

## SECTION-D

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

- Q.23 Explain stress-strain curve for the ductile material.
- Q.24 Derive the torsion equation for the solid shaft.
- Q.25 Define strain energy, derive the strain energy equation when we apply the gradually load.

No. of Printed Pages : 4  
Roll No. ....

222021

**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 At the point of contra flexure.
- a) B.M. is minimum
  - b) B.M. is maximum
  - c) B.M. is either zero or changes sign.
  - d) None of the above
- Q.2 The shafts are generally made of.
- a) Mild steel
  - b) Alloy steel
  - c) Copper Alloy
  - d) All of above
- Q.3 The section modulus  $Z$  is given by
- a)  $I*y/2$
  - b)  $I/y$
  - c)  $y/I$
  - d)  $2I/y$

(60)

(4)

222021

(1)

222021

- Q.4 In a watch the spring is used to store energy. The energy released
- a) To stop the watch    b) To run the watch  
c) To change the time    d) All of the above
- Q.5 Modulus of resilience is equal to
- a) Resilience/volume  
b) Proof resilience/ area  
c) Resilience / area  
d) Proof resilience/ volume
- Q.6 Brittleness is opposite to
- a) Toughness                      b) Plasticity  
c) Malleability                      d) None of them

### SECTION-B

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

- Q.7 What is unlike force.
- Q.8 Define Hooke's law.
- Q.9 Give two example of vector quantity.
- Q.10 Define centroid.

- Q.11 Define deflection of spring.
- Q.12 What is angle of repose.

### SECTION-C

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

- Q.13 Define helical spring, also explain its types.
- Q.14 Write the difference between Torque and Torsion.
- Q.15 Write the assumption in the theory of simple bending.
- Q.16 Explain relationship between modulus of elasticity and modulus of rigidity.
- Q.17 Derive the theorem of parallel axis.
- Q.18 Define Newton 3rd law of motion.
- Q.19 Explain triangle law of force.
- Q.20 What is force also explain resultant of force.
- Q.21 Explain the types of stresses with diagramme.
- Q.22 Define friction with its types.