Sr. No.	Question	A	B	C	D	Ans
1	If two forces of magnitude P and 2P act on a body , then their miniimum resultant is	2P	3P	P	4P	**c**
2	Two forces 3N and 1N act at normal to each other.The resultant is	$(10)^{½}$	$(12)^{½}$	$(8)^{½}$	$(7)^{½}$	**a**
3	Two forces 2N and 4N act at a point on a body.The resultant when they act at 60° is	$(10)^{½}$	$(6)^{½}$	$(28)^{½}$	$(8)^{½}$	**c**
4	If two forces of magnitude 4kN and 8kN act on a body , then their minimum resultant is	5kN	4kN	3kN	2kN	**b**
5	If two forces each of magnitude 'F' act at right angles, their effect may be neutralised by a third force P. The value of P is	$(2)^{½}F$	$(F)^{½}$	$(3F)^{½}$	$(5F)^{½}$	**a**
6	If the resultant of two forces (P+Q) and(P-Q) is$(P^2+Q^2)^{½}$, then the angle between them is given by	cos a=[-$(P^2+Q^2/2(P^2-Q^2)]$	cos a=(P^2+Q^2)	cos a=(P^2-Q^2)	cos a=(P^2+Q^2+2PQ)	**a**
7	Two equal forces act on a body.The square of the resultant is three times the product of the forces. Then the angle between them is	90°	120°	60°	100°	**c**
8	If two forces of magnitude 10kN and 20kN act on a body , then their maximum resultant is	20kN	30kN	50kN	10kN	**b**
9	The effect of a given force remains unaltered at any point along the line of action .This is according to	resolution	law of motion	law of transmissibility	equilibrium	**c**
10	The resultant of two forces each of magnitude P/2 acting at a right angle is	P/2	$P/(2)^{½}$	$(2P)^{½}$	$(P)^{½}$	**b**
11	The resultant of two forces each of magnitude P acting at 60° is	2P	3P	$(3)^{½}P$	$(2)^{½}P$	**c**
12	The resultant of two forces P_1 and P_2 is R. If P_1 is doubled and the new resultant remains R and becomes perpendicular to P_2 ,then	$P_1=P_2$	$P_2=R$	$P_1=R$	$2P_1=R$	**c**
13	If two forces of magnitude 7N and 8N act at 60° , then the resultant will be	10N	15N	13N	16N	**c**
14	If two forces of magnitude P each act at angle 'B' .Then resultant will be	2P cosB	P cos2B	$P(2+2cosB)^{½}$	P cosB	**c**
15	If the resultant of two equal forces has the same magnitude, then the angle between them is	120°	60°	90°	50°	**a**
16	The angle between two forces ,when the resultant is maximum and minimum are	180°and 0°	90° and 0°	0° and 180°	0° and 90°	**c**
17	A ---------- is a single force which can replace two or more forces and produce the same effect.	resultant	equilibrant	moment	couple	**a**
18	The splitting of a force into two perpendicular directions without changing its effect is called	resultant	resolution	moment	couple	**b**
19	The square of the resultant of forces P1 and P2 with a angle 'D' between them is	$P1^2+P2^2+2P1P2$	$P1^2+P2^2+2P1P2cos D$	$P1^2+P2^2-2P1P2$	$P1^2+P2^2$	**b**
20	Two forces of magnitude 5N and 7N act at a point on a body.The square of the resultant is three times the product of the forces. Then the angle between them is	63.71°	60.71°	65.71°	55.71°	**a**
21	If the resultant is equal to half the magnitude of two equal forces, then the angle between the forces is	151.04°	140.5°	120°	100°	**a**

Sr. No.	Question	A	B	C	D	Ans
22	If two equal forces are acting at a right angle,having resultant force of $(20)^{½}$,then find out magnitude of each force.	$(15)^{½}$	$(5)^{½}$	$(25)^{½}$	$(10)^{½}$	**d**
23	When two equal forces are acting at 60° produce a resultant equal to $(28)^{½}$, then find out magnitude of each force	$(28/3)^{½}$	28/2	28/5	28/7	**a**
24	Two forces 5N and 7N act at a point on a body.The resultant when they act at right angle is	$(74)^{½}$	$(60)^{½}$	$70^{½}$	$84^{½}$	**a**
25	Two forces 3N and 5N act at a point on a body.The resultant when they act at 45° is	$(53.21)^{½}$	$(50.12)^{½}$	$(55.21)^{½}$	$(45.21)^{½}$	**c**
26	If two forces of magnitude 5kN and 10kN act on a body , then their maximum resultant is	25kN	15kN	10kN	20kN	**b**
27	Two equal forces act on a body.The square of the resultant is two times the product of the forces. Then the angle between them is	120°	90°	60°	30°	**b**
28	If two forces of magnitude 10kN and 20kN act on a body , then their minimum resultant is	20kN	10kN	30kN	5kN	**b**
29	Two forces of magnitude P and 2P act at a point on a body.The square of the resultant is three times the product of the forces. Then the angle between them is	120°	90°	60°	30°	**c**
30	If two forces of magnitude 2P and 4P act at a point on a body , then their maximum resultant is	4P	6P	3P	8P	**b**
31	If a number of forces are acting at a point, their resultant will be inclined at an angle θ with the horizontal, such that	$\tan\theta = \Sigma H / \Sigma V$	$\tan\theta = \Sigma V / \Sigma H$	$\tan\theta = \Sigma V \times \Sigma H$	$\tan\theta = 0$	**b**
32	The forces, which meet at one point and their lines of action also lie in the same plane, are kNown as	coplanar concurrent forces	coplanar non-concurrent forces	non-coplaner concurrent forces	non-coplaner forces	**a**
33	Coplanar concurrent forces are those forces which	meet at one point, but do not lie in the same plane	do not meet at one point and do not lie in the same plane	meet at one point and also lie in the same plane	do not meet at one point, but lie in the same plane	**c**
34	A 35N force makes an angle 140° with x axis Determine its components along the lines making angles of 300° and 240° with x axis.	-9.11N, 11.97N	-11.97 N, 6.07 N	10.98 N , 7.06 N	7.06N, 10.98N	**b**
35	A mass of 72Kg is resting on a board inclined at 20° with horizontal. What is the component of the mass normal & parallel to the board.	241.6N, 663.7N	246.3N, 354.3N	354.3N, 246.3N	663.7N, 241.6N	**d**
36	A force 235 N acts up the plane at an angle of 60° with the horizontal on a block resting on a 22° inclined plane Determine components of force normal and along the plane.	144.7N,185.2N	185.2N,144.7N	0N, 144.7N	185.2N, 0N	**b**
37	Determine the inclination of resultant of force 100N at 0° and 200N at 90°.	36.3°	63.435°	56.7°	186.3°	**b**

