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Roll No. .....

2nd Year / Advance Diploma in Tool and Die Making

Subject : Applied Mechanics and Strength of Materials

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The polar moment of inertia of a circular section is about.

a) X-X axis b) Y-Y axis

c) Z-Z axis d) Neutral axis

Q.2 The stress at which extension of a material take place more quickly as compared to increase in load is called

a) No elastic zone b) Plastic point

c) Yield point d) Breaking point

Q.3 Strain energy is equal to work done on it.

a) To deform it b) To resist elongation

c) to resist shortening d) All of them

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 A cantilever beam is carries a UDL of 2kn/m over whole length 2m and a point load of 3 KN at free end draw its SFD and BMD.

Q.24 Derive the Lami's theorem when all the forces apply on the same plane.

Q.25 Define strain energy, derive the strain energy equation when we apply the suddenly load.

Q.4 The strength of a beam depends upon.

a) Its section modulus

b) Permissible bending stress.

c) A & B

d) None of them

Q.5 The rate of change of bending moment is equal to.

a) Shear Force b) Slope

c) Deflection d) None of them

Q.6 The Spring used in mechanical toys is

a) Leaf spring b) Spiral spring

c) Helical spring d) All of them

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define beam.

Q.8 What is factor of safety.

Q.9 Define noncurrent force.

Q.10 What is angle of friction.

Q.11 Name any two types of end support.

Q.12 Define stiffness of spring.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Define leaf spring, also calculate its when the load apply on it.

Q.14 What is beam how you classify the beam.

Q.15 What is moment explain its laws.

Q.16 Explain limiting friction, angle of repose and coefficient of friction.

Q.17 Derive the theorem of perpendicular axis.

Q.18 What is coplanar concurrent forces also explain system of force.

Q.19 Explain paralleogram law of force.

Q.20 What is lami's theorem give three condition of it.

Q.21 Explain the types of strains with diagramme.

Q.22 What is moment of inertia also explain the second moment of inertia.