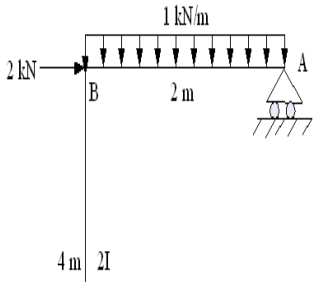
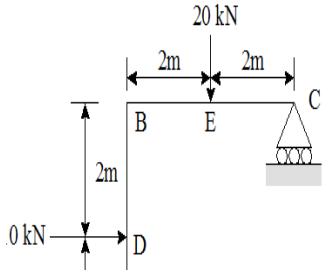
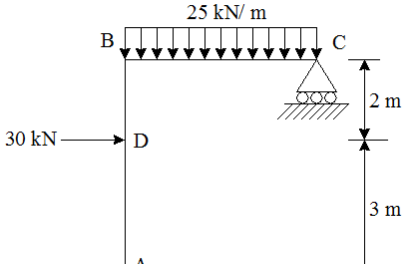
SN	Question	A	B	C	D	Ans
1	Using Castigliano's second theorem, the reaction at roller support A for the frame shown in Figure.1 is ----------	3.427 KN	5.602 KN	4.234 KN	2.437 KN	D
2	A frame ABC is loaded and supported as shown in Fig.2 Taking V_C as a redundant reaction, the B M expression for segment AD as a A origin is	$10x - (60 - 4V_C)$	$V_C x$	$V_c x - 20 (x - 2)$	$10x - 10 (x - 2) - (60 - 4V_C)$	**A**
3	A frame ABC is loaded and supported as shown in Fig.2 Taking V_C as a redundant reaction, the B M expression for segment AD as a A origin is ----------.	$10x + (60 - 4V_C)$	$V_C x$	$V_c x - 20 (x - 2)$	None of the above	D
4	A frame ABC is loaded and supported as shown in Fig3. Taking V_C as a redundant reaction, the B M expression for segment AB as a A origin is ----------.	$50x - 10x^2/2 - (192.5 - 3V_C)$	$V_C x - 15x^2/2$	Both A and B	None of the above	A
5	A frame ABC is loaded and supported as shown in Fig3. Taking V_C as a redundant reaction, the B M expression for segment CB as a C origin is ----------.	$50x - 10x^2/2 - (192.5 - 3V_C)$	$V_C x - 15x^2/2$	Both A and B	None of the above	B
6	A frame ABC is loaded and supported as shown in Fig4. Taking V_C as a redundant reaction, the B M expression for segment AD as a A origin is ----------.	$30x - (290 + 4V_C)$	$V_C x - 25x^2/2$	$30x - 30(x - 3) - (290 - 4V_C)$	None of the above	D
7	A frame ABC is loaded and supported as shown in Fig5. Taking V_C as a redundant reaction, the B M expression for segment CB as a C origin is ----------.	$60x - 15x^2/2 - (180 - 3V_C)$	$V_C x$	$V_C x + 40(x - 1.5)$	None of the above	D
8	A frame ABC is loaded and supported as shown in Fig5. Taking V_C as a redundant reaction, the vertical reaction at A is ----------.	$180 - 3V_C$	60	$40 - V_C$	None of the above	C