Sr. No.	Question	A	B	C	D	Ans
38	A block of mass 9 Kg rests on a plane making an angle of 16^0 with horizontal. Determine the component of the weight normal to the plane.	86.5N	84.86 N	24.34N	24.8N	**b**
39	A telephone pole is supported by a wire which exerts a pull of 890N on the top of the pole. If the angle between the wire and the pole is 50^0, what are the horizontal and vertical components?	681.8N, 572.1N	352.3N, 853.4N	853.4N, 352.3N	572.1 N, 681.8N	**a**
40	Two forces act an angle of 120°. If the greater force is 50 N and their resultant is perpendicular to the smaller force, the smaller force is	20 N	25 N	30N	35N	**b**
41	Four concurrent forces1kN, 2kN, 3kN and 4kN acting at an angle of 20°, 63°, 95°,150° from positive x axis. Determine their resultant in kN.	7.35	4.35	3.35	2.25	**a**
42	Three concurrent forces Q=100N, P=150N, F=150N act at point O. Q is along +ve x axis, P is acting at an angle 45° in forth quadrant and F is acting in third quadrant at an angle 45°. Then their resultant is	150N	300N	234.52N	100N	**c**
43	Effect of a force on a body depends upon its	direction	magnitude	position	all of these	**d**
44	If two forces each equal to T in magnitude act at right angles, their effect may be neutralised by a third force acting along their bistor in opposite direction whose magnitude will be	2 T	T/2	√2T	none of these	**c**
45	A boat is being towed through a canal by a cable which makes an angle of 10^0 with the shore. If the pull in the cable is 200N, find the force tending to move the boat along the canal.	197N	200N	250N	100N	**a**
46	Two equal forces of magnitude 'P' represents the components of resultant.The angle made by the resultant with vertical is	45°	56.3°	26.56°	0°	**a**
47	forces 138.5N horizontal and 183.5N vertical represents components of resultant then the angle made by the resultant with vertical is	47.04°	34.04°	37.04°	44.04°	**c**
48	Determine the inclination of resultant of forces 10N at 0° and 20N at 90°.	36.3°	63.435°	56.7°	186.3°	**b**
49	A man of weight 60 kg is standing on a ladder of slope 1H: 3V, then the components of weight along the ladder and normal to ladder are	558.37N,168.18N	-558.37N,-186.18N	186.37N,558.18N	-558.37N,186.18N	**b**
50	two boys are pulling a box with the help of two cables. If the pull in the cables are 23 N, at an angle of 40° and 35 N at an angle of 130° with +ve x axis, their resultant will be	14.88 N	41.88 N	58 N	12 N	**b**
51	Determine the inclination of resultant of forces 40N at 0° and 20N at 90°.	45°	26.56°	20.56°	63.435°	**b**
52	A block of mass 19 Kg rests on a plane making an angle of 16^0 with horizontal. Determine the component of the weight normal to the plane.	51.37N	179.16N	197.16N	15.37N	**b**

Sr. No.	Question	A	B	C	D	Ans
53	A block of mass 23 Kg rests on a plane making an angle of 10^0 with horizontal. Determine the component of the weight normal to the plane.	222.20N	39.18N	22.22 N	93.18 N	**a**
54	Two forces act an angle of 120°. If the greater force is 150 N and their resultant is perpendicular to the smaller force, the smaller force is	70 N	75 N	30N	35N	**b**
55	Two forces act an angle of 120°. If the greater force is 100 N and their resultant is perpendic-ular to the smaller force, the smaller force is	50 N	75 N	30N	35N	**a**
56	Three concurrent forces Q=10N, P=15N, F=15N act at point O. Q is along +ve x axis, P is acting at an angle 45° in forth quadrant and F is acting in third quadrant at an angle 45°. Then their resultant is	23.45 N	32.45 N	45.45 N	40 N	**a**
57	Three concurrent forces Q=23N, P=43N, F=43N act at point O. Q is along +ve x axis, P is acting at an angle 45° in forth quadrant and F is acting in third quadrant at an angle 45°. Then their resultant is	65.01 N	56 .01 N	86 N	103 N	**a**
58	A boat is being towed through a canal by a cable which makes an angle of 10^0 with the shore. If the pull in the cable is 20N, find the force tending to move the boat along the canal.	19.7 N	3.47 N	34. 7 N	1.97 N	**a**
59	A boat is being towed through a canal by a cable which makes an angle of 10^0 with the shore. If the pull in the cable is 400N, find the force tending to move the boat along the canal.	69.45 N	393.92 N	6.94 N	93.3 N	**b**
60	Forces 160.5N horizontal and 173.5N vertical represents components of resultant then the angle made by the resultant with vertical is	42.77°	45°	47.22°	4.77°	**a**
61	Forces 90 N horizontal and 72.5 N vertical represents components of resultant then the angle made by the resultant with vertical is	51.14°	38.85°	15.14°	83.14°	**a**
62	A man of weight 40 kg is standing on a ladder of slope 1H: 3V, then the components of weight along the ladder and normal to ladder are	372.25 N & 124.12N	32.25 N & 124.12N	37.25 N & 24.12N	372.25 N & 24.12N	**a**
63	A man of weight 60 kg is standing on a ladder of slope 1H: 4V, then the components of weight along the ladder and normal to ladder are	57.01 N & 142.79 N	571.01 N & 142.79 N	571.01 N & 42.79 N	57.01 N & 42.79 N	**b**
64	two boys are pulling a box with the help of two cables. If the pull in the cables are 32 N, at an angle of 40° and 53 N at an angle of 130° with +ve x axis, their resultant will be	91.61 N	91.91 N	61.91 N	16.91 N	**c**
65	Two boys are pulling a box with the help of two cables. If the pull in the cables are 40 N, at an angle of 40° and 25 N at an angle of 130° with +ve x axis, their resultant will be	65 N	45.16 N	74.16 N	47.16 N	**d**

