $\frac{Mg \cos \theta \sin \theta}{K}$  (C)  $\frac{Mg \sin \theta}{K}$  (D) zero



4. The reading of weighing machine (calibrated in kg) gives  
(A) weight (B) mass (C) normal reaction (D) none of these

5. A block of mass  $m$  is placed on another block of mass  $M$ , which itself is lying on a horizontal surface. The coefficient of friction between two blocks is  $\mu_1$  and that between the block of mass  $M$  and horizontal surface is  $\mu_2$ . What maximum horizontal force can be applied to the lower block so that the two blocks move without separation?

(A)  $(M + m) (\mu_2 - \mu_1)g$   
(B)  $(M - m) (\mu_2 - \mu_1)g$   
(C)  $(M - m) (\mu_2 + \mu_1)g$   
(D)  $(M + m) (\mu_2 + \mu_1)g$



space for rough work

6. Two identical particles A and B, each of mass  $m$ , are interconnected by a spring of stiffness  $k$ . If the particle B experiences a force  $F$  and the elongation of the spring is  $x$ , the acceleration of particle B relative to particle A is equal to

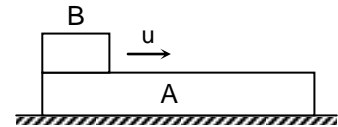
(A)  $\frac{F}{2m}$  (B)  $\frac{F - kx}{m}$   
 (C)  $\frac{F - 2kx}{m}$  (D)  $\frac{kx}{m}$



**(Multiple Correct Choice Type)**

This section contains 8 **multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONE OR MORE** may be correct.

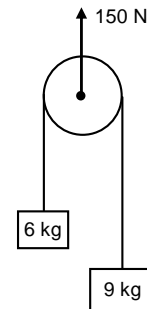
7. A long block A is at rest on a smooth horizontal surface. A small block B, whose mass is half of A, is placed on A at one end and projected along A with velocity  $u$ . The coefficient of friction between the blocks is  $\mu$ .



- (A) the blocks will reach a final common velocity  $\frac{u}{3}$ .  
 (B) the time in which blocks reach a common velocity from just after projection is  $\frac{2u}{3\mu g}$ .  
 (C) before the blocks reach a common velocity, the magnitude acceleration of A relative to B is  $\frac{2}{3}\mu g$ .  
 (D) before the blocks reach a common velocity, the magnitude acceleration of A relative to B is  $\frac{3}{2}\mu g$ .

8. As situation shown in figure, choose the correct option(s) (take  $g = 10 \text{ m/s}^2$  downward)

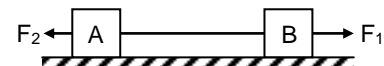
- (A) the acceleration of pulley is  $\frac{5}{6} \text{ m/s}^2$  upward.  
 (B) the acceleration of pulley is  $\frac{5}{12} \text{ m/s}^2$  upward.  
 (C) the acceleration of pulley is 0.  
 (D) tension in the string which connects the masses is 75 N.



9. Two blocks A and B are placed rough horizontal surface and are connected by a string. If two unequal force  $F_1$  &  $F_2$  are applied ( $F_1 > F_2$ ) on block A and B in opposite direction.

Choose the correct alternatives.

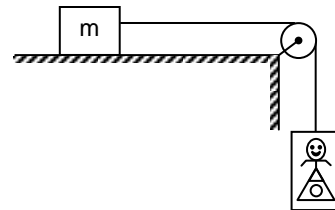
- (A) friction on both the blocks act leftward  
 (B) friction on B always act leftward  
 (C) friction on A may have any direction i.e. left or right  
 (D) tension on the string may be zero



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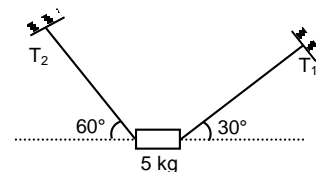
10. Which of the following are correct?
- (A) A parachutist of weight  $W$  strikes the ground with his legs and comes to rest with an upward acceleration of magnitude  $3g$ . Force exerted on him by ground during landing is  $4W$ .
  - (B) Two massless spring balances are hung vertically in series from a fixed point and a mass  $M$  kg is attached to the lower end of the lower spring balance. Each spring balance reads  $M$  kgf
  - (C) A rough vertical board has an acceleration  $a$  along the horizontal direction so that a block of mass  $m$  pressing against its vertical side does not fall. The coefficient of friction between the block and the board is greater than  $g/a$ .
  - (D) A man is standing at a weighing machine. If man jumps away from it the reading of the weighing machine first increases and then decreases to zero.