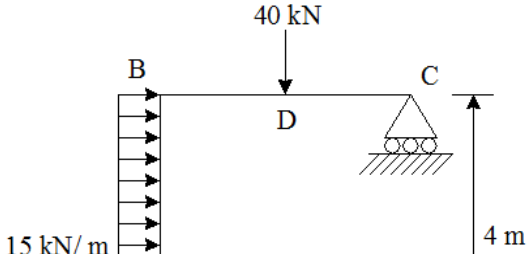


Fig 1

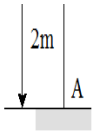


Fig 2

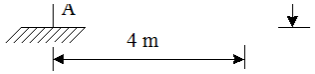


fig 3

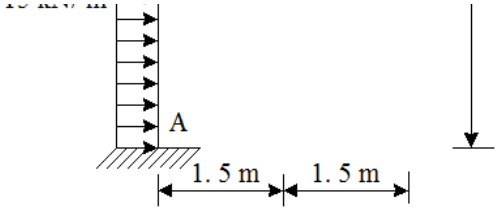


Fig 4

9	A continuous beam ABC consist span AB of 5 m loaded with uniformly distributed load of 10 kN/m and span BC of 5 m loaded with central point load of 30 kN. If end supports are simple and V_B is the redundant, the correct B M expression for segment AB as a origin A is --------.	$(45 – 0.5V_B)x – 10x^2/2$	$(35 – 0.5V_B)x$	$(35 – 0.5V_B)x – 30(x - 2.5)$	None of the above	A
10	A continuous beam ABC consist span AB of 5 m loaded with uniformly distributed load of 10 kN/m and span BC of 5 m loaded with central point load of 30 kN at point D. If end supports are simple and V_B is the redundant, the correct B M expression for segment CD as a origin C is ---------.	$(45 – 0.5V_B)x – 10x^2/2$	$(35 – 0.5V_B)x$	$(35 – 0.5V_B)x – 30(x - 2.5)$	None of the above	B
11	A continuous beam ABC consist span AB of 5 m loaded with uniformly distributed load of 10 kN/m and span BC of 5 m loaded with central point load of 30 kN at point D. If end supports are simple and V_B is the redundant, the correct B M expression for segment CB as a origin C is ---------.	$(45 – 0.5V_B)x – 10x^2/2$	$(35 – 0.5V_B)x$	$(35 – 0.5V_B)x – 30(x - 2.5)$	None of the above	C
12	A continuous beam ABC consist span AB of 5 m loaded with uniformly distributed load of 10 kN/m and span BC of 5 m loaded with central point load of 30 kN. If end supports are simple and V_B is the redundant, the reaction at support A is ----------.	45	$(35 – 0.5V_B)$	$(45 + 0.5V_B)$	None of the above	D

13	A continuous beam ABC consist span AB of 4 m loaded with uniformly distributed load of 20 kN/m and span BC of 4 m loaded with uniformly distributed load of 10 kN/m. If end supports are simple and V_B is the redundant, the correct B M expression for segment CB as a origin C is ----------.	$(50 – 0.5V_B)x – 5x^2$	$(70 – 0.5V_B)x – 10x^2$	Both A and B	None of the above	**A**
14	A continuous beam ABC consist span AB of 6 m loaded with central point load of 40 kN at D and span BC of 4 m loaded with central point load of 60 kN at E. If end supports are simple and V_B is the redundant, the correct B M expression for segment AD as a origin A is ----------.	$(40 – 0.5V_B)x – 40(x - 3)$	$(60 - 0.5V_B)x - 60(x - 2)$	$(40 – 0.5V_B)x$	$(60 - 0.5V_B)x$	C
15	A continuous beam ABC consist span AB of 4 m loaded with uniformly distributed load of 10 kN/m and span BC of 4 m loaded with central clockwise moment of 50 kNm at point D. If end supports are simple and V_B is the redundant, the expression of B M for segment AB as origin A is -----.	$(23.75 + 0.5 V_B)x – 10x^2/2$	$(16.25 – 0.5 V_B)x$	$(16.25 – 0.5 V_B)x - 50$	None of the above	D
16	A continuous beam ABC consist span AB of 4 m loaded with uniformly distributed load of 10 kN/m and span BC of 4 m loaded with central clockwise moment of 50 kNm at point D. If end supports are simple and V_B is the redundant, the expression of B M for segment CD as origin C is -----.	$(23.75 – 0.5 V_B)x – 10x^2/2$	$(16.25 – 0.5 V_B)x$	$(16.25 – 0.5 V_B)x - 50$	None of the above	B
17	A continuous beam ABC consist span AB of 3 m loaded central anticlockwise moment of 100 kNm at D and span BC of 3 m loaded with central clockwise moment of 40 kNm at point E. If end supports are simple and V_B is the redundant, the expression of B M for segment AD as origin A is ---------.	$(10 + 0.5 V_B)x$	$- (10 + 0.5 V_B)x$	Both A and B	None of the above	D
18	The prop reaction of a propped beam with central point load W is ---------.	0.3125W	5/8W	3/10W	15/16W	A