Sr. No.	Question	A	B	C	D	Ans
66	If the resultant is equal to 0.6 times the magnitude of two equal forces, then the angle between the forces is nearer to	145	135	120	100	**a**
67	If two equal forces are acting at a right angle,having resultant force of $(80)^{½}$,then find out magnitude of each force.	$(15)^{½}$	$(5)^{½}$	$(25)^{½}$	$(20)^{½}$	**d**
68	When two equal forces are acting at 60° produce a resultant equal to $10(3)^{½}$, then find out magnitude of each force	10	25	20	15	**a**
69	Two forces 5N and 7N act at a point on a body.The resultant when they act at right angle is	$(74)^{½}$	$(60)^{½}$	$70^{½}$	$84^{½}$	**a**
70	Two forces 5N and 6N act at a point on a body.The resultant when they act at 45° is	10.17	11	15	13	**a**
71	If two forces of magnitude 5kN and 10kN act on a body , then their maximum resultant is	25kN	15kN	10kN	20kN	**b**
72	Two equal forces act on a body.The square of the resultant is three times the product of the forces. Then the angle between them is	120°	90°	60°	30°	**c**
73	If two forces of magnitude 10kN and 20kN act on a body , then their minimum resultant is	20kN	10kN	30kN	5kN	**b**
74	Two forces of magnitude P and 2P act at a point on a body.The square of the resultant is four times the product of the forces. Then the angle between them is	41.4°	51.4°	45.4°	50.4°	**a**
75	If two forces of magnitude 2P and 4P act at a point on a body , then their maximum resultant is	4P	6P	3P	8P	**b**
76	A like parallel force system consists of four forces of magnitude 10N, 20N, 30N, and 40N acting at 0.2m apart from each other respectively. The position of the resultant from the first force 10N is	0.4 m	0.6 m	0.2 m	0.1 m	**a**
77	A door of width 1m can rotate if a moment of of 10 Nm is applied. The minimum force that can be applied to open it is	8.66 N	10 N	5 N	None of the above	**b**
78	A force of 200N acts 40° to the spoke of a cycle wheel 250 mm in radius. The moment about the center of the wheel will be nearer to	50 N m	38 Nm	32 Nm	30 Nm	**c**
79	The moment of the 30 N force passing through the coordinates (4, 0) and (0, 3) about the origin	60 Nm	100 Nm	72 Nm	45 Nm	**c**
80	A force of 100N makes an angle of 60^0 anticlockwise with the horizontal. It passes through the point having coordinates (4, 5). The moment of this force about origin is nearer to	306 Nm	466 Nm	446 Nm	606 Nm	**c**
81	A plate ABCD is of breadth AB=40mm and depth AD=20 mm. A force of 10 N at angle 285^0 is applied at D. The magnitude of the moment of the force about point A is nearer to	193 Nmm	133 Nmm	143 Nmm	93 Nmm	**a**