11. In the figure, a man of true mass  $M$  is standing on a weighing machine placed in a cabin. The cabin is joined by a string with a body of mass  $m$ . Assuming no friction, and negligible mass of cabin and weighing machine, the measured mass of man is (normal force between the man and the machine is proportional to the mass)



- (A) Measured mass of man is  $\frac{Mm}{(M+m)}$
- (B) Acceleration of man is  $\frac{mg}{(M+m)}$
- (C) Acceleration of man is  $\frac{Mg}{(M+m)}$
- (D) Measured mass of man is  $M$ .

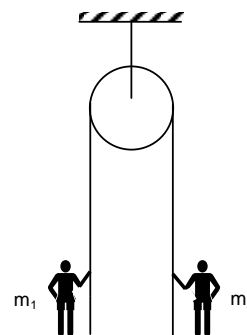
12. A body of mass  $5\text{ kg}$  is suspended by the strings making angles  $60^\circ$  and  $30^\circ$  with the horizontal as shown in the figure ( $g = 10\text{ ms}^{-2}$ ). Then



- (A)  $T_1 = 25\text{ N}$
- (B)  $T_2 = 25\text{ N}$
- (C)  $T_1 = 25\sqrt{3}\text{ N}$
- (D)  $T_2 = 25\sqrt{3}\text{ N}$

13. The force exerted by the floor of an elevator on the foot of a person standing there is more than the weight of the person if the elevator is
- (A) going up and slowing down.
  - (B) going up and speeding up.
  - (C) going down and slowing down.
  - (D) going down and speeding up.

14. Two men of unequal masses hold on to the two sections of a light rope passing over a smooth light pulley. Which of the following are possible



- (A) The lighter man is stationary while the heavier man slides with some acceleration
- (B) The heavier man is stationary while the lighter man climbs with some acceleration
- (C) The two men slide with the same acceleration in the same direction
- (D) The two men slide with acceleration of the same magnitude in opposite direction

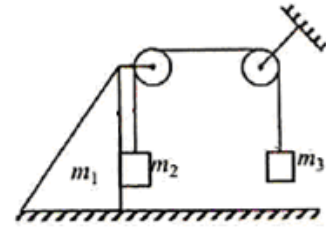
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**Comprehension Type**  
**Paragraph for question nos. 15 – 16**

In the following figure both the pulleys and the string are massless and all the surfaces are frictionless.

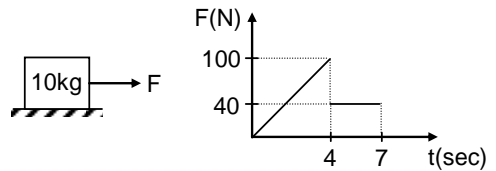
Given:  $m_1 = 1 \text{ kg}$ ,  $m_2 = 2 \text{ kg}$ ,  $m_3 = 3 \text{ kg}$



15. The tension in the string is:  
 (A)  $\frac{120}{7} \text{ N}$                       (B)  $\frac{240}{7} \text{ N}$                       (C)  $\frac{130}{7} \text{ N}$                       (D) None of these
16. The acceleration of  $m_1$  is:  
 (A)  $\frac{40}{7} \text{ m/s}^2$                       (B)  $\frac{30}{7} \text{ m/s}^2$                       (C)  $\frac{20}{7} \text{ m/s}^2$                       (D) None of these

**Paragraph for question nos. 17 – 18**

The 10 kg block is resting on a horizontal surface when the force  $F$  is applied to it for 7 sec. The variation of force  $F$  with time is shown in the graph. The co-efficient of static and kinetic friction are both 0.50. ( $g = 10 \text{ m/s}^2$ )



17. The maximum velocity reached by block during motion is  
 (A) 3 m/s                                      (B) 20 m/s  
 (C) 5 m/s                                      (D) 16 m/s
18. The total time  $t$  during which the block is in motion  
 (A) 5 sec                                      (B) 7.4 sec  
 (C) 7 sec                                      (D) 3 sec

*space for rough work*

**Section – III (Mathematics)****PART – A****(Single Correct Choice Type)**

This section contains 6 **multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which only **ONE** option is be correct.

