

Total No. of Question : [4]

Registration No. :

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Programme Name : F.Y.B.Tech
Regular F.Y.B.Tech. Sem. II ESE (2022 - 23) July 2023
II SEMESTER (2022 BATCH)
221FYL104-Elements of Civil Engineering and Mechanics

Duration :

Marks : 50

Instructions :

(Q1) All Questions are compulsory

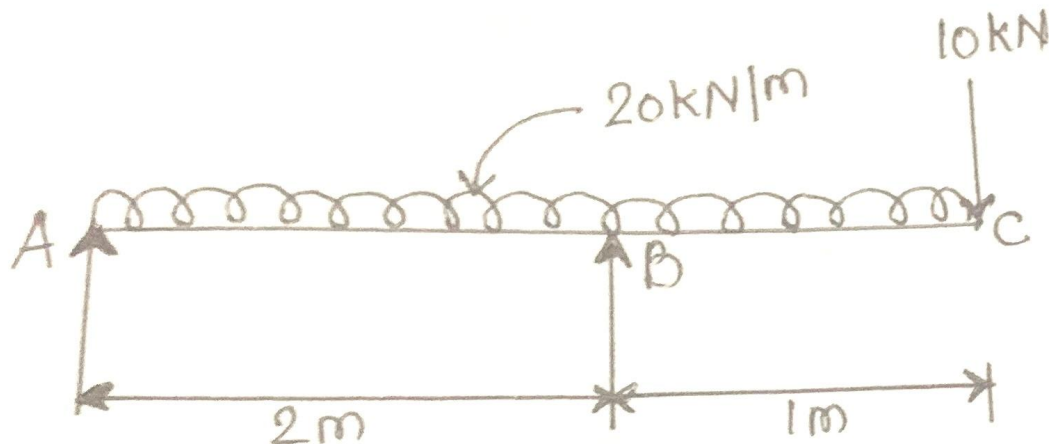
[20.0]

- (a) Enlist and discuss the scope of various sub-branches of civil engineering [6.0]
- (b) Define surveying. On which objects, purposes and principles survey work can be done. [7.0]
- (c) Explain importance of cement as a building material. State types of cement with their properties and use. [7.0]

(Q2) All Questions are compulsory

[10.0]

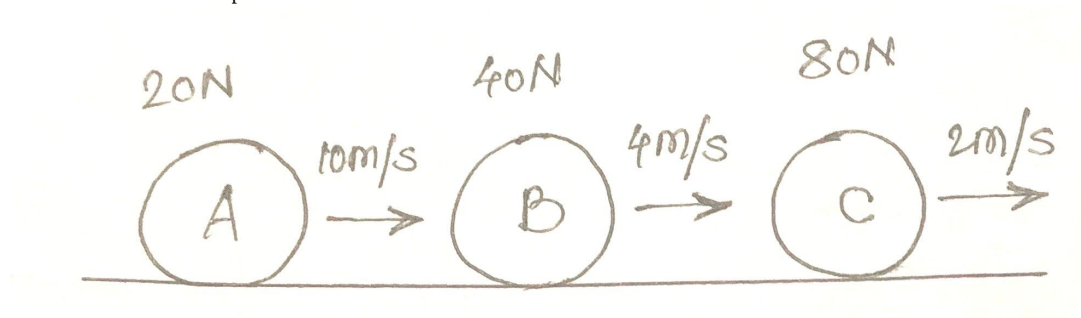
- (a) State and explain the term free body diagram. [4.0]
- (b) A simply supported beam ABC of span 2m and an overhang of 1m is loaded as shown in fig. Find the reaction at A and B. [6.0]



(Q3) All Questions are compulsory

[10.0]

- (a) State Law of Conservation of momentum [3.0]
- (b) Three balls A, B and C of weight 20 N, 40 N and 80 N are moving in the same direction with velocities 10 m/s, 4 m/s and 2 m/s respectively. If the ball A strikes with the ball B which in turns strikes with the ball C. If the coefficient of restitution is 0.8. Find Velocities of balls after impact. [7.0]



(Q4) Attempt any two out of three questions

[10.0]

- (a) State and prove Parallel axis Theorem [5.0]

(b) Explain the terms: Centroid and Centre of Gravity

[5.0]

(c) Locate the Centroid for the given shape with respect to X and Y axis.

[5.0]