Sr. No.	Question	A	B	C	D	Ans
82	On a rod AD forces 20N, 10N, 35N, 15 N act at points A, B, C, D resp. Forces 20N, 10N, 15 N act downward and 35N acts upward. The position of the points B,C,D from A are 20mm, 30mm, and 50mm respectively. The position of the resultant from point A is	20 mm	125 mm	10 mm	25 mm	**c**
83	A force of 500 N is to be resolved into two forces P and Q parallel to and in the direction of line of action of F and acting one on each side of F at a distance of 3 and 2 units respectively. The values of P and Q are	200 N, 300 N	300 N, 200 N	250 N, 250 N	600 N, 100 N	**a**
84	A pulley of diameter AB = 200 mm is subjected to two equal unlike parallel forces of 2000 N one at A and other at B tangentially. A third force of 500 N acts through centre of pulley at 45^0 The resultant force and couple will be	2500N at 135^0 along with couple of 2000 Nm	500N at 45^0 along with couple of 400 Nm	500N at 45^0 along with couple of 2000 Nm	2000 N at 45^0 along with couple of 500 Nm	**b**
85	On a rod AD forces 20N, 10N, 35N, 15 N acts at points A, B, C, D. Forces 20N, 10N, 15 N act downwards and 35N acts upwards. The position of the points B,C,D from A are 20mm, 30mm, and 50mm respectively. The equivalent force couple system at A is	10 N, 500Nmm	10N,100 Nmm	80 N, 500Nmm	90 N , 1100 Nmm	**b**
86	Three like horizontal forces of 10N, 20N, and 10N act on a vertical rod at A, B, C. If AB = BC = 20 mm. The resultant force couple system at A is	40 N, 800 Nmm	0 N, 400 Nmm	20 N, 200 Nmm	None of these	**a**
87	Two like parallel forces of 60N and 180 N act 120 mm apart from each other. The position of the resultant from 60N force will be	100 mm	60 mm	80 mm	90 mm	**d**
88	Three weights 30N, 10N, 20N are placed at the three corners taken clockwise on a square ABCD normal to the plane.. What should be the weight at the remaining corner so that the resultant of the system lies at the center of square 'O'?	20 N	10 N	60N	Not possible	**d**
89	A force of 100 N acting tangential to a drum of radius 0.25 m, must be transferred parallel to itself to its center O. The moment which should accompany it for equivalent effect is	20 N m	25 N m	30 N m	35 N m	**b**
90	A force of 100 N acting tangential to a drum of radius 0.25 m, must be transferred parallel to itself to a diametrically opposite point B. The moment which should accompany it for equivalent effect is	30 N m	40 N m	50 N m	60 N m	**c**
91	Force of 60N acts at horizontal distance of 1m from origin, angle made by force with horizontal is 20º. The moment of force about origin is	20.5 Nm	30.5 Nm	96.42Nm	16.67Nm	**a**
92	Two like parallel forces are acting at a distance of 24 mm apart and their resultant is 20N. If the line of action of the resultant is 6mm from forceacting at left.The two forces are	15 N and 5 N	30 N and 5 N	25 N and 5 N	None of the above	**a**

Sr. No.	Question	A	B	C	D	Ans
93	Three forces acting on a rigid body are represented in magnitude, direction and action by the three side of a triangle taken in order. The forces are equivalent to a couple whose moment is equal to k times the area of triangle. k is equal to	1	2	0.5	None of the above	**b**
94	A couple produces	translatory motion	rotational motion	combined translatory and rotational	None of the above	**b**
95	The two forces of 100 N and 300 N have their lines of action parallel to each other but are in the opposite directions. These forces are kNown as	coplaner concurrent forces	coplaner non-concurrent forces	Like parallel forces	unlike parallel forces	**d**
96	A vertical force of P N acting in first quadrant in XY plane at(2m, 1m) . If P=200N, magnitude of moment about origin is	100 Nm	200 Nm	300 Nm	400 Nm	**d**
97	A force 10N at an angle 30° with x axis and acting in vertical plane, containing axis of tower is acting at the top of the tower of height 12 m. the magnitude of moment in Nm created by the force at the base of the tower is nearer to	104	100	120	100	**a**
98	A 20 kN weight is lifted by a crane from a horizontal distance of 6m from the position of the driver. What will be the magnitude of moment created by the weight at position of the driver?	120 kN m	150 kNm	175 kNm	200 kNm	**a**
99	If the arm of couple is doubled, its moment will	be halved	remain same	be doubled	none of these	**c**
100	In a couple, the lines of action of the two forces are	parallel to each other	inclined to each other	perpendicular to each other	none of the above	**a**
101	Find the moment of the force F about origin, Magnitude of F = 20N, Angle of F with horizontal is 30 degrees anticlockwise, Coordinates of pt of application of F (5,-4)m	119 Nm	82 Nm	60 Nm	100 Nm	**a**
102	The magnitude of two unlike parallel forces P each acting at 1 m apart, is equivalent to, two unlike parallel forces of 300 N each acting at a distance of 100 mm. Find P	240 N	60 N	120 N	30 N	**d**
103	A bar weighing 100 N is hinged at one end and the other end is tied to a vertical string which keeps the bar horizontal. The tension in the string is nearer to	500 N	100 N	50 N	10 N	**c**
104	Three like parallel forces of 20 N, 30 N and 40 N act at a distance 1m apart from each other. Their resultant acts at a distance of …….. from 20 N force	0.25 m	0.6 m	1 m	1.2 m	**d**
105	A force of 20 N passes from points A(1,2) and B(2,1). The moment of the force about the origin will be nearer to	21 Nm	30 N m	42 Nm	48 Nm	**c**
106	A force of 50 N acting at A(3,4) makes an angle of 50 degrees anticlockwise with the horizontal. Its moment about origin will be nearer to	150 Nm	222 Nm	244 Nm	260 Nm	**c**

