TECHNO INDIA GROUP PUBLIC SCHOOL

JEE (Main) Mock Test (Series-II) (2026)
Mock Paper-1

Time Allowed: **3 hours**   Maximum Marks: **300**
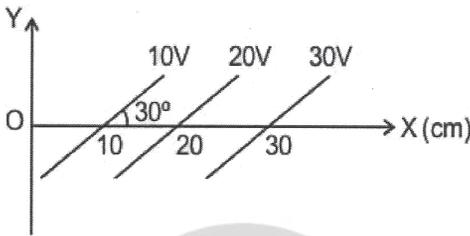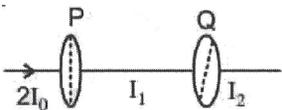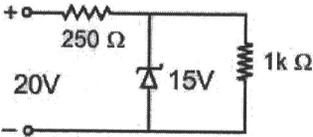
General Instructions:

1. There are three subjects in the question paper consisting of Physics (Q. no. 1 to 25), Chemistry (Q, no. 26 to 50), and Mathematics (Q. no. 51 to 75).

2. Each subject is divided into two sections. Section A consists of 20 multiple-choice questions & Section B consists of 5 numerical value-type questions.

3. There will be only one correct choice in the given four choices in Section A. For each question for Section A, 4 marks will be awarded for correct choice, 1 mark will be deducted for incorrect choice questions and zero marks will be awarded for not attempted questions.

4. For Section B questions, 4 marks will be awarded for correct choice, 1 mark will be deducted for incorrect choice questions and zero marks will be awarded for not attempted questions.

5. Any textual, printed, or written material, mobile phones, calculator etc. is not allowed for the students appearing for the test.

6. All calculations/written work should be done in the rough sheet, provided with the Question Paper.
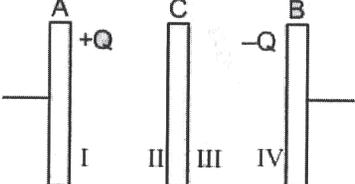
Physics

SECTION A

Section A: consists of 20 questions of 4 marks each.

1.	In a Wheatstone's bridge, three resistances P, Q and R connected in the three arms and the fourth arm is formed by two resistances S1 and S2 connected in parallel. The condition for the bridge to be balanced will be ① $\dfrac{P}{Q} = \dfrac{2R}{S_1 + S_2}$ ② $\dfrac{P}{Q} = \dfrac{R(S_1 + S_2)}{S_1 S_2}$ ③ $\dfrac{P}{Q} = \dfrac{R(S_1 + S_2)}{2S_1 S_2}$ ④ $\dfrac{P}{Q} = \dfrac{R}{S_1 + S_2}$	[4]
2.	Equipotential surfaces are shown in figure. Then the electric field strength will be ① 200 Vm^{-1} at an angle 60° with X-axis ② 50 Vm^{-1} at an angle 60° with X-axis ③ 200 Vm^{-1} at an angle 120° with X-axis ④ 50 Vm^{-1} at an angle 120° with X-axis	[4]
3.	**Assertion (A):** A bar magnet dropped through a metallic cylindrical pipe takes more time to come down compared to a non-magnetic bar with same geometry and mass. **Reason (R):** For the magnetic bar, eddy currents are produced in the metallic pipe which oppose the motion of the magnetic bar. ① Both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion. ② Both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion. ③ Assertion is correct but Reason is incorrect. ④ Assertion is incorrect and Reason is correct.	[4]
4.	A goods train accelerating uniformly on a straight railway track, approaches an electric pole standing on the side of track. Its engine passes the pole with velocity u and guard's room passes with velocity v. The middle wagon of the train passes the pole with a velocity. ① $\dfrac{u+v}{2}$ ② $\dfrac{1}{2}\sqrt{u^2 + v^2}$ ③ $\sqrt{uv}$ ④ $\sqrt{\left(\dfrac{u^2 + v^2}{2}\right)}$	[4]
5.	A particle is projected with a velocity v such that its range on the horizontal plane is twice the greatest height attained by it. The range of the projectile is (where g is acceleration due to gravity) ① $\dfrac{4v^2}{5g}$ ② $\dfrac{5v^2}{4g}$ ③ $\dfrac{v^2}{g}$ ④ $\dfrac{4v^2}{\sqrt{5}g}$	[4]
6.	A wind-powered generator converts wind energy into electrical energy. Assume that the generator converts a fixed fraction of the wind energy intercepted by its blades into electrical energy. For wind speed v, the electrical power output will be proportional to ① v ② v^2 ③ v^3 ④ v^4	[4]

