POTENTIAL & CONCEPT EDUCATIONS

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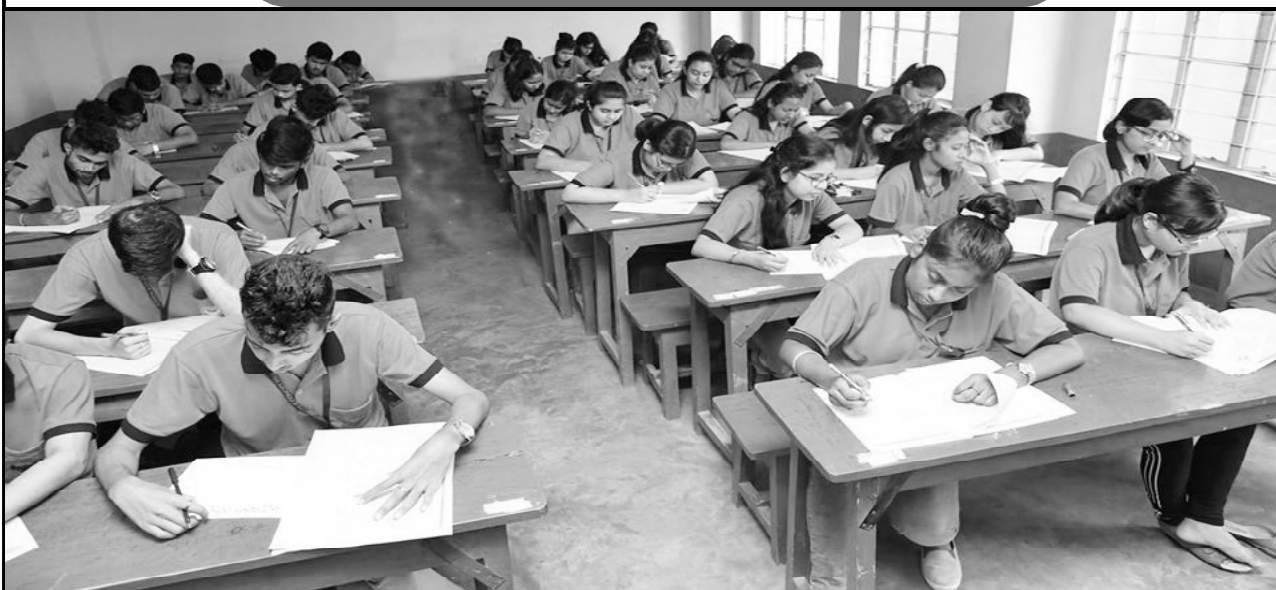JOINING HANDS FOR A BETTER TOMORROW

Academic Session : 2019 - 20

ANTS FULL TEST (TEST CODE) : FT # 31 (JEE-MAIN PATTERN)

Target : JEE-MAIN - 2020

Date : 30th August, 2020 | Duration : 3 Hours | Max. Marks : 300

COURSE : Dropper, Target, DLP., ANTS

Please read the last page of this booklet for the instructions.

Potential & Concept Educations

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**Note : For Answer keys and accurate Solutions please log on to
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PHYSICS

1 A running man has half the kinetic energy of that of a boy of half of his mass. The man speed up 1 m/s, so as the have same kinetic energy as that of a boy. The original speed of the man is (Single option correct)

a $\left(\sqrt{2}-1\right)$ m/s

b $\sqrt{2}$ m/s

c $\dfrac{1}{\left(\sqrt{2}-1\right)\frac{m}{s}}$

d $\dfrac{1}{\sqrt{2}}$ m/s

2 The angle between the two vector quantities $\vec{A} = 4\hat{i} - 2\hat{j} - \hat{k}$ and $\vec{B} = \hat{i} + 4\hat{j} - 4\hat{k}$ is equal to (Single option correct)

a 0°

b 60°

c 90°

d 30°

3 A 70 kg man standing on ice throws a 3 kg body horizontally at 8 m/s. The friction coefficient between the ice and his feet is 0.02. The distance, through which the man slip is (Single option correct)

a 0.3 m

b 2 m

c 1 m

d ∞

4 From a disc of radius R, a concentric circular portion of the radius r is cut out so as to leave an annular disc of mass M. The moment of inertia of this annular disc about the axis perpendicular to its plane and passing through its centre of gravity is (Single option correct)