Sr. No.	Question	A	B	C	D	Ans
107	Two unlike parallel forces of 20 N each act at 45 deg with the X-axis. The perpendicular distance between the line of action of the forces is 1 m. The moment produced is	10 Nm	15 Nm	18 Nm	20 Nm	**d**
108	Two unlike parallel forces of 20 N each act at 30 deg with the X-axis at points A and B which are 1m apart on the x axis. The moment produced is	5 Nm	10 Nm	12 Nm	15 Nm	**b**
109	A force of 50 N acts tangentially to a circle of diameter 750 mm. Its moment about a point situated diametrically opposite is	31000 Nmm	34000 Nmm	35000 Nmm	37500 Nmm	**d**
110	A force of 50 N acts tangentially to a circle of diameter 750 mm. Its moment about the center of the circle will be	18750 Nmm	15000 Nmm	15575 Nmm	12500 Nmm	**a**
111	If two unlike parallel forces are acting on a member then their resultant will lie	within the two forces	outside the two forces	at the center of the two forces	None of the above	**b**
112	If two like parallel forces are acting on a member then their resultant will lie	within the two forces	outside the two forces	at the center of the two forces	None of the above	**a**
113	Two unlike parallel forces 5 N each act at 4 m apart. The moment produced by these forces can be nullified by another two unlike parallel forces of 20 N each acting ……. m apart.	1	5	10	20	**a**
114	Three like parallel forces of 20 N, 30 N and P N act at a distance 1m apart from each other. Their resultant acts at a distance of 1.22 m from the 20 N force. The value of P is approximately equal to	10 N	20 N	30 N	40 N	**d**
115	A couple of 30 Nm is applied to a screw driver of length 0.3m to tighten a screw. The force required to produce the couple will be	25 N	75 N	100 N	200 N	**c**
116	A number of like parallel forces acting on a body can be	replaced by a single force	replaced by a couple	both A and B	None of the above	**a**
117	A square ABCD of sides 1m, rest on side AB. A force of 100 N acting at 45 deg with AB, acts at point C which is diagonally opposite to A. The moment of this force about A is	zero	71 Nm	100 Nm	142 Nm	**a**
118	What is the moment of force about the apex of triangle, if 3 forces of 40N each acting along the sides of equilateral triangle of side 2m taken in order	51.96Nm	69.3 Nm	30.6Nm	6.67Nm	**b**
119	Two identical members of 100mm length are joined together at their center to form a cross (+). Four forces 1N, 2N, 3N and 4N act at the ends normal to each member in the anti clockwise direction. Find the moment developed at the center.	40 Nmm	50 Nmm	160Nmm	500Nmm	**d**
120	If three like parallel forces 1N,1.5N and 2N act at distance of 0.5m each. Find distance of resultant from 1N force	0.5m	0.75m	0.61 m	0.21m	**c**

Sr. No.	Question	A	B	C	D	Ans
121	Four forces 50N,100N,150N,200N act in clockwise direction along the sides of a square of side 0.6m. The moment of force about the centroid of the square is	125Nm	250Nm	30Nm	150 Nm	**d**
122	Force F=300N acting vertically upwards at x=2m, y=2m The magnitude of moment of force about origin is	600Nm	660Nm	300Nm	330Nm	**a**
123	In a member ABCD,AB=1m,BC=1m,CD=4m, Force at A=20N acting vertically upwards ,at B=20N acting vertically downards, at C=30N acting vertically upwards and at D=40N acting vertically upwards.Resultant of the force system is	110N	90N	20N	70N	**d**
124	Two like parallel forces of 300N and 200N are acting at the ends of the rod of 4m length. Distance of resultant is	1.6m from larger force	4m from larger force	2m from larger force	none of the above	**a**
125	The algebraic sum of the two forces forming couple is equal to	magnitude of two forces	magnitude of one force	zero	none of the above	**c**
126	The effect of couple is unchanged when	couple is shifted to other position	couple is rotated through any angle	couple is shifted and rotated	all of the above	**d**
127	A force of 40N is applied perpendicular to the edge of the door 2m wide. Then moment of force about hinge is	80Nm	20Nm	40Nm	60Nm	**a**
128	Find resultant of forces when two like parallel forces of 40N and 70N which act at the ends of the rod 40cm long	110N	50N	30N	160N	**a**
129	The moment of resultant of a force system about any point is equal to the algebraic sum of moments of all other forces about the same point, this is the statement of law of	transmissibility of forces	superposition	Triangle of forces	Varignon's theorem	**d**
130	If a system of forces can be reduced to a force couple system at a given point without changing effect on the body , then it is	equipollent system	equivalent system	both a) and b)	none of the above	**b**
131	On a member AB two unlike parallel forces 20N each act at 0.6m apart. The equivalent system can be	couple of 12Nm	couple of 6Nm	force 20 N	force 0 N	**a**
132	What is the magnitude of vertical force required to produce a moment of 20Nm at point A (1m,1m) if the force is acting at point B(2m,2m)	40N	30N	20N	10N	**c**
133	Two like parallel forces of P=400N and Q=200N acting at the ends of the rod of 4m length ,then distance of resultant is	1.33m from P	1.44m from P	1.66m from P	1.66m from Q	**a**
134	A member AB of 600mm is inclined at 60 degrees to the horizontal.A force of 300N acts towards left horizontally at A. The equivalent force couple system at B is	1.558Nm(anticlockwise)	1.558Nm(clockwise)	300N with 1.558Nm(clockwise)	300N with 1.558Nm(anticlockwise)	**c**
135	Varignon' s theorem of moment is used to find	moment of resultant	position of resultant	algebraic sum of moments	all of the above	**d**