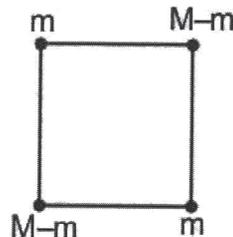| 7.	In a cyclic process *abcda*, $a \to b$ and $c \to d$ are two isothermals; $b \to c$ and $d \to a$ are two adiabatics. If $V_a = 4 \text{ m}^3$, $V_b = 10 \text{ m}^3$ and $V_c = 25 \text{ m}^3$. Then V_d will be	[4]
	① 20 m^3 ② 10 m^3 ③ 16 m^3 ④ 8 m^3	
8.	A helium nucleus makes a full rotation in a circle of radius 0.8 meter in 2 sec. The value of the magnetic field induction B at the centre of circle will be	[4]
	① $2\mu_0 \times 10^{-19} \text{ A/m}$ ② $2\mu_0 \times 10^{-19} \text{ T}$ ③ $\mu_0 \times 10^{-19} \text{ A/m}$ ④ $\mu_0 \times 10^{-19} \text{ T}$	
9.	An unpolarised light beam of intensity $2I_0$ is incident on a polaroid P which is oriented in such a way that its passing axis makes an angle of 30° relative to that of polaroid Q. The intensity I_2 of the emergent light is	[4]
	① $\dfrac{I_0}{4}$ ② $\dfrac{I_0}{2}$ ③ $\dfrac{3I_0}{4}$ ④ $\dfrac{3I_0}{2}$	
10.	Match List-I (Electromagnetic wave) with List-II (Its association/application) and select the correct option from the choices given below the lists:	[4]
	Column I **Column II** 1. Infrared waves (i) To treat muscular strain 2. Radio waves (ii) For broadcasting 3. X-rays (iii) to detect fracture of bones 4. Ultraviolet rays (iv) Absorbed by the ozone layer of the atmosphere ① 1–(iv); 2–(iii); 3–(ii); 4–(i) ② 1–(i); 2–(ii); 3–(iv); 4–(iii) ③ 1–(iii); 2–(ii); 3–(i); 4–(iv) ④ 1–(i); 2–(ii); 3–(iii); 4–(iv)	
11.	A person walks at a velocity v in a straight line forming an angle α with the plane of a plane mirror. Determine the velocity v_{rel} at which he approaches his image, assuming that the object and its image are symmetric relative to the plane of the mirror.	[4]
	① $2v\sin\alpha$ ② $2v\cos\alpha$ ③ $v\sin\alpha$ ④ $v\cos\alpha$	
12.	If the momentum of electron is changed by P, then the de Broglie wavelength associated with it changes by 0.5%. The initial momentum of electron will be	[4]
	① $200P$ ② $400P$ ③ $\dfrac{P}{200}$ ④ $100P$	
13.	Statement I : Density of all the nuclei is same. Statement II : Radius of nucleus is directly proportional to the cube root of mass number. ① Both statement I and II are correct. ② Both statement I and II are incorrect. ③ Statement I is correct but statement II is incorrect. ④ Statement II is correct but statement I is incorrect.	[4]
14.	A zener diode, having breakdown voltage equal to 15 V, is used in a voltage regulator circuit shown in figure. The current through the diode is	[4]
	① 10 mA ② 15 mA ③ 20 mA ④ 5 mA	