a $\frac{1}{2} M \left(R^2 + r^2\right)$

b $\frac{1}{2} M \left(R^2 - r^2\right)$

c $\frac{1}{2} M \left(R^4 + r^4\right)$

d $\frac{1}{2} M' \left(R^4 - r^4\right)$

5 An object 2.4 m in front of a lens forms a sharp image on a screen 12 cm behind the lens. A glass plate 1 cm thick, of refractive index 1.50 is interposed between lens and screen with its plane faces parallel to screen. At what distance from the lens, should object be placed so as to get a sharp image on the screen? (Single option correct)
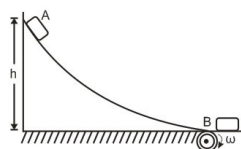
a 2.4 m

b 3.2 m

c 5.6 m

d 7.2 m

6 Particles are released from rest at A and slide down the smooth surface of height h to a conveyor B. The correct angular velocity ω of the conveyor pulley of radius r to prevent any sliding on the belt as the particles transfer to the conveyor is
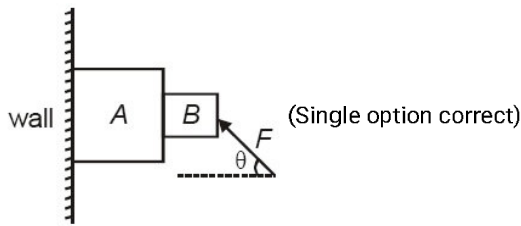

(Single option correct)

a $\dfrac{\sqrt{gh}}{r}$

b $\dfrac{\sqrt{2gh}}{3r}$

c $\dfrac{\sqrt{2gh}}{r}$

d $\dfrac{\sqrt{gh}}{2r}$

7 Consider the situation shown in the figure. The wall is smooth but the surfaces of blocks A and B in contact are rough. The friction on A due to B in equilibrium

wall | A | B | F | (Single option correct) θ

a Is upward

b Is downward

c Is zero

d The system cannot remain in equilibrium for any value of F

8 Universal time is based on (Single option correct)

a Rotation of earth on its axis

b Oscillations of quartz crystal

c Vibrations of cesium atom

d Earth's orbital motion around the sun

9 One mole of oxygen gas is made to undergo a process in which its molar heat capacity C depends on its absolute temperature T as $C = \alpha T$, where α is a positive constant. Work done by the gas when heated from an initial temperature T_0 to a final temperature $2T_0$ will be (Single option correct)

a $4\alpha T_0^2$

b $(\alpha T_0 - R)\frac{3T_0}{2}$

c $(3\alpha T_0 - 5R)\frac{T_0}{2}$

d none of these

10 Which of the following transition in Balmer series for hydrogen will have longest wavelength? (Single option correct)

a $n = 2$ to $n = 1$

b $n = 6$ to $n = 1$

c $n = 3$ to $n = 2$

d $n = 6$ to $n = 2$

11 The position-time $(x - t)$ graphs for two children A and B returning from their school O to their homes P and Q respectively along a straight path (taken as x-axis) are shown in the figure below. Choose the **incorrect** option.
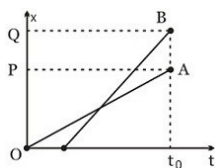

(Single option correct)

a A lives closer to the school than B

b A starts from the school earlier than B

c A and B have equal average velocities from 0 to t_0

d B overtakes A on the way

12 Assertion: Consider a system of gas having N molecules; Instantaneous K.E. of few molecules can be greater than average K.E. of the molecules of the given gas.

Reason: Number of molecules having most probable speed is greater than number of molecules having average speed. (Single option correct)

a If both Assertion and Reason are true and the Reason is correct explanation of the Assertion.

b If both Assertion and Reason are true but Reason is not correct explanation of the Assertion.

c If Assertion is true but the Reason is false.

d If Assertion is false but Reason is true.

