



RollNo.....

Department of Food Technology
School of Interdisciplinary Sciences and Technology
Jamia Hamdard, New Delhi-110062
II Semester Examination, September 2023
Basic Engineering Mechanics- Paper Code- BFTC-204

2023
2nd Sem.
B.Tech.

Time allotted: 3Hrs.

Max Marks: 60

Note: Write to the point. Before answering make sure you have mentioned the Question No.

Section-A(12Marks,AttemptAll)

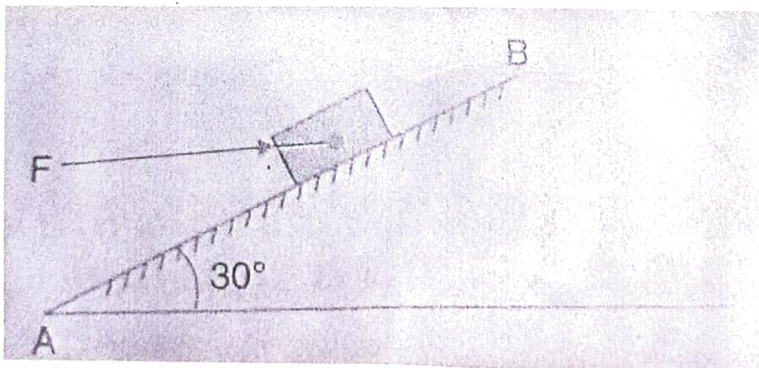
- | | | |
|--|-----|-----|
| Q1. Write down the unit of acceleration and momentum | CO1 | (2) |
| Q2. Define continuum. | CO1 | (2) |
| Q3. What is law of transmissibility. | CO1 | (2) |
| Q4. Define angle of friction. | CO1 | (2) |
| Q5. What do you mean by velocity ratio? | CO1 | (2) |
| Q6. What is stress? | CO1 | (2) |

Section-B(Attemptany3)(6MarksEach)

- | | | |
|---|-----|-----|
| Q7. What is angle of repose. Derive expression for the same? | CO2 | (6) |
| Q8. What do you understand by lifting machine? Write down about the ideal machine, ideal effort and ideal load | CO2 | (6) |
| Q9. What is Hooke's law? Derive the expression for the change of length? | CO2 | (6) |
| Q10. In a lifting machine, an effort of 500 N is to be moved by a distance of 20 m to raise a load of 10000 N by a distance of 0.8 m. Calculate the velocity ratio, mechanical advantage and efficiency of machine? | CO2 | (6) |

Section C(Attemptany3)(10MarksEach)

- | | | |
|---|-----|------|
| Q11. Determine the horizontal force F to be applied to the block weighing 1500 N to hold it in position on a smooth inclined plane AB which makes an angle of 30 degrees with the horizontal. | CO3 | (10) |
|---|-----|------|



Q12. What is the law of machine? Draw the graph of variation mechanical advantage with respect to load.

CO3 (10)

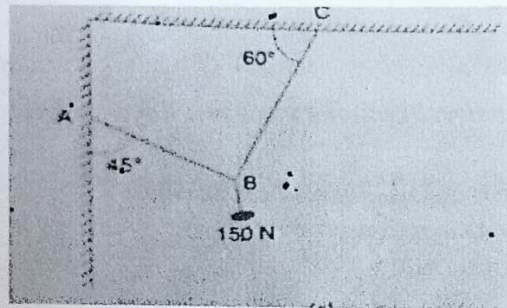
Q13. Write short notes on the following

CO3 (10)

- a. Law of parallelogram
- b. Types of forces

Q14. Find the forces developed in wires, supporting on electric fixtures as shown in figure

CO3 (10)



X