15.	The least count of the main scale of a screw gauge is 1 mm. The minimum number of divisions on its circular scale required to measure 5 μm diameter of a wire is:	[4]
	① 50 ② 200 ③ 100 ④ 500	
16.	Two identical metal wires of thermal conductivities K_1 and K_2 respectively are connected in series. The effective thermal conductivity of the combination is	[4]
	① $\dfrac{2K_1 K_2}{K_1 + K_2}$ ② $\dfrac{K_1 K_2}{2K_1 + K_2}$ ③ $\dfrac{K_1 + K_2}{K_1 K_2}$ ④ $\dfrac{K_1 K_2}{K_1 + K_2}$	
17.	Plates A and B constitute an isolated, charged parallel-plate capacitor. The inner surfaces (I and IV) of A and B have charges $+Q$ and $-Q$ respectively. A third plate C with charge $+Q$ is now introduced midway between A and B. Which of the following statements is not correct?	[4]
	① The surfaces I and II will have equal and opposite charges	
	② The surfaces III and IV will have equal and opposite charges	
	③ The charge of surface III will be greater than Q	
	④ The potential difference between A and C will be equal to the potential difference C and B	
18.	From a solid sphere of mass M and radius R a cube of maximum possible volume is cut. Moment of inertia of cube about an axis passing through its center and perpendicular to one of its faces is	[4]
	① $\dfrac{4MR^2}{9\sqrt{3}\pi}$ ② $\dfrac{4MR^2}{3\sqrt{3}\pi}$ ③ $\dfrac{MR^2}{32\sqrt{3}\pi}$ ④ $\dfrac{MR^2}{16\sqrt{2}\pi}$	
19.	Two travelling waves $y_1 = A\sin\left[k(x-ct)\right]$ and $y_2 = A\sin\left[k(x+ct)\right]$ are superimposed on a string. The distance between adjacent nodes is	[4]
	① $\dfrac{ct}{\pi}$ ② $\dfrac{ct}{2\pi}$ ③ $\dfrac{\pi}{2k}$ ④ $\dfrac{\pi}{k}$	
20.	The electric potential at a point (x, y) in the x-y plane is given by $V = -kxy$. The field intensity at x-y plane and at a distance r from the origin varies as	[4]
	① r^2 ② r ③ $\dfrac{1}{r}$ ④ $\dfrac{1}{r^2}$	

SECTION B

Section B consists of 5 questions of 4 marks each

21.	The potential energy of a particle of mass 1 kg in motion along the x-axis is given by $U = 4(1 - \cos 4x)$ J. The time period of the particle for small oscillation $(\sin\theta = 0)$ is $\left(\dfrac{\pi}{K}\right)$ s. The value of K i _____.	[4]
22.	The frequencies at which the current amplitude in an LCR series circuit becomes times its maximum value, are 212 rad s^{-1} and 232 rad^{-1}. The value of resistance in the circuit R = 5 Ω. The self inductance in the circuit is _____ mH.	[4]

23.	When an object is kept at a distance of 30 cm from a concave mirror, the image is formed at a distance of 10 cm from the mirror. If the object is moved with a speed of 9 cm s^{-1}, the speed (in cm s^{-1}) with which the image moves at that instant is _____.	[4]
24.	The angular speed of truck wheel is increased from 900 rpm to 2460 rpm in 26 second. The number of revolutions of the wheel during this time is _____.	[4]
25.	A body of mass 2M splits into four masses {m, $M – m$, m, $M – m$}, which are placed at the four vertices of a square as shown in the figure. The ratio of $\dfrac{M}{m}$ for which, the gravitation potential energy of the system becomes minimum is x. The value of x is _____.	[4]

Chemistry

SECTION A

Section A: consists of 20 questions of 4 marks each.