Sr. No.	Question	A	B	C	D	Ans
136	A member AB of 600mm length is inclined at 60 degrees to the horizontal.A force of 300N acts towards left horizontally at A. The moment produced at B is	1.558Nm(anticlockwise)	1.558Nm(clockwise)	2.558Nm(clockwise)	2.558Nm(anticlockwise)	**b**
137	A like parallel force system consists of four forces of magnitude 10N, 20N, 30N, and 40N acting at 0.2m apart from each other respectively at points A,B,C,D. The equivalent force couple system at A is	100N,40 Nm	100N,80 Nm	200N,40 Nm	100N,120 Nm	**a**
138	Force F=300N acting vertically upwards at x=2m, y=2m The equivalent force couple system at origin is	300 N,600Nm(clockwise)	300N, 600Nm(anticlockwise)	300N, 300Nm(clockwise)	300 N,300Nm(anticlockwise)	**b**
139	A pulley of diameter AB = 200 mm is subjected to equal unlike parallel forces of 2000 N one at A and other at B tangentially. A third force of 500 N acts through centre of pulley at 45^0 The resultant force will be	2500N at 135 degrees	500N at 45^0	4500N at 45^0	2000 N at 45^0	**b**
140	A vertical force of 20 N acts at point B(2m,2m). The moment produced at A (1m,1m) is	40Nm	30Nm	20Nm	10Nm	**c**
141	The 10 N force is required to be applied to a door at the end of width 1m to rotate it The moment produced about the hinge is	8.66 Nm	10 Nm	5 Nm	None of the above	**b**
142	When two like parallel forces of 40N and 70N which act at the ends of the rod 40cm long,find the position of resultant of forces from 40 N force,	25 cm	50 cm	30 cm	40 cm	**a**
143	Find the equivalent force couple system at A when two like parallel forces of 40N and 70N which act at the ends of the rod AB 40cm long respectively	110N ,2800 Ncm	55N, 2600 Ncm	30N,2500 Ncm	160N,2800 Ncm	**a**
144	A square ABCD of sides 1m, rest on side AB. A force of 100 N acting at 45 deg with AB, acts at point C which is diagonally opposite to A. the equivalent force couple system at A is	zero	100 N force acting at 45 deg	100 N at 45 degreees,100 Nm	100 N at 45 degrees,707 Nm	**b**
145	A vertical member AB of length 2 m is subjected to couple of 10Nm at the center. What should be the magnitudes of two unlike parallel forces acting 2m apart, which can balance the above couple .	5N,5N	15N,5N	10N,10N	10N,15N	**a**
146	The force of 100N is required to produce the moment in a screw driver of length 0.3 m to tighten the screw.The moment produced is	300Nm	75 Nm	30 Nm	200 Nm	**c**
147	A member AB of 600mm is inclined at 60 degrees to the horizontal.A force of 300N acts towards left horizontally at A. The equivalent force couple system at B	300N, 1.558Nm(anticlockwise)	300N,1.558Nm(clockwise)	300N,2.558Nm(clockwise)	300N,2.558Nm(anticlockwise)	**b**
148	A member AB of 800mm is inclined at 60 degrees to the horizontal.A force of 400N acts towards left horizontally at A. The moment at B is	290Nm	558Nm	277 Nm	155 Nm	**c**

Sr. No.	Question	A	B	C	D	Ans
149	A horizontal member AB of length 5m is subjected to inclined force of 30 N acting 40 degrees anticlockwise with the horizontal and acting at the center of the member. The magnitude of the moment produced about A and B are respectively	24.2 Nm,48.2 Nm	48.2 Nm,24.2 Nm	24.2 Nm,24.2 Nm	48.2 Nm,48.2 Nm	**d**
150	Three forces P = 50 N (towards East), Q = 100 N (towards North), and R = 75 N (towards South), are acting on the member, their resultant is nearer to	55.9 N	65.9 N	75.9 N	85.9 N	**a**
151	The forces 1N, 2 N, 3 N, 4N, 5N and 6N act in order along the sides of a regular hexagon. 1 N force acting horizontally towards right, then the resultant is nearer to	0 N	6 N	12 N	21N	**b**
152	Three forces P = 120 N (towards East), Q = 200 N (towards North), and R = 150 N (towards South), are acting on the member, their resultant is nearer to	120N	200N	130N	50N	**c**
153	If the forces 1N, 2 N, 3 N, 4N, and 5 N act in order along the sides of a regular pentagon & 1 N force acting horizontally towards right, then the resultant is nearer to	3N	4.75N	6N	4.25N	**d**
154	Two Forces acting on a ladder & resting against vertical wall and horizontal floor is an example of ----------	Parallel forces	Coplanar nonconcurrent forces	Non coplanar forces	None of the above	**b**
155	Forces 10 N, 20 N, 30 N and 40 N act along sides of a rectangle PQ, QR, RS, SP. Their resultant force is nearer to	28.28 N	40N	100N	32.32N	**a**
156	If the forces 10N, 20 N, 30 N, 40N, 50N and 60N acts in order along the sides of a regular hexagon & 10 N force acting horizontally towards right, then the resultant is nearer to	50.55 N	60N	86.67N	70.70N	**b**
157	Forces 50 N, 100 N, and 150 N act along sides of a equilateral triangle taken in order.Their resultant force is nearer to	0N	67.66N	86.67N	300N	**c**
158	For a straight rod ABC, AB=2m, BC=4m and forces acting are as 1) at A 40N along positive x axis. 2) at B 120N at an angle 50 degrees with negative x axis in anticlockwise direction 3) At C 60 N upwards. Their resultant force is nearer to	3.78N	5.21N	4.89N	6.33N	**c**
159	Forces acting tangentially on a circle of 2m radius are 1) 10 N acting North 2) 20 N acting NE 3) 30 N acting SE 4) 40 N acting south.Their resultant force is nearer to	65. 35N	55 N	40N	51.22 N	**d**
160	Three forces 10 N, 20 N, and P N act along sides of a equilateral triangle taken in order. 10N force acting horizontally towards right.Their resultant force is 17.32N an an angle 30 degrees with negative x axis in anticlockwise direction. The magnitude of the force P is nearer to	10N	17.32N	30N	21.42N	**c**

