

BCET-101

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Odd Semester Examination, 2019-20  
B. Tech: Civil (1<sup>st</sup> Semester)  
Basic Civil Engineering & Mechanics - BCET 101

Time: 3:00 hrs.

M.M: 100

Total no. of printed pages: 3

- Note : (i) Attempt ALL questions.  
(ii) Assume any missing data suitably.

1. Attempt any four of the following

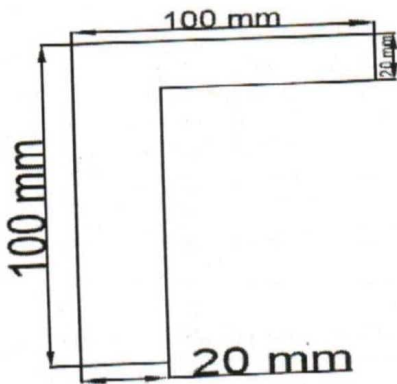
4X5=20

- What is surveying? What are the principles of surveying?
- Define contour? What are characters of contour? Draw contour for i) Hill ii) Valley.
- Explain the different type of cements. Write any two tests for cement?
- What is EDM? And how horizontal measurement is taken.
- Write short note on :
  - GPS
  - Remote sensing and its application.
- Define workability and suitable test to measure workability?

2. Attempt any four of the following

4X5=20

- Write the short note on elements of building construction:
  - Foundations
  - Walls
  - Doors
  - Roofs and windows.
- Define moment of inertia. What is parallel axis theorem and perpendicular axis theorem?
- Explain the defects of timber?
- Explain the quality classification of bricks?
- Find the centroid of the given figure:

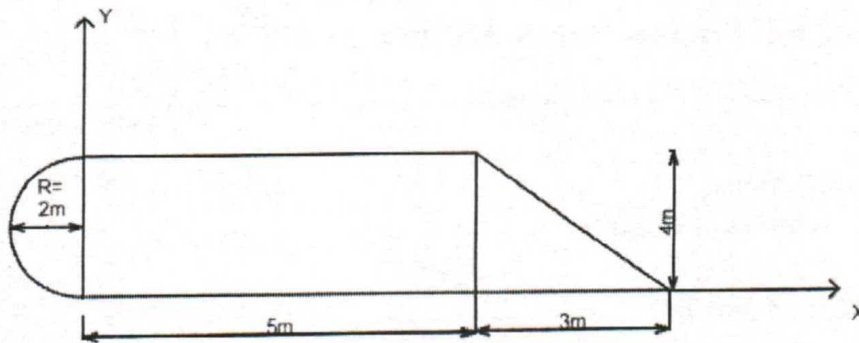


- Write the different constituents in cement?

3. Attempt any two of the following

2x10=20

- a) A wooden block of weight 50 N rests on a horizontal plane. Determine the force required to just a) pull it and b) push it . Take coefficient of friction =0.4 between the two surfaces?  
b) Find the centroid of the given figure:

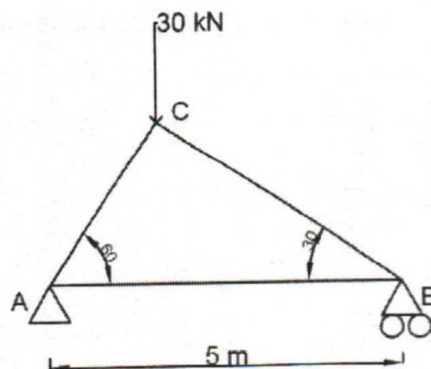


- c) Define the following instruments :  
i) Theodolite  
ii) Plane table survey  
iii) Traversing  
iv) Total station  
v) Compass surveying.

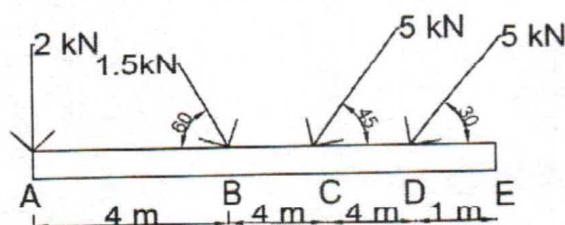
4. Attempt any two of the following

2X10=20

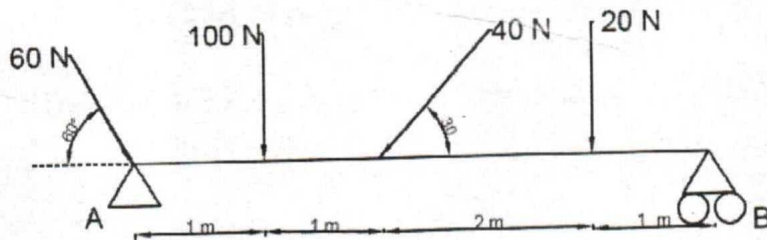
- a) Find the member on forces AC, BC and AB by method of section:



- b) A horizontal beam AE of length 13m is acted upon by a set of forces as shown in Fig. Find the magnitude, direction and position of the resultant.



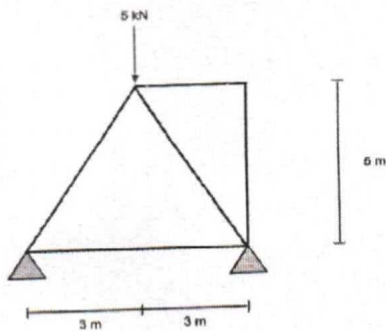
- c) Determine the reaction at A and B for beam loaded as shown in figure.



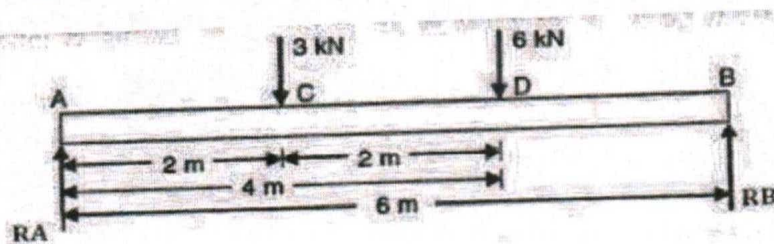
5. Attempt any two of the following.

2X10=20

- a) Find the forces in each member of truss shown in figure.



- b) Find the reaction forces and draw shear force and bending moment diagram of the simply supported beam AB as shown in figure.



- c) Briefly discuss the important laboratory tests on brick and explain any two defects in the brick.

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