13 A hydraulic automobile lift is designed to lift cars with a maximum mass of 3000 kg. The area of cross-section of the piston carrying the load is 425 cm^2. What maximum pressure would the smaller piston have to bear? (Single option correct)

a 6.92×10^5 Pa

b 6.92×10^{-5} Pa

c 5.78×10^5 Pa

d 7.98×10^5 Pa

14 The radioactivity isotope X with a half-life of 10^9 year decays to Y which is stable. A sample of rocks was found to contain both the elements X and Y in the ratio $1 : 7$. If initially the no. of nuclei of Y were zero then the age of rock is (Single option correct)

a 2×10^9 yr

b 3×10^9 yr

c 6×10^9 yr

d 7×1^9 yr

15 Let E_1 and E_2 denotes gravitational field at distance r_1 and r_2 from the axis of an infinitely long solid cylinder of the radius R. Which of the following must hold true? (Single option correct)

a $E_1 < E_2$ if $r_1 < r_2 < R$

b $E_1 > E_2$ if $R < r_1 < r_2$

c $E_1 > E_2$, if
$r_1 = R - E,\ r_2 = R + E$ (E is positive constant $< R$)

d All of the above

16 A man crosses a river in a boat. If he crosses the river in minimum time, he takes $10\,\text{min}$ with a drift $120\,\text{m}$. If he crosses the river taking the shortest path, he takes $12.5\,\text{min}$, find the width of the river. (Single option correct)

a $215\,\text{m}$

b $150\,\text{m}$

c $100\,\text{m}$

d $200\,\text{m}$

17 A charged particle is moving in a uniform magnetic field in a circular path. The energy of the particle is doubled. The initial radius of the new circular path will be (Single option correct)

a $\frac{R}{2}$

b $\sqrt{2}R$

c $2R$

d $\frac{R}{\sqrt{2}}$

18 In a Wheatstone's bridge all the four arms have equal resistance R. If the resistance of the galvanometer arm is also R, the equivalent resistance of the combination as seen by the battery is (Single option correct)

a $\frac{R}{4}$

b $\frac{R}{2}$

c R

d 2R

19 Two point white dots are 1 mm apart on a black paper. They are viewed by eye of pupil diameter 3 mm. Approximately, what is the maximum distance at which these dots can be resolved by the eye? [Take wavelength of light $= 500$ mm] (Single option correct)

a 6 m

b 3 m

c 1 m

d 5 m

20 A cylinder of radius r and thermal conductivity K_1 is surrounded by a cylindrical shell of linear radius r and outer radius $2r$, whose thermal conductivity is K_2. There is no loss of heat across cylindrical surfaces, when the ends of the combined system are maintained at temperatures T_1 and T_2. The effective thermal conductivity of the system, in the steady state is (Single option correct)

a $\frac{K_1 K_2}{K_1 + K_2}$

b $K_1 + K_2$

c $\frac{K_1 + 3K_2}{4}$

d $\frac{3K_1 + K_2}{4}$

21 Two blocks P and Q of masses 0.3 kg and 0.4 kg respectively are stuck to each other by some weak glue as shown in the figure. They hang together at the end of a spring with a spring constant $k = 200 \text{ N m}^{-1}$. The block Q suddenly falls free due to failure of glue, then find the maximum kinetic energy of the block P during subsequent motion (in mJ).
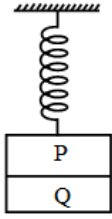
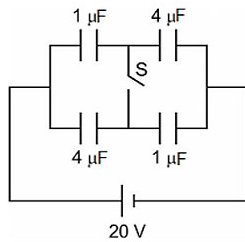(Subjective Numerical)

22 In a car race, sound signals emitted by the two cars are detected by a detector on the straight track at the end of the race. The frequency observed for the two cars is 330 Hz and 360 Hz respectively, while the original frequency is 300 Hz for both the cars. The race ends with a separation of 100 m between the cars. Assume both cars move with constant velocity and velocity of sound is 330 m s^{-1}. Find the time taken by the winning car (in second).
(Subjective Numerical)

23 In an LCR circuit, the resonant frequency is 600 Hz and half-power points are at 650 Hz and 550 Hz. The quality factor is (Subjective Numerical)

24 A rod of ferromagnetic material with dimensions 20cm $\times 0.5$cm $\times 0.1$cm is placed in a magnetic field of strength $0.5 \times 10^4 \text{Am}^{-1}$ as a result of which a magnetic moment of 10Am^{-2} is produced in the rod. The value of magnetic induction will be _____ T (Subjective Numerical)

25 For the circuit shown in the figure, the charge flown through the switch after it is closed is $n \text{ } \mu C$. Find the value of n.