Sr. No.	Question	A	B	C	D	Ans
161	Four Forces 100N, 200N, 300N and P acting along sides of a rectangle in cyclic order. 100 N force is acting horizontally towards right. Their resultant is 282.8 N (in 3rd quadrant). The magnitude of the force P is nearer to	300N	400N	325.7N	378.25N	**b**
162	Four forces 25 N, 50 N, P and Q are acting along sides of a rectangle taken in order. 25N force acting horizontally towards right.Their resultant force is 200N acting vertically downward. The magnitude of the force P and Q are nearer to	150N, 25N	50N, 100N	100N, 50N	25N,150N	**d**
163	A square PQRS of side 1.5m is acted by forces 100N, 200N, 300N and 400N along the sides taken in order. The 100N force acts horizontally towards right. Their resultant force is nearer to	330N	282.80N	400N	250N	**b**
164	A bent up bar ABC such that AB= 3m, BC= 1m, and angle ABC is 90 degrees. The forces acting on it are 1) At A 40 N at an angle 30 degrees with positive x axis in anticlockwise direction 2) At B 20 N towards negative x axis 3) At C 10 N towards positive x axis. Their resultant force is nearer to	33.74N	36.73N	42.70N	31.73N	**d**
165	Forces 15N, 25N, 35N, 45N, and 50N act along & in the direction AB, AD, CB, CD, and BD of a square ABCD & 15 N force acting horizontally towards right. Their resultant force is nearer to	54.1N	63.40N	70.10N	60.54N	**c**
166	A horizontal bar ABCD is such that AB=BC=CD= 1.5 m carries the loads as 1) At A 10 N towards positive x axis 2) At B 30 N at an angle 40 degrees with negative x axis in clockwise direction 3) At C 45 N at an angle 50 degrees with positive x axis in anticlockwise direction 4) At D 55N towards Positive x axis. Their resultant force is nearer to	77.45N	89N	98.12N	63.40N	**b**
167	Three forces 10 N, 20 N, and P N act along sides of a equilateral triangle taken in order. 10N force is acting horizontally towards right.If resultant force acts vertically downward then force P is nearer to	30 N	15N	10N	zero	**d**
168	The forces acting on lamina having coordinates of points are 1) from A to B 100N, A(2,3) and B(4,4) 2) from P to Q 150 N, P(1,0) and Q(3,0) 3) from R to S 125N, R(0,2) and S(0,4). The resultant of the force system is nearer to	279.40N	313.42N	293.50N	286.37N	**c**

Sr. No.	Question	A	B	C	D	Ans
169	Forces acting at points A, B, C, D tangentially on a circle taken in order anticlockwise are 1) 100 N acting towards North 2) P N acting towards West 3) 50 N acting towards South 4)125 N acting towards East respectively. If resultant force is 60 N in 1st quadrant. Find P	87.45N	91.83N	103.42N	59.47N	**b**
170	If the forces 10N, 20 N, 30 N, 40N, and 50 N act in order along the sides of a regular pentagon while the force 10 N acting horizontally towards right, then the resultant is nearer to	62.5N	51.5N	42.5N	45.5N	**c**
171	The forces acting on a square plate 10m *10m are as under 1)AB = 10 N, A(1.2) and B(3,3) 2) CD=15N, C(0,1) and D(-3,3) 3) EF=20N, E(-2,0) and F(-1,-3) 4) GH=25N, G(1,-2) and H(3,0). The resultant of the force system is nearer to	34.22N	23.47N	28.41N	51.71N	**b**
172	Forces acting tangentially on a circle are 1) 4P N acting towards North 2) 3P N acting towards West 3) 2P N acting towards South 4) P N acting towards East . Resultant force is nearer to	1.4P	2P	1.8P	2.83P	**a**
173	ABCD is a rectangle in which AB=CD=100mm and BC=DA=80mm and force of 100N each is acting along AB and CD and force of 80N each is acting along BC and DA.Their resultant force is nearer to	0	180 N	360N	20N	**a**
174	A horizontal rod WXY, WX=2m, XY=4m subjected to the loading as 1) At W 4 N towards positive x axis 2) At X 12 N towards negative x axis 3) At Y 6 N upwards. Their resultant force is	14 N	2N	10 N	15 N	**c**
175	Four forces 50N, 100N, 110N, and 180N are acting along sides AB, BC, CD, and DA of a square ABCD. Their resultant force is nearer to	100N	110N	180N	50N	**a**
176	Four forces 180N, 100N, 60N, and 50N are acting along sides AB, BC, CD, and DA of a square ABCD. Their resultant force is nearer to	130N	60N	180N	100N	**a**
177	A man weighing 600N is standing at middle of light rod of 4m long. This man is lifted by other two men one is 1m from left end and other is 0.7m from right end, the weight carried by left and right man is nearer to	261N, 339N	300N, 300N	325N, 275N	339N, 261N	**d**
178	Four forces 50N, 90N, 20N, and 50N are acting along sides AB, BC, CD, and DA of a square ABCD of side 2m. Their resultant force is 50 N. Calculate position of resultant w.r.t A	4.4 m	4.1 m	4 m	3 m	**a**
179	Four forces 180N, 100N, 60N, and 50N are acting along sides AB, BC, CD, and DA of a square ABCD of side 2m. Their resultant force is 130N. Calculate position of resultant w.r.t A	2.46 m	3.46 m	2.64 m	3.64 m	**a**