19	A cantilever of length L carries a point load W at its free end. It is propped at of distance of L/4 from the free end, the prop reaction is ----------.	W	1.5 W	1.25 W	None of the above	B
20	The prop reaction of a propped beam carrying uniformly distributed load is ----------.	3WL/8	WL/8	WL/3	None of them	A
21	The reaction at fixed end of a propped beam carrying uniformly distributed load is ----------.	3WL/8	5WL/8	WL/3	None of the above	B
22	The moment at fixed end in a propped beam due to a couple Mo applied at prop end is ---.	$3M_0/2$	$M_0/4$	$0.3M_0$	$0.5\ M_0$	D
23	The moment at fixed end of a propped beam carrying uniformly distributed load is ----------.	$3WL^2/8$	$5WL^2/8$	$WL^2/8$	None of the above	C
24	The reaction at fixed end of a propped beam of span L with central point load W is ---------.	11/16W	5/8W	3/10W	None of the above	A
25	A propped cantilever of span 4 m loaded with central point load 20 kN, the reaction at propped end is -------- kN.	4.25	13.75	6.25	None of the above	C
26	A propped cantilever of span 4 m loaded with central point load 20 kN, the reaction at fixed end is -------- kN.	14.75	13.75	6.25	None of the above	B
27	A propped cantilever of span 3 m loaded with uniformly distributed load of 10 kN/m, the reaction at propped end is -------- kN.	10.25	18.75	3.75	None of the above	D
28	A propped cantilever of span 3 m loaded with uniformly distributed load of 10 kN/m, the moment at fixed end is ---------- kNm.	33.75	18.75	3.75	None of the above	D
29	A fixed beam AB of span 7 m loaded with 80 kN at 2 m from A and 40 kN at 2 m from B, the fixed moment at A is --------- kNm.	48.98	97.98	122.45	None of the above	D
30	A fixed beam AB of span 7 m loaded with 80 kN at 2 m from A and 40 kN at 2 m from B, the reaction at A is ---------- kN.	61.92	72.07	47.93	37.43	B

31	A fixed beam AB of span 9 m loaded with uniformly distributed load of 10 kN/m on whole span with a point load of 20 kN at 2 m from B, moment at A --------- kNm.	91.7	47.52	64.48	None of the above	D
32	A fixed beam AB of span 9 m loaded with uniformly distributed load of 10 kN/m on whole span with a point load of 20 kN at 2 m from B, moment at B --------- kNm.	74.41	91.7	47.52	64.48	B
33	A fixed beam AB of span 9 m loaded with uniformly distributed load of 10 kN/m on whole span with a point load of 20 kN at 2 m from B, reaction at A --------- kN.	74.41	91.7	47.52	64.48	C
34	A fixed beam AB of span 6 m loaded with uniformly distributed load of 15 kN/m on whole span with central point load of 30 kN, the moment at A is -------- kNm.	60	180	67.5	None of the above	C
35	A fixed beam AB of span 6 m loaded with uniformly distributed load of 15 kN/m on whole span with central point load of 30 kN, the moment at A is -------- kN-m	60	180	90	None of the above	A
36	A fixed beam of 6 m span carries a point load of 90 kN at center, the bending moment at center is ----------.	195 kNm	105 kNm	165 kNm	None of the above	D
37	In continuous ABC, span AB of 4 m loaded with central point load of 80 kN and span BC of 6 m loaded with uniformly distributed load of 20 kN/m on whole span. The supports are simple, the moment at support B -------- kNm.	60	78	0	None of the above	B
38	In continuous ABC, span AB of 4 m loaded with central point load of 80 kN and span BC of 6 m loaded with uniformly distributed load of 20 kN/m on whole span. The supports are simple, the moment at support A -------- kNm.	60	78	90	None of the above	D