(Subjective Numerical)

CHEMISTRY

1. An organic compound containing C, H and N gave the following analysis : C = 40%, H = 13.33%, N = 46.67%. The empirical formula of that compound is $C_x\,H_y\,N_z$. The values of x,y,z are: (Single option correct)

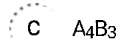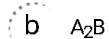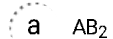- a CH_4N
- b CH_2N
- c CH_1N
- d CH_8N
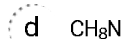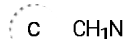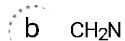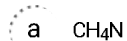
2. The compound A on heating gives a colourless gas and a residue that is dissolved in water to obtain B. Excess of CO_2 is bubbled through aqueous solution of B, C is formed which
is recovered in the solid form. Solid C on gentle heating gives back A. The compound is (Single option correct)

- a $CaCO_3$
- b Na_2CO_3
- c K_2CO_3
- d $CaSO_4 \cdot 2H_2O$
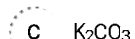
3. For following reaction, salt (X) satisfying properties can be

Conc. H_2SO_4 → Brown fumes

Salt X (Colourless) — Cu → Blue solution (Single option correct)

HCl → White ppt.

- a $AgNO_3$
- b $Cu(NO_3)_2$
- c $Pb(NO_3)_2$
- d $NaNO_3$
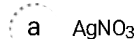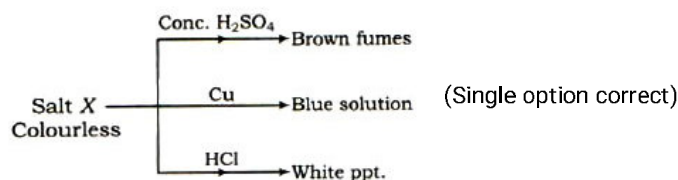
4. In a solid 'AB' having the NaCl structure, 'A' atoms occupy the corners of the cubic unit cell. If all the face centred atoms along one of the axes are removed, then the resultant stoichiometry of the solid is : (Single option correct)

- a AB_2
- b A_2B
- c A_4B_3
- d A_3B_4

5. The IUPAC name of $CH_3\,CH_2\,C(Br) = CH - Cl$ is (Single option correct)

- a 2-bromo-1-chloro but-1-ene
- b 1-chloro-2-bromo-but-1-ene
- c 3-chloro-2-bromo but-2-ene
- d None of these
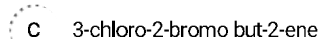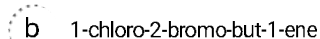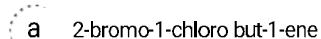
6. When Cl_2 water is added to a salt solution containing chloroform, chloroform layer turns violet. Salt contains (Single option correct)

- a Cl^-
- b I^-
- c NO_3^-
- d S^{2-}
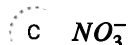
7 Following is the graph between $\log t_{\frac{1}{2}}$ and $\log a$ (a = concentration of reactant) for a given reaction at $27^\circ C$. Hence, order of the reaction is
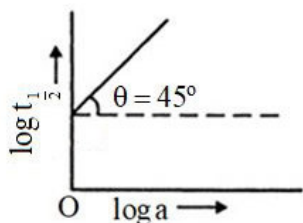

(Here, $t_{1/2}$ is half-life) (Single option correct)

a 0

b 1

c 2

d 3

8 Volume of 0.1 M H_2SO_4 required to neutralize 30 mL of 0.2 N NaOH is (Single option correct)

a 30 mL

b 15 mL

c 40 mL

d 60 mL

9 An ideal gas is initially at temperature T and volume V. It's volume increases by ΔV due to an increase in temperature of ΔT, pressure remaining constant. The quantity $\mu = \frac{\Delta V}{V \Delta T}$ varies with temperature as - (Single option correct)
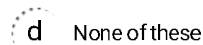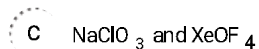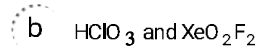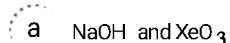
a

Temperature(K)

b

Temperature(K)

c

Temperature(K)