Sr. No.	Question	A	B	C	D	Ans
180	Which of the following statement is correct i) sumation of moment of all forces about pt is equal to resultant moment @ same point ii) sumation of all forces is equal to resultant.iii) a&b iv) none of the above.	i	ii	i & iii	none of the above	**a**
181	Forces 10N, 20N, 30N & 40N acts along sides of rectangle PQ, QR,RS,SP respectively. Then resultant force is given by	28.28N	40N	48N	37N	**a**
182	Forces 10N, 20N, 30N & 40N acts along sides of rectangle PQ, QR,RS,SP of size3m X 4m has resultant force 28.28 N directed in S45W causing anticlockwise moment about P. Calcualte location of resultant w.r.t. P	3.63m	6.36m	2.36m	4.36m	**b**
183	Three forces 40N, 90N, 50N act along AB, BC, CA along sides of equilateral triangle in anticlockwise direction, AB being horizontal. Calculate resultant of the force system.	0 N	45.82 N	30 N	47 N	**b**
184	Resultant of four forces acting on square plate ABCD is 15N & N30E. If moment of resultant about B is 22.5 Nm clockwise, locate point where resultant intersts vertical side BC.	3.5 m	3m	2.5m	1.73m	**b**
185	Forces acting at points A, B, C, D tangentially on a circle taken in order anticlockwise are 1) 210 N acting towards North 2) 100 N acting towards West 3) 90 N acting towards South 4) 50 N acting towards East respectively. The resultant force is nearer to	130 N	120 N	200 N	100 N	**a**
186	Forces acting at points A, B, C, D tangentially on a circle taken in order anticlockwise are 1) 250 N acting towards North 2) 240 N acting towards West 3) 210 N acting towards South 4) 210 N acting towards East respectively. The resultant force is nearer to	50 N	60 N	70 N	45 N	**a**
187	Three forces act at A (4,0), B (4,3) and C (0,5) of magnitudes 60N vertically upward, 50N along OB and 100N horizontally towards right respectively. Find resultant.	150N	166.43N	100N	135N	**b**
188	Three forces act at A (4,0), B (4,3) and C (0,5) of magnitudes 60N vertically upward, 50N along OB and 100N horizontally towards right respectively. Find direction of resultant.	30º	35.30º	40.24º	32.74º	**d**
189	Three forces act at A (4m,0), B (4m,3m) and C (0,5m) of magnitudes 60N vertically upward, 50N along OB and 100N horizontally towards right respectively. Find moment about origin	200Nm	260Nm	245Nm	250Nm	**b**

Sr. No.	Question	A	B	C	D	Ans
190	Three forces act at A (4m,0), B (4m,3m) and C (0,5m) of magnitudes 60N vertically upward, 100N along OB and 80N horizontally towards right respectively. Find moment about origin	200Nm	160Nm	145Nm	180Nm	**b**
191	Three forces act at A (4m,0), B (4m,3m) and C (0,5m) of magnitudes 60N vertically upward, 100N along OB and 80N horizontally towards right respectively. Find the resultant.	150N	166.43N	200N	135N	**c**
192	Three forces act at A (4m,0), B (4m,3m) and C (0,5m) of magnitudes 60N vertically upward, 100N along OB and 80N horizontally towards right respectively. Find inclination of the resultant.	36.87º	35.30º	40.24º	32.74º	**a**
193	Three forces act at A (4m,0), B (4m,3m) and C (0,5m) of magnitudes 60N vertically upward, 50N along OB and 100N horizontally towards left respectively. Find inclination of the resultant.	36.87º	35.30º	56.31º	32.74º	**c**
194	Three forces act at A (4m,0), B (4m,3m) and C (0,5m) of magnitudes 60N vertically upward, 50N along OB and 100N horizontally towards left respectively. Find the resultant.	150N	166.43N	108.17N	135N	**c**
195	Three forces act at A (4m,0), B (4m,3m) and C (0,5m) of magnitudes 60N vertically upward, 50N along OB and 100N horizontally towards left respectively. Find the value of moment at origin	800Nm	740Nm	720Nm	780Nm	**b**
196	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 6m in length. Forces 100N, 200N and 120N act along AB,BC and CA respectively. Find resultant	50N	47.7N	57N	49.35N	**b**
197	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 6m in length. Forces 100N, 200N and 120N act along AB,BC and CA respectively. Find direction of resultant	76.66º	80.50º	70.24º	72.74º	**a**
198	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 6m in length. Forces 100N, 200N and 120N act along AB,BC and CA respectively. Find value of moment at A.	800Nm	665.6Nm	720Nm	680Nm	**b**
199	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 3m in length. Forces 80N, 100N and 60N act along AB,BC and CA respectively. Find .type of resultant	Force	Force and couple	Couple	Not existing	**c**
200	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 3m in length. Forces 80N, 100N and 60N act along AB,BC and CA respectively. Find magnitude of resultant	240Nm	210Nm	200Nm	190Nm	**a**

Sr. No.	Question	A	B	C	D	Ans
201	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 3m in length. Forces 80N, 100N and P N act along AB,BC and CA respectively. Find magnitude of P if system reduces to a couple.	45N	60N	80N	75N	**b**
202	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 3m in length. Forces 80N, P N and 60N act along AB,BC and CA respectively. Find magnitude of P if system reduces to a couple.	100N	60N	80N	75N	**a**
203	ABC is a right angled triangle having AB horizontal base of 4m length. AC is vertical 3m in length. Forces P N, 100N and 60N act along AB,BC and CA respectively. Find magnitude of P if system reduces to a couple.	100N	60N	80N	75N	**c**
204	ABC is a right angled triangle having AB horizontal base of 5m length. AC is vertical 12m in length. Forces 50N, 130N and 120N act along AB,BC and CA respectively. Find .type of resultant	Force and couple	Force	Couple	Not existing	**c**
205	ABC is a right angled triangle having AB horizontal base of 5m length. AC is vertical 12m in length. Forces 50N, 130N and 120N act along AB,BC and CA respectively. Find magnitude of resultant	500Nm	600Nm	580Nm	750Nm	**b**
206	ABC is a right angled triangle having AB horizontal base of 5m length. AC is vertical 12m in length. Forces P N, 130N and 120N act along AB,BC and CA respectively. Find magnitude of P if the system reduces to a couple.	100N	60N	50N	75N	**c**
207	ABC is a right angled triangle having AB horizontal base of 5m length. AC is vertical 12m in length. Forces 50N, P N and 120N act along AB,BC and CA respectively. Find magnitude of P if the system reduces to a couple.	130N	60N	50N	75N	**a**
208	ABC is a right angled triangle having AB horizontal base of 5m length. AC is vertical 12m in length. Forces 50N, 130 N and P N act along AB,BC and CA respectively. Find magnitude of P if the system reduces to a couple.	130N	60N	50N	120N	**d**