39	In continuous ABC, span AB of 4 m loaded with central point load of 80 kN and span BC of 6 m loaded with uniformly distributed load of 20 kN/m on whole span. The supports are simple, the moment at support C -------- kNm.	60	78	90	None of the above	D
40	In continuous ABC, span AB of 4 m loaded with central point load of 80 kN and span BC of 6 m loaded with uniformly distributed load of 20 kN/m on whole span. The supports are simple, the area of B M due to 80 kN load is -------- .	160	480	320	None of the above	A
41	In continuous ABC, span AB of 4 m loaded with central point load of 80 kN and span BC of 6 m loaded with uniformly distributed load of 20 kN/m on whole span. The supports are simple, the area of B M due to 20 kN/m load is -------- .	360	480	320	None of the above	A
42	In continuous ABC, span AB of 4 m loaded with central point load of 80 kN and span BC of 6 m loaded with uniformly distributed load of 20 kN/m on whole span. The supports are simple, the a_1x_1 for span AB is -------- .	160	480	320	None of the above	C
43	In continuous ABC, span AB of 4 m loaded with central point load of 80 kN and span BC of 6 m loaded with uniformly distributed load of 20 kN/m on whole span. The supports are simple, the a_2x_2 for span BC is -------- .	1080	480	320	None of the above	A
44	In continuous ABC, span AB of 5 m loaded with central point load of 30 kN and span BC of 5 m loaded with central point load of 50 kN . The supports are simple, the moment at B is -------- kNm.	62.5	37.5	Zero	None of the above	B

45	In continuous ABC, span AB of 4 m loaded with uniformly distributed load of 15 kN/m and span BC of 4 m loaded with uniformly distributed load of 18 kN/m. The supports are simple, the moment at B is --------- kNm.	30	36	42	None of the above	D
46	In continuous ABC, span AB of 4 m loaded with uniformly distributed load of 10 kN/m and span BC of 4 m loaded central point load of 20 kN. The supports are simple, the bending moment at B is -------- kNm.	20	35	Zero	None of the above	B
47	In continuous ABC, span AB of 4 m loaded with uniformly distributed load of 10 kN/m and span BC of 4 m loaded central point load of 20 kN. The supports are simple, the area of B M due to 10 kN/m is -------- .	53.33	40	Zero	None of the above	A
48	In continuous ABC, span AB of 4 m loaded with uniformly distributed load of 10 kN/m and span BC of 4 m loaded central point load of 20 kN. The supports are simple, the a_2x_2 for span BC is -------- .	106.67	85	100	None of the above	D
49	Redundant frames may be analyzed by ---------.	Castigliano's second theorem	Castigliano's first theorem	Funicular polygon	Area moment method	A
50	Castigliano's second theorem may be used to find reaction in a ----------.	Propped cantilever	Continuous beam	Fixed beam	All of the above	D
51	The beam whose one end fixed and other end is simply supported is known as --------.	Fixed beam	Propped cantilever	Continuous beam	Compound beam	B
52	It is difficult to use the strain energy method for a structure	Degrees of freedom are less	Degrees of freedom are more	Degrees of redundancy are more	Degrees of redundancy are less	C
53	For a beam carrying an uniformly distributed load,the strain energy will be maximum in case of the beam is ----------.	Cantilever	Simply supported	Propped cantilever	Fixed at both end	**A**
54	A beam constrained from both rotation and translation by supports is called ----------.	Encased beam	Direction-fixed ends beam	Fixed beam	All of these	D

