

**BE-204 (GS)**  
**B.E. I & II Semester Examination, June 2020**  
**Grading System (GS)**  
**Basic Civil Engineering and Engineering Mechanics**  
**Time : Three Hours**

**Maximum Marks : 70**

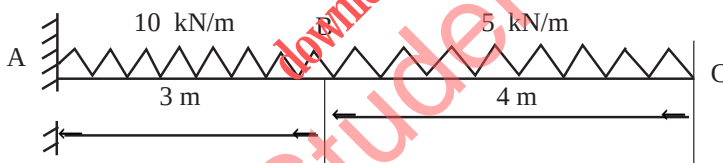
- Note:** i) Attempt any five questions.  
 ii) All questions carry equal marks.

1. What are various properties of Cement? Explain in with salient points.

OR

Define :

- i) Plastering and Pointing
  - ii) Elements of building Construction.
2. a) State and prove Lami's theorem?  
 b) State and prove Varignon's theorem?
3. Draw SFD and BMD for a simply supported beam of span 6m, subjected to a UDL of 5kN/m over its entire length.
4. List out various instruments used in surveying.
5. Find out the mass moment of inertia of a right circular cone of base radius R and mass M about the axis of the cone.
6. Draw Shear force and bending moment diagram for a cantilever beam loaded as shown in figure 1.0 below.



OR

Enumerate the expression for a moment of Inertia of Triangular lamina about its base.

7. Define coplanar and concurrent forces. Also define free body diagram.

OR

The following readings were taken by a 4m staff:

0.875, 1.225, 1.285, 1.425, 1.165, 0.785, 0.925, 1.225, 2.825, 0.895, 1.255, 1.685 and 0.915

The instrument was shifted after 5<sup>th</sup> and 9<sup>th</sup> reading. Enter the data in level book and calculate R.L. of all the points if first reading was taken on B.M. 100.00 apply check.

8. Write short notes on the following:(Any two)

- |                           |                      |
|---------------------------|----------------------|
| a) Raft or mat foundation | b) Marble flooring   |
| c) Purpose of dams        | d) Linoleum flooring |

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