S.B. Roll No..

APPLIED MECHANICS
3rd Exam/Civil/Mech./Auto/0093/Jan'2022
(FOR 2018 BATCH ONWARDS)

Duration: 1.15Hrs.   **M.Marks:25**

SECTION-A

Q1. Attempt any three questions.   **3x5=15**
   i. Differentiate between Mass and weight
   ii. Explain Scalar quantities and Vector quantities.
   iii. Explain the Principal of Transmissibility of Forces.
   iv. Explain the Lami's Theorem.
   v. Explain the type of loading acting over a beam.
   vi. Differentiate between Static Friction and Dynamic Friction.
   vii. Explain the Law of the Machine.

SECTION-B

Q2. Attempt any one question.   **1x10=10**
   a. A particle is acted upon by the following forces:- i) 20 N inclined 30° to North of East, ii) 25 N towards North, iii) 30 N towards North-West , iv) 36 N inclined at 60° South of West. Find the magnitude and direction of resultant force.
   b. With the machine for which velocity ratio is 25, effort of 200N and 300N are required to raise loads of 3000 N and 5000 N respectively. Determine i) Law of machine, ii) Probable effort to raise a load of 4000N, iii) Mechanical Advantage, iv) Efficiency and v) Effort lost in Friction.
   c. Explain the force system.
   d. Explain the methods of reducing Friction