Q.30 What is shear force and bending moment diagram?

Q.31 Define : a) Modulus of rigidity
b) Modulus of elasticity
c) Bulk modulus
D) Write S.I. Unit of bulk modulus

Q.32 Define concentrated load, distributed load and uniformly varying load.

Q.33 State Theorem of Perpendicular Axis with diagram.

Q.34 Define moment of force. Write S.I. Unit. What are different types of Moments?

Q.35 Define couple, moment of couple, effect of couple and arm of Couple.

SECTION-D

Note : Long Answer type question. Attempt any two questions. (2x10=20)

Q.36 What are the assumptions made in Theory of Simple Bending?

Q.37 Where does the centre of gravity of the follwoing bodies lie:-
Sphere, Hemisphere, right circular cone, right circular cylinder.

Q.38 Draw the S.F.D. and B.M.D. Of a cantilever beam carrying a point load at free end.

b)

Roll No.....

4th Sem, Branch : Architectural Assistantship
Subject : Structural Mechanics

Time : 3 Hrs. **M.M. : 100**

SECTION-A

Note : Multiple choice questions. All questions are compulsory. (10x1=10)

Q.1 The ability of a material to deform without breaking is called_____.
a) Elasticity b) Plasticity
c) Creep d) None of these

Q.2 A material which can be drawn into wires without rupture is called_____.
a) Ductile material b) Brittle material
c) Malleable material d) All of the above

Q.3 The deformation per unit length is called_____.
a) Strain b) Stress
c) Elasticity d) None of the above

Q.4 Brittleness is opposite to _____.
a) Toughness b) Plasticity
c) Malleability d) None of the above

Q.5 The bending moment at the fixed end of a cantilever beam is _____.
a) Maximum b) Minimum
c) Wl/2 d) Wl

Q.6 The unit of moment of inertia_____.

a) m b) m^2
C) m^3 d) m^4

Q.7 Bending stressed are due to_____.
a) Shear forces b) Bending Moment
c) Thrust d) None of the these

Q.8 Neutral Axis of a beam is the axis_____.
a) Zero stress b) Of maximum stress
c) Negative stress d) Of positive stress

Q.9 Hooke's law holds good upto_____.
a) Elastic limit
b) Plastic limit
c) Limit of proportionality
d) None of these

Q.10 At the point of contraflexure_____.
a) B.M. is minimum
b) B.M. is maximum
c) B.M. is either zero or changes sign
d) None of these

SECTION-B

Note : Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Unit of force in SI unit is _____.
Q.12 Force is a _____ quantity.
Q.13 Bending stresses are also known as _____.
Q.14 Centroid is term used for bodies having _____ only.
Q.15 Unit of moment of inertia is _____.
Q.16 The positive bending moment is called _____ moment.

Q.17 The polar moment of inertia of a circular section is about_____.
Q.18 Bending stresses are also known as _____.
Q.19 Radius of gyration, k = _____.
Q.20 Bending stresses are also known as _____.

SECTION-C

Note : Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Define Force. Write characteristics of a force. What are effects of force?
Q.22 State Parallelogram Law of forces with proper diagram.
Q.23 Define.
a) Centroid b) Center of gravity
d) Moment of inertia
Q.24 Define stress. Write it's SI unit. Name different types of stresses.
Q.25 differentiate between simply supported beam and cantilever beam with the help of sketch.
Q.26 Define with example
a) Elastic material b) Plastic material
c) ductile material d) Brittle material
Q.27 Define load. Write the S.I. Unit of load. What are the different types of loads?
Q.28 Define Strain? What is the unit of strain? What are the different types of strains? Define them.
Q.29 Define beam. Write different types of beams with sketches.