26.	Identify the correct set of molecules with zero dipole moment.	4
	① CO_2, NH_3, H_2O ② NH_3, NF_3, BF_3 ③ PF_3, NH_3, CH_4 ④ CH_4, BF_3, CO_2	
27.	Consider the following: **Statement I:** If the intermolecular forces are stronger than thermal energy, the substance prefers to be in gaseous state. **Statement II:** Among all elements, the total number of elements available as gases at room temperature is 10. The correct answer is: ① Both statement-I & statement-II are correct ② Both statement-I & statement-II are not correct ③ Statement-I is correct, but statement-II is not correct ④ Statement-I is not correct but, statement-II is correct.	4
28.	Identify the conditions at which Vanderwaal's equation of state changes to ideal gas equation at: ① high temperature and high pressure ② low temperature and high pressure ③ high temperature and low pressure ④ low temperature and low pressure	4
29.	At T(K), the solubility product of AgBr is 4×10^{-13}. What is its solubility in 0.1 (M) KBr solution? ① 2×10^{-6} M ② 4×10^{-13} M ③ 4×10^{-12} M ④ 4×10^{-14} M	4
30.	The volume (in mL) of 10 volume H_2O_2 solution required to completely react with 200 mL of 0.4 M $KMnO_4$ solution in acidic medium is ① 112 ② 336 ③ 224 ④ 448	4
31.	Which of the following statements is incorrect with reference to alkaline earth metals? ① Solubility of carbonates in water decreases down the group ② All the sulphates are thermally stable ③ All the nitrates decompose on heating ④ All halides are ionic in nature	4

32.	The IUPAC name of the following compounds is:	4
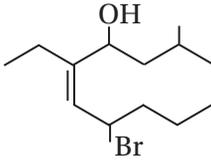
① 6-Ethyl-9-methyl-4-bromodec-5-en-7-ol ② 7-Bromo-2-methyl-5-ethyldec-5-en-4-ol

③ 7-Bromo-5-ethyl-2-methyldec-5-en-4-ol ④ 4-Bromo-6-ethyl-9-methyldec-5-en-7-ol

33.	At 273K the maximum work done when pressure on 10 g of hydrogen is reduced from 10 atm to 1 atm under isothermal, reversible, conditions is (Assume the gas behaves ideally). [R = 8.3 JK^{-1} (mole)$^{-1}$]	4

① −52.18 KJ   ② +26.09 KJ   ③ −26.09 KJ   ④ +52.18 KJ

34.	248 g of ethylene glycol ($C_2H_6O_2$) is added to 200 g of water to prepare antifreeze. What is the molality of resultant solutions?	4

① 5 m   ② 10 m   ③ 20 m   ④ 40 m

35.	A solution containing 7.5 g of urea (Molar mass = 60 g mole^{-1}) in 1 kg of water freezes at the same temperature as another solution containing 15 g of solute X, in the same amount of water. The molar mass of X [g(mol)$^{-1}$] is	4

① 60   ② 180   ③ 120   ④ 240

36.	What is E_{cell} (in V) of the following cell at 298 K?	4

$$E^o_{Z_{n^{++}}/Zn} = -0.76V \; ; \; E^o_{Ni^{2+}/Ni} = -0.25V \quad \frac{2.303RI}{F} = 0.06V$$

$Zn(S) \mid Zn^{2+} (0.01 \text{ M}) \parallel Ni^{2+} (0.1 \text{ M}) \, Ni(S)$.

① 0.51   ② 0.48   ③ 0.57   ④ 0.54

37.	A → products, is a first order reaction. The following data is obtained for this reaction at T(K). The value of x : y is:	4

Rate [mol L^{-1}(mol)$^{-1}$]	(A)
0.2	0.02 M
0.4	x M
1.0	y M

① 1 : 5   ② 2 : 3   ③ 5 : 2   ④ 2 : 5

38.	Observe the following reactions:	4

(I) Sucrose (aq) + H_2O $\xrightarrow{\text{X}}$ glucose + fructose

(II) Glucose (aq) $\xrightarrow{\text{y}}$ ethanol + CO_2

What are x and y respectively?