d

Temperature
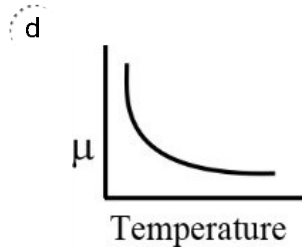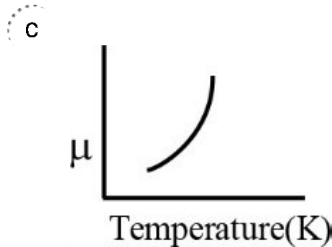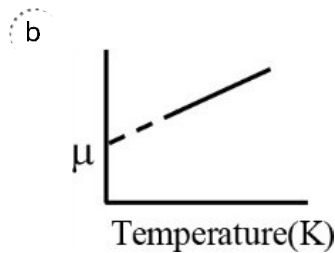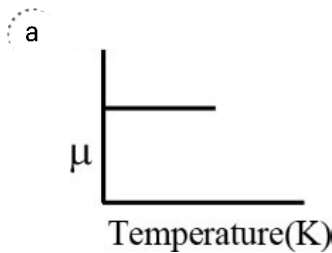
10 5 mole H_2O (l) at 373 K and 1 atm is converted into H_2O (g) at 373 K and 5 atm. ΔG for this process is [Given R = 2 cal/K-mol] (Single option correct)

a Zero

b 1865 ln 5 cal

c 3730 ln 5 cal

d -3730 ln 5 cal

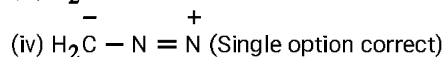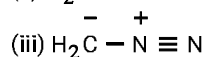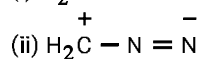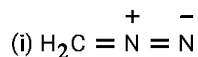**11** By diluting a weak electrolyte, specific conductivity $\left(K_c\right)$ and equivalent conductivity (λ_c) change as- (Single option correct)

a Both increase

b K_c increases, λ_c decreases

c K_c decreases, λ_c increases

d Both decrease

12. The products obtained from the following chemical reactions are respectively

(i)   NaOH $+ Cl_2 \rightarrow$
   (hot and conc.)

(ii) XeF_6 $+ H_2O \rightarrow$ (Single option correct)
   (excess)

a   NaOH and XeO_3

b $HClO_3$ and XeO_2F_2

c $NaClO_3$ and $XeOF_4$

d   None of these
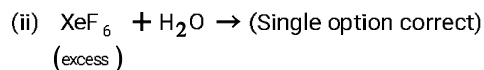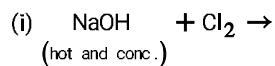
13. The correct stability order of the following resonance structures is :

(i) $H_2C \overset{+}{=} N \overset{-}{=} N$

(ii) $H_2C \overset{+}{-} N \overset{-}{=} N$

(iii) $H_2C \overset{-}{-} N \overset{+}{\equiv} N$

(iv) $H_2C \overset{-}{-} N \overset{+}{=} N$ (Single option correct)

a   (i) > (ii) > (iv) > (iii)

b   (i) > (ii) > (iii) > (iv)

c   (iii) > (i) > (iv) > (ii)

d   (i) > (iii) > (ii) > (iv)
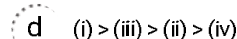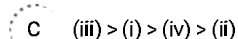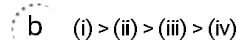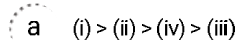
14. Increasing skin cancer and high mutation rate are the result of (Single option correct)

a   Acid rain

b   Ozone depletion

c   CO pollution

d   Global warming
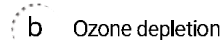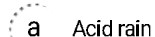
15. A reaction system in equilibrium according to reaction $2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g)$ in one litre vessel at a given temperature was found to be 0.12 mole each of SO_2 and SO_3 and 5 mole of O_2 . In another vessel of one litre contains 32 g of SO_2 at the same temperature. What mass of O_2 must be added to this vessel to order that at equilibrium 20% of SO_2 is oxidized to SO_3 ? (Single option correct)

a   0.4125 g

b   11.6 g

c   1.6 g

d   None of these
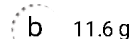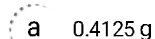
16. The equilibrium constant for the given reaction is approximately 10^{-3}

$$HPO_4^{2-}\left(aq\right) + HCO_3^{-}\left(aq\right) \rightleftharpoons H_2PO_4^{-}\left(aq\right) + CO_3^{2-}\left(aq\right)$$
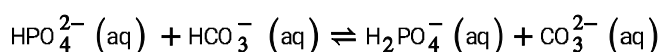
Which is strongest conjugate base in the given reaction? (Single option correct)

a HPO_4^{2-} (aq)

b HCO_3^{-} (aq)

c $H_2PO_4^{-}$ (aq)

d CO_3^{2-} (aq)

