



Department of Civil Engineering

CE8602 STRUCTURAL ANALYSIS II

Unit IV - MCQ Bank

1. Cable is a tension member.

- a) **True**
- b) False

Answer: a

2. The shape of the cable is a funicular polygon.

- a) **True**
- b) False

Answer: a

3. The shape of the cable, when loaded with uniformly distributed load throughout the span is _____

- a) Linear always
- b) **Parabolic always**
- c) Trapezoidal always
- d) Linear or parabolic depending upon the intensity of loading

Answer: b

4. The horizontal thrust produced at supports of cable when loaded with uniformly throughout the span is

- a) $WL^2/32H$
- b) $WL/16H$
- c) **$WL/8H$**
- d) $WL/2H$

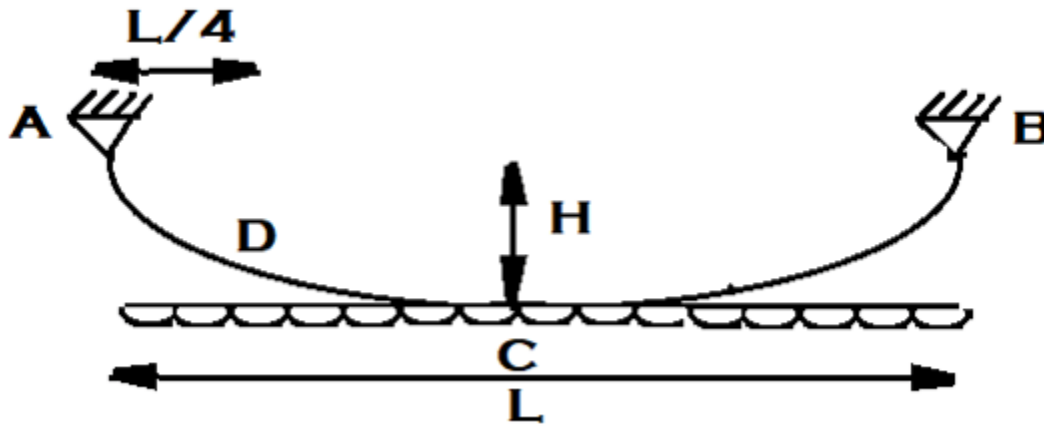
Answer: c

5. Minimum tension in the cable when loaded uniformly throughout the span is _____

- a) $WL^2/32H$
- b) $WL^2/16H$
- c) $WL^2/8H$
- d) $WL^2/2H$

Answer: c

6. Bending Moment at point D for the shown figure is _____



- a) 0
- b) $WL^2/8$
- c) $WL^2/2$
- d) $WH^2/2$

Answer: a

7. Maximum tension in the cable when loaded uniformly throughout the span is

- a) $WL^2(1+L^2/2H^2)$
- b) $WL^2(1+L^2/4H^2)$
- c) $WL^2(1+L^2/8H^2)$
- d) $WL^2(1+L^2/16H^2)$

Answer: d

8. Equilibrium equations used to analyse cable is _____

- a) $\sum H = 0$ only
- b) $\sum H = 0$ and $\sum V = 0$ only
- c) $\sum H = 0$, $\sum V = 0$ and $\sum M = 0$**
- d) $\sum V = 0$ only

Answer: c

9. Pick up the incorrect statement from the following. In case of suspension bridge due to rise in temperature,

- (A) dip of the cable increases
- (B) length of the cable increases
- (C) dip of the cable decreases**
- (D) none of the these.

Answer: c

10. To avoid bending action at the base of a pier,

- (A) suspension and anchor cables are kept at the same level
- (B) suspension and anchor cables are fixed to pier top
- (C) suspension cable and anchor cables are attached to a saddle mounted on rollers on top of the pier**
- (D) none the these

Answer: c

11. The shape of a suspended cable under its own weight, is

- (A) parabolic
- (B) circular
- (C) **catenary**
- (D) catenary

Answer: c

12. Cables resist external loads by

- (A) **Tension**
- (B) Compression
- (C) Bending
- (D) Compression & bending

Answer: a

13. An arch resist the external load by

- (A) Normal thrust
- (B) Normal thrust and bending moment
- (C) Bending moment and radial shear
- (D) **Normal thrust, radial shear and bending moment**

Answer: d

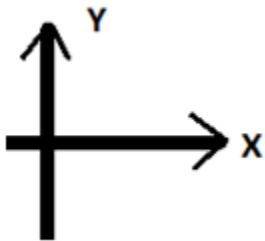
14. The shape of cable under transverse uniformly distributed load is

