7/1/23

Theory Questions - (tentative) [All for 5 M]

1) classification of Force System & explain it with examples. [5 M]

ans. (write description & draw diagrams)

2) Define resultant

3) Diffrentiate b/w moment & couple.

4) State & explain Varignon's Theorem

5) Describe steps to find resultant of concurrent/ force system using method of resolution. ↓ space forces / parallel / genera

6) Explain free body diagram with examples (procedure)

7) Explain types of supports with neat sketches. (in 2-3 sentences) (write min. 5)

8) State & explain Lami's theorem.

9) Explain types of loads with neat sketches.

10) Explain types of beams with neat sketches.

11) Procedure to locate centroid of composite area.

12) ——— " ——— " ——— wires.

13) State laws of friction.

14) Define angle of friction & angle of repose.

15) Define limiting frictional force.

16) Explain cone of friction.

17) Define: rectilinear motion
curvilinear "
relative "

18) Draw neat sketches for a-t, v-t & x-t curve for:
① uniform velocity
② " acceleration (No projectile motion, constant acceleration)
③ variable "

19) State & explain general plane motion (ICR).

20) State & explain D'Alembert's Principle.

21) State & explain work-energy principle.

22) Explain conservative & non-conservative forces. (with eqs)

23) State principal of conservation of energy.
(No frictional force)

24) Define & classify impact.

★25) Classification of impact based on co-efficient of restitution.

Numericals:

chap 1.1 - Numericals - resultant

1.2 - " "

2.1 - variable acceleration - numericall
motion curves
curvilinear motion
relative " - numericals

2.2 - ICR

3 - centroid: wires, lamines, solids

4 - sphere/cylinder
beam numericals ~~&~~ (fbd - 3-4 M)

~~&~~ - ladder friction
wedge " -[10 M]

5 - NSL
work-energy
impulse momentum