

S.B. Roll No.....

**MACHINE DESIGN AND DRAWING**  
**6<sup>th</sup> Exam/Prod/5523/Nov'18**

**Duration: 3Hrs.**

**M.Marks:75**

**SECTION-A**

**Q1. Fill in the blanks.**

**10x1.5=15**

- a. \_\_\_\_\_ is the property of a material which enable it to absorb energy without fracture.
- b. Factor of safety = \_\_\_\_\_
- c. The property of a material to be drawn into wires is called \_\_\_\_\_.
- d. Sleeve coupling is not a flexible coupling. (T/F)
- e. The best method for making threads on bolt is \_\_\_\_\_.
- f. A \_\_\_\_\_ shaft is used in workshop and factories.
- g. A rivet is identified by\_\_\_\_\_.
- h. Knuckle joint is a permanent fastening. (T/F)
- i. Eye bolt is used for locking device. (T/F)
- j. If S is size of weld then thickness of throat is \_\_\_\_\_

**SECTION-B**

**Q2. Attempt any five questions.**

**5x6=30**

- i. Differentiate between caulking and fullering.
- ii. What are the characteristics of a good design? Discuss.
- iii. Write the comparison between knuckle and cotter joint.
- iv. Sketch any four different types of rivet heads.
- v. Write a short note on Faliure of keys by crushing.
- vi. Discuss design procedure for a machine component.
- vii. What do you mean by shaft? Describe briefly the effect of keyway in shaft.
- viii. What is universal coupling? Where it is used?

**SECTION-C**

**Q3. Attempt any two questions. Assume any missing dimensions.**

**2x15=30**

- a. Design and draw a rectangular key for a shaft of 50 mm diameter having width 16 mm and thickness 10mm. The shearing and crushing stresses for the key material are 42 MPa and 70 MPa.
- b. Design and draw a screw clamp.
- c. Design a cotter joint to connect two mild steel rods for a pull of 100 KN. The maximum permissible stresses in tension, shear and crushing are 80MPa, 65 MPa and 161 MPa respectively.
- d. i) Give the comparison of designed and undersigned work.      ii) Sketch any five types of rivet heads and name them.