17. The most probable radius (in pm) for finding the electron in He^{+} is (Single option correct)

a   0.0

b   52.9

c   26.5

d   105.8
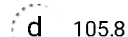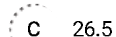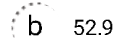
18 In nuclear reaction,

$$^7_3\text{Li} + ^1_1\text{H} \rightarrow 2\,^4_2\text{He}$$

The mass loss is nearly 0.02 amu. Hence, the energy released (in units of million kcal/mol) in the process is approximately (Single option correct)

a 430

b 220

c 120

d 50

19 Which of the following has longest $C - O$ bond length? (Free $C - O$ bond length in CO is 1.128 $\overset{\circ}{A}$). (Single option correct)

a $Ni(CO)_4$

b $\left[Co\left(CO\right)_4 \right]^-$

c $\left[Fe(CO)_4 \right]^{2-}$

d $\left[Mn\left(CO\right)_6 \right]^+$

20 Acetylene can be obtained by the reaction? (Single option correct)

a $HCOOK \xrightarrow{\text{Electrolysis}}$

b $CHI_3 + Ag \xrightarrow{\Delta}$

c $CH_3CH_2OH \xrightarrow[\text{443 K}]{\text{Conc.}H_2SO_4}$

d $Be_2C + H_2O \rightarrow$

21 Mica is a mineral of aluminium. The chemical formula of mica is $K_2O \cdot xAl_2O_3 \cdot ySiO_2 \cdot 2H_2O$
The value of **'y'** is (Subjective Numerical)

22 Find electro negativity of Pb $\left(Z = 82 \right)$. (Given that $r_{cov}\left(Pb \right) = 1.47\,\overset{\circ}{A}$) (Subjective Numerical)

23 The number of chiral carbons atoms in chloramphenicol are (Subjective Numerical)

24 Two liquids A and B form ideal solution. At 300 K, the vapour pressure of a solution containing 1 mole of A and 3 moles of B is 550 mm of Hg. At the same temperature, if one more mole of B is added to this solution, the vapour pressure of the solution increases by 10 mm of Hg. Determine the vapour pressure of A and B in their pure state. Calculate the value of $\left(P^o_B - P^o_A \right)$ value in mm of Hg. (Subjective Numerical)

25 Among given compounds, how many compounds will react with $NaHCO_3$ or soluble in $NaHCO_3$?
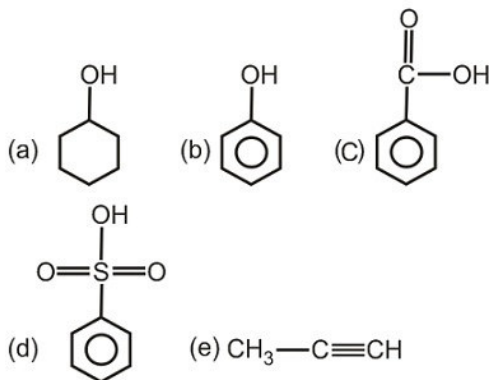
(Subjective Numerical)

MATHEMATICS

1. If x_1, x_2, x_3, x_4 are four complex numbers represented by the vertices of a quadrilateral taken in order such that $x_1 - x_4 = x_2 - x_3$ and $\arg\left(\frac{x_4 - x_1}{x_2 - x_1}\right) = \frac{\pi}{2}$, then the quadrilateral is (Single option correct)

- a   a square
- b   a rectangle
- c   a rhombus
- d   a cyclic quadrilateral

2. Let P be a point on a variable hyperbola $x^2 - y^2 = a^2$. Locus of P such that P is nearest to the line $y = 2x$ is, a is a parameter

(Single option correct)

- a $x + 2y = 2$
- b $x = 4y$
- c $x - 2y = 0$
- d $2x + y = 2$

3. If $\int \frac{f(x)}{\log \sin x} dx = \log \log \sin x$, Then $f(x)$ is equal to (Single option correct)

- a $\sin x$
- b $\cos x$
- c $\log \sin x$
- d $\cot x$

4. A flag is standing vertically on a tower of height '**b**'. On a point at a distance '**a**' from the foot of the tower, the flag and the tower subtend equal angles. The height of the flag is (Single option correct)

- a $b. \frac{a^2 + b^2}{a^2 - b^2}$
- b $a. \frac{a^2 - b^2}{a^2 + b^2}$
- c $b. \frac{a^2 - b^2}{a^2 + b^2}$
- d $a. \frac{a^2 + b^2}{a^2 - b^2}$

5. 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

(Single option correct)