① Invertase, zymase   ② Zymase, Diastase

③ Diastase, zymase   ④ Diastase, Invertase

39.	Which of the following complexes exhibit geometrical isomerism: (I) $[Co(en)(NH_3)_2Cl_2]Cl$ (II) $[Co(NH_3)_4Cl_2]Cl$ (III) $[Co(en)_3]Cl_3$ (IV) $[Co(en)_2Cl_2]Br$ ① I, II & III only ② II, III & IV only ③ I, II, & IV only ④ II & III only	4
40.	In which polymer preparation, Ziegler – Natta catalyst is used? ① Low density polythene ② Teflen ③ Poly acrylonitrile ④ High density polythene	4
41.	The incorrect statement about amylose is: ① In this L–D–⊕ glucose units are held by C–1 to C–4 glucosidic linkage ② It is a highly branched polymer of L–D–⊕ glucose units ③ It is present in starch to an extent of 15–20% ④ It is water soluble	4
42.	Observe the following reactions The order of reactivity of x, y, z towards S_N1 reaction is ① x > z > y ② x > y > z ③ y > x > z ④ y > z > x	4
43.	Consider the following sequence of reactions The incorrect statement about z is ① z gives yellow precipitate of CHI_3 with NaOH + I_2 solution ② z gives isopropyl alcohol on reduction with H_2 in the presence of Pd catalyst ③ z on reaction with CH_3MgBr followed by hydrolysis gives 2° alcohol ④ z does not give positive test with Fehling's reagent	4
44.	What are x and y in the following reaction sequence? ① H_2O/H_2SO_4 ; $KMnO_4/H^+$ ② H_2O/H_2SO_4 ; PCC ③ H_2O/H_2SO_4, Hg^{2+} ; $KMnO_4/H^+$ ④ H_2O/H_2SO_4, Hg^{2+} ; PCC	4
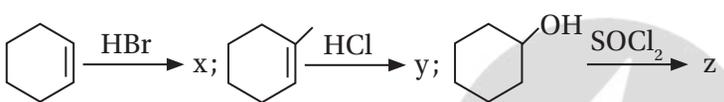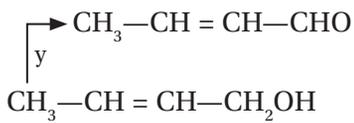
| 45. | Arrange the products I, II, III from the following reactions in decreasing order of their acid strength.
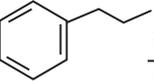
(A) $\xrightarrow[\text{(ii) H}_3\text{O}^+]{\text{(i) KMnO}_4/\text{OH}^-}$ I

(B) CH_3COOH $\xrightarrow[\text{(ii) H}_2\text{O}]{\text{(i) Br}_2/\text{red P}}$ II
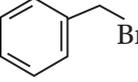
(C) Br $\xrightarrow[\substack{\text{(ii) CO}_2/\text{dry ether}\\ \text{(ii) H}_3\text{O}^+}]{\text{(i) Mg/dry ether}}$ III

① III > II > I ② III > I > II ③ II > I > III ④ I > II > III | 4 |

SECTION B

Integer type Questions.
Section B consists of 5 questions of 4 marks each.