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- The equation of the tangent to the curve  $y = 4 + \sin^2 x$  at  $x = 0$  is  
 (A)  $y = 2$  (B)  $y = 3$   
 (C)  $y = 4$  (D)  $y = 6$
- The function  $f(x) = 2x^3 - 9x^2 + 12x + 4$  is decreasing in the interval(s)  
 (A)  $(-\infty, 1)$  and  $(2, \infty)$  (B)  $(-\infty, 1)$  only  
 (C)  $(1, 2)$  (D)  $(2, \infty)$  only
- The angle of intersection of the curves  $y = x^2$  and  $6y = 7 - x^3$  at  $(1, 1)$  is  
 (A)  $\frac{\pi}{4}$  (B)  $\frac{\pi}{3}$   
 (C)  $\frac{\pi}{2}$  (D) none of these
- Let  $f(x) = x^3 + 3x^2 + 3x + 2$ . Then at  $x = -1$   
 (A)  $f(x)$  has a local maximum (B)  $f(x)$  has a local minimum  
 (C)  $f'(x)$  has a local maximum (D)  $f'(x)$  has a local minimum
- Let  $f'(x) > 0$  and  $g'(x) < 0$  for all  $x \in \mathbf{R}$ , then:  
 (A)  $f\{g(x)\} > f\{g(x+1)\}$  (B)  $f\{g(x)\} > f\{g(x-1)\}$   
 (C)  $g\{f(x)\} < g\{f(x+1)\}$  (D)  $g\{f(x)\} > g\{f(x-1)\}$
- The necessary condition for  $x = a$  to be local extremum for a differentiable function  $f(x)$  is  
 (A)  $f'(a) = 0$  and it is sufficient (B)  $f''(a) = 0$  and it is sufficient  
 (C)  $f'(a) = 0$  but it is not sufficient (D)  $f'(a) = 0$  and  $f''(a) < 0$

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*space for rough work*

**(Multiple Correct Choice Type)**

This section contains 8 **multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONE OR MORE** may be correct.

7. Which of the following statements is/are correct?  
 (A)  $x + \sin x$  is an increasing function (B)  $\sec x$  is neither increasing nor decreasing  
 (C)  $x + \sin x$  is decreasing function (D)  $\sec x$  is an increasing function
8. If  $f(x) = \tan^{-1} x - \left(\frac{1}{2}\right) \ln x$ . Then  
 (A) the greatest value of  $f(x)$  on  $\left[\frac{1}{\sqrt{3}}, \sqrt{3}\right]$  is  $\frac{\pi}{6} + \left(\frac{1}{4}\right) \ln 3$   
 (B) the least value of  $f(x)$  on  $\left[\frac{1}{\sqrt{3}}, \sqrt{3}\right]$  is  $\frac{\pi}{3} - \left(\frac{1}{4}\right) \ln 3$   
 (C)  $f(x)$  decreases on  $(0, \infty)$   
 (D)  $f(x)$  increases on  $(-\infty, 0)$
9. The critical points of the function  $f(x) = (x - 2)^{2/3} (2x + 1)$  occur when the value of  $x$  is  
 (A)  $-1$  (B)  $2$  (C)  $-\frac{1}{2}$  (D)  $1$
10. Which of the following is correct?  
 (A)  $e^2 > 2^e$  (B)  $e^3 > 3^e$  (C)  $e^\pi > \pi^e$  (D)  $\sqrt{e^\pi} > \left(\frac{\pi}{2}\right)^e$
11. The angle between tangents to the curves  $y = x^2$  and  $x = y^2$  at  $(1, 1)$  is:  
 (A)  $\cos^{-1} \frac{4}{5}$  (B)  $\sin^{-1} \frac{3}{5}$  (C)  $\tan^{-1} \frac{3}{4}$  (D)  $\tan^{-1} \frac{1}{3}$
12. Let  $f(x)$  be an increasing function defined on  $(0, \infty)$ . If  $f(2a^2 + a + 1) > f(3a^2 - 4a + 1)$ , then the possible integers in the range of  $a$  is/are:  
 (A)  $1$  (B)  $2$  (C)  $3$  (D)  $4$
13. If the line  $ax + by + c = 0$  is a normal to the curve  $xy = 1$ . Then:  
 (A)  $a > 0, b > 0$  (B)  $a > 0, b < 0$  (C)  $a < 0, b > 0$  (D)  $a < 0, b < 0$
14. Which of the following functions are decreasing on  $\left(0, \frac{\pi}{2}\right)$  entirely?  
 (A)  $\cos x$  (B)  $\cos 2x$  (C)  $\cos 3x$  (D)  $\tan x$