55	Castigliano's theorem fall under the category of ----------.	Displacement method	Equilibrium method	Force method	Stiffness method	C
56	Fixed end moment due to support settlement is ---------.	96EIδ/L2	6EIδ/L2	6EIδ/L	None of the above	B
57	The edge view of the neutral surface of a deflected beam is known as ---------.	Elastic curve	Deflection curve	Both A and B	None of the above	C
58	Degree of indeterminacy of propped cantilever is --------.	1	0	2	None of the above	A
59	Method of least work is also known as ----------.	Castigliano's first theorem	Castigliano's second theorem	First theorem of Moment area method	Second theorem of moment area method	B
60	Fixed end moment for a fixed beam AB of span L loaded with uniformly distributed load w ------.	(wL2/10)	(wL2/12)	(wL2/08)	None of the above	B
61	Fixed end moment for a fixed beam AB of span L loaded with central point load is W ------.	WL/8	WL/10	WL/4	None of the above	A
62	Fixed end moment at support A for a fixed beam AB of span L loaded with eccentric point load W at a from support A and b from support B is ------.	Wa2b/L2	Wab2/L2	Wa2b2/L2	None of the above	B
63	Fixed end moment at support A for a fixed beam AB of span L loaded with eccentric point load W at a from support A and b from support B is ------.	Wa2b/L2	Wab2/L	Wa2b2/L2	None of the above	D
64	Fixed end moment at support A for a fixed beam AB of span L loaded with clockwise moment M at a from support A and b from support B is ------.	(2b - a)Ma/L2	(b - 2a)Mb/L2	(b - 2a)Mab/L2	None of the above	B
65	Fixed end moment at support B for a fixed beam AB of span L loaded with clockwise moment M at a from support A and b from support B is ------.	(2b - a)Ma/L2	(b - 2a)Mb/L2	(b - 2a)Mab/L2	None of the above	A
66	While using three moment equation a fixed end of a continuous beam is replaced by an additional span of ----------	Zero length	Infinite length	Zero moment of inertia	None of the above	A

67	The three moment equation is applicable only when ----------.	The beam is prismatic	There is no settlement of supports	There is no discontinuity such as hinges within the span	The spans are equal	C
68	The theorem of three moments express the condition of ----------.	Shear force	Support moments	Mid-span moments	None of the above	B
69	Maxwell-Betti reciprocal theorem is based on ----------.	Muller-Breslau principle	Principle of least work	Principle of superposition	None of the above	C
70	A simply supported beam is loaded with central point load W, the bending moment at the center is ----------.	WL/8	$WL^2/4$	WL/4	$WL^3/4$	C
71	In Clapeyron's theorem if both ends are simply supported the following statements is correct ----------.	Ends moments are taken zero	Imaginary span on one side is considered	Imaginary span is considered on both sides.	Ends moments is calculated by considered overhanging part as cantilever portion.	A
72	A simply supported beam fixed at both ends can be analysis by ----------	Moment area method	Conjugate beam method	Three moment equation	None of the above	C
73	Continuous beam loaded with central point load W on each span, the free bending moment is ----------.	WL/4	WL/8	WL/10	None of the above	A
74	Continuous beam loaded with uniformly distributed load w on each span, the free bending moment is ----------.	$wL^2/4$	$wL^2/8$	$wL^2/10$	None of the above	B
75	Continuous beam loaded with uniformly distributed load w on each span, the free bending moment is ----------.	$wL^2/4$	$wL^2/6$	$wL^2/10$	None of the above	D
76	Two span continuous beam loaded with eccentric point load W act at a from left bending support and b from interior support, the free end moment is ----------.	Wa^2b/L	Wab/L	Wab^2/L	None of the above	B
77	Two span continuous beam loaded with central couple M on each span, the free end moment is ----------.	M/2	M	2M	None of the above	A
78	In two span continuous beam moment at supports is ----------.	Sagging	Hogging	Both A and B	None of the above	**B**
79	In analysis of two span continuous beam by strain energy method, the redundant force are ----------.	Fixed	Choice to solver	Both A and B	None of the above	B

80	In a continuous beam overhanging part act as a ----------.	Virtual part	Propped Cantilever	Imaginary part	None of the above	D
81	In a continuous beam, if one of the support is sink then it reflect on ---------.	End moments	Support moments	Twisting moments	Bending moments	B