46.	$\xrightarrow[\text{H}_2\text{SO}_4]{\text{HNO}_3}$ In the above reaction, 3.9 g of benzene on nitration gives 4.92 g of nitrobenzene. The percentage yield of nitrobenzene in the above reaction is _____ %. (Round off to the Nearest INteger) (Given atomic mass: C : 12.0 u, H : 1.0 u, N : 14.0 u)	4
47.	The hydrogen electrode is dipped in a solution of pH = 3 at 25°C. The potential of the cell would be ____ × 10^{-3}. (The value of $\dfrac{2.303RT}{F}$ is 0.059 V) (Nearest Integer)	4
48.	3 g of acetic acid is added to 250 mL of 0.1 M HCl and the solution made up to 500 mL. To 20 mL of this solution 1/2 mL of 5 M NaOH is added. The pH of the solution is _____. (Given: pK_a of acetic acid = 4.75, molar mass of acetic acid = 60 g/mol, log 3 = 0.4771] Neglect any change in volume.	4
59.	The vapour pressures of A and B at 25°C are 90 mm Hg and 15 mm Hg respectively. If A and B are mixed such that the mole fraction of A in the mixture is 0.6, then the mole fraction of B in the vapour phase is x × 10^{-1}. The value of x is _____. (Nearest integer)	4
50.	For a chemical reaction, A + B $\rightleftharpoons$ C + D ($\Delta_rH° = 80$ kJ mol^{-1}) the entropy change $\Delta_rS°$ depends on the temperature T (in K) as $\Delta_rS° = 2T$ (JK^{-1} mol^{-1}). Minimum temperature at which it will become spontaneous is _____ K. (Integer answer)	4

Mathematics

Section A: consists of 20 questions of 4 marks each.

51.	In an increasing sequence of 4 positive integers, the first 3 terms are in A.P., the last three terms are in G.P. and the first and fourth terms differ by 30. The sum of all the four terms is ① 120 ② 129 ③ 130 ④ 150	[4]
52.	If one root of the equation $x^2 + px + 12 = 0$ is 4, while the equation $x^2 + px + q = 0$ has equal roots, then the value of q is ① 4 ② 49/4 ③ 4/49 ④ 12	[4]
53.	If A = {1, 3, 5, 7, 9, 11, 13, 15, 17}, B = {2, 4, ... , 18} and N, the set of natural numbers, is the universal set, then $(A' \cup (A \cup B) \cap B')$ is equal to ① ϕ ② N ③ A ④ B	[4]

54.	The equation, $[1 \; x \; y] \begin{bmatrix} 1 & 3 & 1 \\ 0 & 2 & -1 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 \\ x \\ y \end{bmatrix} = [0]$ has for
	
	 (i) y = 0 (p) rational roots
	 (ii) y = –1 (q) irrational roots
	             (r) integral roots
	
	 Which of these is a correct match ?
	
	      (i) (ii) (i) (ii) (i) (ii) (i) (ii)
	 ① (p) (r) ② (q) (p) ③ (p) (q) ④ (r) (p)
		[4]

55.	If the last term in the binomial expansion of $\left(2^{1/3} - \dfrac{1}{\sqrt{2}} \right)^n$ is $\left(\dfrac{1}{3^{5/3}} \right)^{\log_3 8}$ then the 5th term from the beginning is ① 210 ② 420 ③ 105 ④ –210	[4]
56.	If $|z - i \, Re(z)| = |z - Im(z)|$ then ① $Im(z) = 2$ ② $Re(z) = 2$ ③ $Re(z) + Im(z) = 2$ ④ $|Re(z)| = |Im(z)|$	[4]
57.	A box contains 6 nails and 10 nuts. Half of the nails and half of the nuts are rusted. If one item is chosen at random, the probability that it is rusted or is a nail is ① $\dfrac{3}{16}$ ② $\dfrac{5}{16}$ ③ $\dfrac{11}{16}$ ④ $\dfrac{14}{16}$	[4]
58.	If the mean of the distribution is 2.6, then the value of y is 	Variate x	1	2	3	4	5	 	Frequency f of x	4	5	y	1	2	 ① 24 ② 13 ③ 8 ④ 3	[4]