- a $\left(\frac{13}{5}, 0\right)$
- b $\left(\frac{5}{13}, 0\right)$
- c $(-7, 0)$
- d   None of these

6. Using properties of definite integrals, evaluate $\int_0^{\frac{\pi}{4}} \log(1 + \tan x) dx$.

(Single option correct)

- a $\frac{\pi}{8} \log 2$
- b $\frac{\pi^2}{4}$
- c   None of these
- d $\frac{\pi}{2} - \log 3$

7. If $x = a\left(\cos t + \log \tan \frac{t}{2}\right), y = a \sin t$ find $\frac{d^2 y}{dt^2}$ and $\frac{dy}{dx}$

(Single option correct)

- a   -a sin t and tan t
- b   -a sin^2 t and tan t
- c   -a sin t and tan$^2 t$
- d   None of these

8 If the radius of the circum-circle of an isosceles ΔABC is equal to $AB \ (= \ AC)$, then $A!$ is- (Single option correct)

a $\frac{\pi}{4}$

b $\frac{2\pi}{3}$

c $\frac{\pi}{3}$

d $\frac{\pi}{2}$

9 The coefficient of term independent of x in

$$\left[\sqrt{\left(\frac{x}{3}\right)} + \frac{\sqrt{3}}{x^2}\right]^{10}$$ is (Single option correct)

a $\frac{5}{3}$

b $\frac{4}{5}$

c 6

d $\frac{1}{2}$

10 If a, b, c are real numbers in AP, then the roots of $ax^2 + bx + c = 0$ are real for (Single option correct)

a All a and c

b No a and c

c $\left|\frac{c}{a} - 7\right| \geq 4\sqrt{3}$

d $\left|\frac{a}{c} + 7\right| \geq 2\sqrt{3}$

11 The number of non-empty subsets of the set $\{1, 2, 3, 4\}$ is (Single option correct)

a 15

b 14

c 16

d 17

12 The curve for which the x-intercept of the tangent drawn at any point P on the curve is three times the x-coordinate of the point P, is equal to (where, C is an arbitrary constant) (Single option correct)

a $xy = C$

b $xy^2 = C$

c $xy^3 = C$

d None of these

13 A box contains N coins, m of which are fair and the rest are biased. The probability of getting a head when a fair coin is tossed, is 1/2, while it is 2/3 when a biased coin is tossed. A coin is drawn from the box at random and is tossed twice. The first time it shows head and the second time it shows tail. The probability that the coin drawn is fair is, (Single option correct)

a $\frac{9m}{8N+m}$

b $\frac{8m}{9N+m}$

c $\frac{9m}{8N-m}$

d $\frac{8m}{9N-m}$

14 The number of ways in which a mixed double game can be arranged from amongst 9 married couples if no husband and wife play in the same game is- (Single option correct)

a 756

b 1512

c 3024

d None of these

15 If $2\sin^2 x - 3\sin x + 1 < 0$, then number of solution(s) of the equation $\cos^2 x - 3\cos x + 2 = 0$ is/are (Single option correct)

a 3

b 2

c 1

d 0

16 A differentiable function $f(x)$ is defined for all $x > 0$ and satisfies $f\left(x^3\right) = 4x^4$ for all $x > 0$. The value of $f'\left(8\right)$ is (Single option correct)

a $\dfrac{16}{3}$

b $\dfrac{32}{3}$

c $\dfrac{16\sqrt{2}}{3}$

d $\dfrac{32\sqrt{2}}{3}$

17 If $f\left(x\right) = \begin{cases} \sqrt{2}; x \text{ is rational} \\ \\ 1; x \text{ is irrational} \end{cases}$ $\phi(x) = \left[f(x)\right], (\,[\,.\,] = G.I.F.\,)$ *then* **range** of $\phi(x)$ is, where $[\,.\,]$ denotes greatest integer function