- (A) Parabolic**

- (B) Catenary
- (C) Circular
- (D) Triangular

Answer: a

Following sign convention for force direction is followed:-

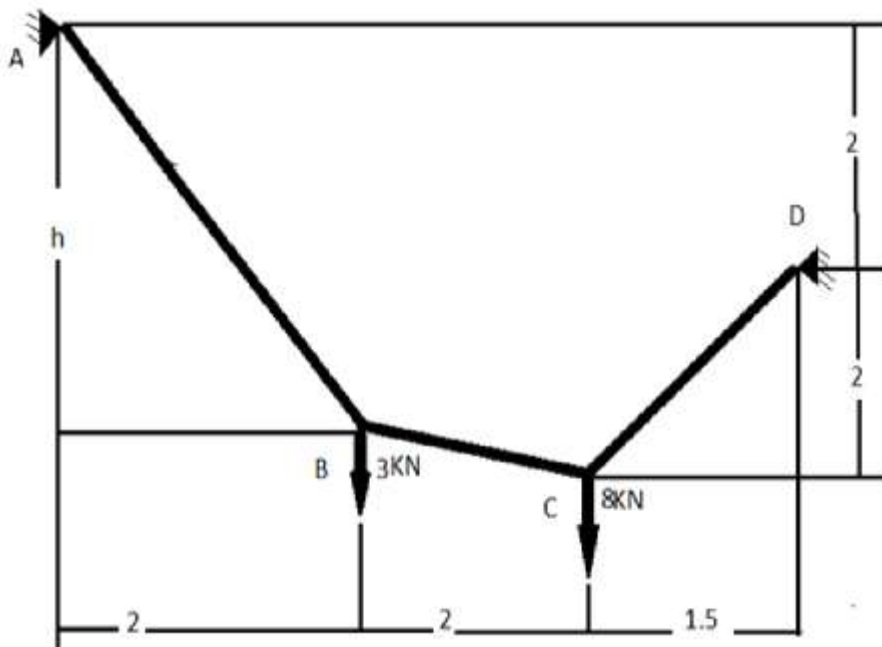


For moments, clockwise is considered -ve.

All the options are given in KN and KN/ft. wherever applicable.

All distances mentioned below are in ft.

Following is a discretely loaded cable.



15. Find the tension in cable CD.

- a) 4.79
- b) 5.79
- c) 6.79**
- d) 7.79

Answer: c

16. What will be the tension in cable BC?

- a) 4.82**
- b) 5.82
- c) 6.82
- d) 7.82

Answer: a

17. What will be the tension in cable AB?

- a) 4.9
- b) 5.9
- c) 6.9**
- d) 7.9

Answer: a

18. What will be the value of h?

- a) .74
- b) 1.74
- c) 2.74**
- d) 3.74

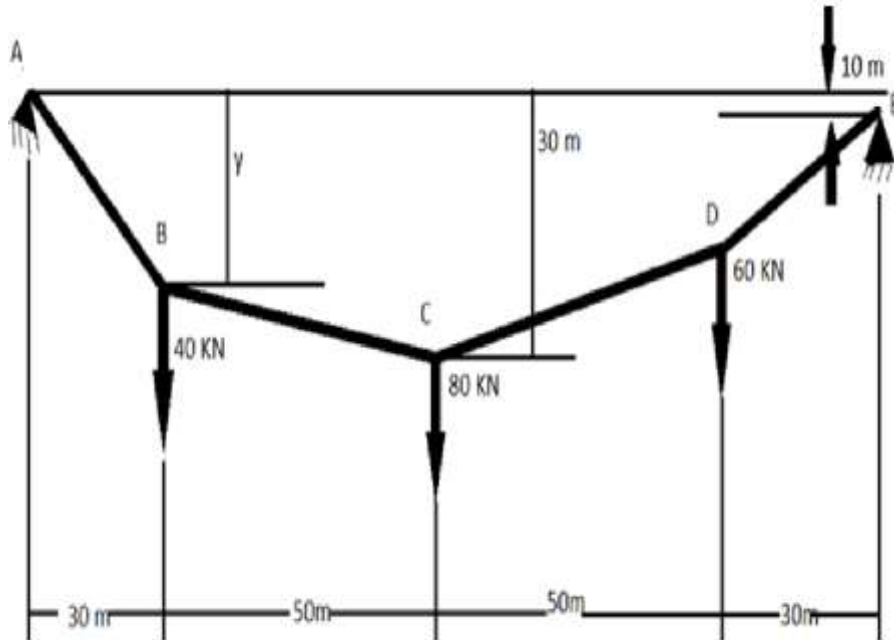
Answer: c

All the options are given in KN and KN/m. wherever applicable.

All distances mentioned below are in m.

Following is a discretely loaded cable.

A and E are supported by pin supports.



19. Compute tension in cable AB.

- a) 110.87
- b) 210.87**
- c) 310.87
- d) 410.87

Answer: b

20. What will be the tension in cable DE?

- a) 106.12
- b) 206.12**
- c) 306.12
- d) 406.12

Answer: b

21. In force analysis, weight of cable is generally _____

- a) Added
- b) Neglected
- c) Added in some, neglected in others arbitrarily
- d) Depends upon magnitude of other load**

Answer: d

22. It is generally assumed that the cable is _____

- a) Perfectly flexible
- b) Perfectly inflexible
- c) Extensible**
- d) Perfectly flexible and extensible

Answer: c

23. It is generally assumed that the cable is _____

- a) Perfectly flexible
- b) Perfectly inflexible
- c) Inextensible**
- d) Perfectly flexible and extensible

Answer: c

24. The shape cables take in resisting loads is called a vermicular curve.

State whether the above statement is true or false.

- a) True
- b) False**

Answer: b

25. Cables supporting roadway of a suspension bridge is considered to carry point load.

State whether the above statement is true or false.

a) True

b) False

Answer: b