59.	If $\Delta = \begin{vmatrix} -x & a & b \\ b & -x & a \\ a & b & -x \end{vmatrix}$, then a factor of Δ is ① $a + b + x$ ② $x^2 - (a - b)x + a^2 + b^2 + ab$ ③ $x^2 + (a + b)x + a^2 + b^2 - ab$ ④ x	[4]
60.	A round table conference is to be held between 20 delegates of 20 countries. The number of ways they can be seated if two particular delegates (i) are always to sit together is (18) ! (ii) never to sit together is 17×18 ! Now, choose the correct option. ① Only (i) is correct ② Only (ii) is correct ③ Both (i) and (ii) are correct ④ Both (i) and (ii) are wrong	[4]
61.	A box contains 10 mangoes out of which 4 are rotten. 2 mangoes are taken out together. If one of them is found to be good, the probability that the other is also good is ① $1/3$ ② $8/15$ ③ $5/13$ ④ $2/3$	[4]
62.	If $(a + ib)^5 = p + iq$, then $(b + ia)^5$ is equal to ① $q + ip$ ② $p - iq$ ③ $q - ip$ ④ $-p - iq$	[4]
63.	The value of $0.2^{\log_{\sqrt{5}}\left(\frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \ldots\right)}$ ① 4 ② $\log 4$ ③ $\log 2$ ④ 2	[4]
64.	In a certain town, 25% families own a phone, 15% own a car, and 65% own neither a phone nor a car. 2000 families own both a car and a phone. Consider the following statements in this regard. I. 10% families own both a car and a phone. II. 35% families own either a car or a phone. III. 40,000 families live in the town. Which of the above statements are correct ? ① I and II ② I and III ③ II and III ④ I, II and III	[4]
65.	if the coefficient of x^n in $(1 + x)^{101}(1 - x + x^2)^{100}$ is non-zero, then n cannot be of the form ① $3r + 1$ ② $3r$ ③ $3r + 2$ ④ $4r + 1$	[4]
66.	Which of the following equations has maximum number of real roots ? ① $x^2 - |x| - 2 = 0$ ② $x^2 - 2|x| + 3 = 0$ ③ $x^2 - 3|x| + 2 = 0$ ④ $x^2 + 3|x| + 2 = 0$	[4]
67.	If the following equations $x + y - 3 = 0$; $(1 + \lambda)x + (2 + \lambda)y - 8 = 0$; $x - (1 + \lambda)y + (2 + \lambda) = 0$ are consistent then the value of λ is ① 1 ② -1 ③ 0 ④ 2	[4]

68.	If the two equations $x^2 - cx + d = 0$ and $x^2 - ax + b = 0$ have one common root and the second equation has equal roots, then $2(b + d) =$	[4]
	① ac ② – ac ③ 0 ④ a + c	
69.	If A is non-singular and $(A - 2I)(A - 4I) = 0$, then $\frac{1}{6}A + \frac{4}{3}A^{-1} =$	[4]
	① 0 ② I ③ $2I$ ④ $6I$	
70.	A coin is tossed 2n times. The chance that the number of times one gets head is not equal to the number of times one gets tail is	[4]
	① $\dfrac{(2n!)}{(n!)^2}\left(\dfrac{1}{2}\right)^{2n}$ ② $1 - \dfrac{(2n!)}{(n!)^2}$ ③ $1 - \dfrac{(2n!)}{(n!)^2}\cdot\dfrac{1}{4^n}$ ④ $1 + \dfrac{(2n!)}{(n!)^2}\cdot\dfrac{1}{2^n}$	

SECTION B

Section B consists of 5 questions of 4 marks each.

71.	Find the mean deviation about the mean for the following data : 6, 7, 10, 12, 13, 4, 8, 12	[4]
72.	Number of selections of 6 different letters that can be made from the words SUMAN and DIVYA so that each selection contains 3 letters from each word is _____ .	[4]
73.	If a, b and c are in A. P., then $\dfrac{(a - c)^2}{(b^2 - ac)}$ is equal to _____ .	[4]
74.	A drawer contains a mixture of red socks and blue socks, at most 17 in all. It so happens that when two socks are selected randomly without replacement, there is a probability of exactly 1/2 that both are red or both are blue. The largest possible number of red socks in the drawer that is consistent with this data is _____ .	[4]
75.	If the product of roots of equation $\begin{vmatrix} 1+2x & 1 & 1-x \\ 2-x & 2+x & 3+x \\ x & 1+x & 1-x^2 \end{vmatrix} = 0$ is p then 2p = _____ .	[4]

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