(Single option correct)

a $\{0, 1\}$

b $\{0\}$

c $\left\{1, \sqrt{2}\right\}$

d $\{1\}$

18 The parabolas $y^2 = 4x$ and $x^2 = 4y$ divide the square region bounded by the lines $x = 4, y = 4$ and the coordinate axes. If S_1, S_2, S_3 are respectively the areas of these parts numbered from top to bottom of the square region, then $S_1 : S_2 : S_3$ is (Single option correct)

a $2 : 1 : 2$

b $1 : 1 : 1$

c $1 : 2 : 1$

d $1 : 2 : 3$

19 If α, β are the roots of the equation $6x^2 - 5x + 1 = 0$, then the value of $\tan(\tan^{-1}\alpha + \tan^{-1}\beta)$ is (Single option correct)

a 0

b 1

c -1

d 2

20 The largest natural number by which $3^{2n} - 1, \ n \in N$ is divisible. (Single option correct)

a 8

b 2

c 4

d 16

21 The value of $\displaystyle\lim_{x \to 1^+} \dfrac{\int_1^x |t-1|\, dt}{\sin(x-1)}$ is equal to (Subjective Numerical)

22 The line $L_1 \equiv 3x - 4y + 1 = 0$ touches the circles C_1 and C_2. Centers of C_1 and C_2 are $A_1(1,2)$ and $A_2\,(3, 1)$ respectively Then, the length (in units) of the transverse common tangent of C_1 and C_2 is equal to (Subjective Numerical)

23 Let $px^4 + qx^3 + rx^2 + sx + t = \begin{vmatrix} x^2 + 3x & x - 1 & x + 3 \\ x + 1 & -2x & x - 4 \\ x - 3 & x + 4 & 3x \end{vmatrix}$ be an identity, where p, q, r, s and t are constants, then the value of s is equal to (Subjective Numerical)

24 If α and β are the roots of the equation $x^2 + 5x - 49 = 0$ then find the value of $\cot\left(\cot^{-1}\alpha + \cot^{-1}\beta\right)$.

(Subjective Numerical)

25 Let $a_1, a_2, a_3, \ldots\ldots, a_{11}$ be real numbers satisfying $a_1 = 15, 27 - 2a_2 > 0$ and $a_k = 2a_{k-1} - a_{k-2} \, \forall \, k = 3, 4, \ldots\ldots, 11$. If $\dfrac{a_1^2 + a_2^2 + \ldots + a_{11}^2}{11} = 90$, then the value of $\dfrac{a_1 + a_2 + \ldots + a_{11}}{11}$ is equal to

(Subjective Numerical)

| Date : 30 - 08 - 2020 | **ANTS FULL TEST (TEST CODE) : FT # 31**
(JEE MAIN PATTERN)
Target : JEE Main - 2020 | |

IMPORTANT INSTRUCTIONS

1. Immediately fill the particulars on this page of the Test Booklet with Blue/Black Point Pen. Use of Pencil is strictly prohibited.

2. When you are directed, fill in the particulars of the Answer Sheet carefully.

3. The test is 3 hours duration.

4. The Test Booklet consists of **75** questions. The maximum marks are **300**.

5. There are **3** parts in the question paper **Physics**, **Chemistry** and **Mathematics** having **25** questions each.

6. In each of the above three parts 20 questions will be MCQs and 5 questions will have answer to be filled as numerical value.

7. **Marking Scheme**

   (i)   Marking Scheme for MCQs -   Correct Answer   Four Mark (+4)

                                          Incorrect Answer   Minus one Mark (−1)

                                          Unanswered/Marked for Review No mark (0)

   (ii)   Marking Scheme for questions for which answer is numerical value

                                          Correct Answer   Four Mark (+4)

                                          Incorrect Answer   No mark 0)

                                          Unanswered/Marked for Review No mark (0)

Filling the ORS (Optical Response Sheet) :

    Use only Black ball point pen only for filling the ORS. Do not use Gel/Ink pen as it might smudge the ORS.

8. Write your Roll no. in the books given. Also darken the corresponding bubbles with Black ball point pen only. Also fill your roll no in the space provided.

9. **Fill your Paper Code as mentioned on the Test Paper.**

10. If student does not fill his/her roll no. and paper code correctly and properly, then his/her marks will not be displayed and 5 marks will be deducted (paper wise) from the total.

11. Since it is not possible to erase and correct pen filled bubble, you are advised to be extremely careful while darkening the bubble corresponding to your answer.

12. Neither try to erase/rub/scratch the option nor make the Cross(X) mark on the option once filled. Do not scribble, smudge, cut, tear, or wrinkle the ORS. Do not put any stray marks or whitener anywhere on the ORS.

13. If there is any discrepancy between the written data and the bubbled data in your ORS the bubbled data will be taken as final.

Name of the candidate

I have read all the instructions and shall abide by them

....
Signature of the Candidate

Roll Number :

I have read all the instructions and shall abide by them

....
Signature of the Candidate