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*space for rough work*

**Comprehension Type**  
**Paragraph for question nos. 15 – 16**

Let  $f(x)$  is a cubic polynomial which has local maximum at  $x = -1$ ,  $f(2) = 18$ ,  $f(1) = -1$  and  $f'(x)$  has local minima at  $x = 0$ .

15. The cubic polynomial  $f(x)$  is  
 (A)  $\frac{1}{8}(x^3 + 45x - 54)$     (B)  $(x^3 - x - 1)$     (C)  $x^3 + x^2 + 9x - 12$     (D)  $\frac{1}{4}(19x^3 - 57x + 34)$
16.  $f(x)$  has local minimum at  
 (A)  $x = 0$     (B)  $x = 1$     (C)  $x = 2$     (D)  $x = -\sqrt{2}$

**Paragraph for question nos. 17 – 18**

Let  $g(x)$  be a non – constant twice differentiable function defined on  $\mathbb{R}$  (the set of all real numbers) such that  $y = g(x)$  is symmetric about the line  $x = 2$  and  $g(-2) = g'\left(\frac{1}{2}\right) = g'(1) = 0$ .

17. The value of  $g(6)$  equals:  
 (A)  $\frac{1}{2}$     (B) 1    (C) 2    (D) 0
18. The minimum number of roots of the equation  $g''(x) = 0$  in the interval  $(0, 4)$  equals:  
 (A) 4    (B) 6    (C) 8    (D) 10

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*space for rough work*

# FIITJEE INTERNAL TEST

## COMMON TEST – II

Batches: NWCMPA920M1, N1, A1, B1, C1 & NWCMPD920A1

IIT- JEE 2020

## ANSWERS

QP CODE: 123210

### SECTION – I (Chemistry)

#### Part – A

- |         |         |         |         |
|---------|---------|---------|---------|
| 1. C    | 2. B    | 3. B    | 4. B    |
| 5. C    | 6. C    | 7. ABC  | 8. A    |
| 9. ABCD | 10. ABD | 11. ABD | 12. BCD |
| 13. A   | 14. ABC | 15. B   | 16. C   |
| 17. A   | 18. A   |         |         |

### SECTION – II (Physics)

#### Part – A

- |        |          |        |        |
|--------|----------|--------|--------|
| 1. B   | 2. D     | 3. D   | 4. D   |
| 5. D   | 6. C     | 7. ABD | 8. BD  |
| 9. BCD | 10. ABCD | 11. AC | 12. AD |
| 13. BC | 14. ABD  | 15. A  | 16. A  |
| 17. C  | 18. B    |        |        |

### SECTION – III (Mathematics)

#### Part – A

- |        |          |         |         |
|--------|----------|---------|---------|
| 1. C   | 2. C     | 3. C    | 4. D    |
| 5. A   | 6. C     | 7. AB   | 8. ABC  |
| 9. BD  | 10. ABCD | 11. ABC | 12. BCD |
| 13. BC | 14. AB   | 15. D   | 16. B   |
| 17. D  | 18. A    |         |         |