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Total No. of Pages : 04

Total No. of Questions : 09

B.Tech.(AE) (2011 Onwards) (Sem.-3)

**MACHINE DRAWING**

Subject Code : BTAE-306

M.Code : 54114

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.

**SECTION-A****1. Write briefly :**

- a) Sketch the conventional representation of :
  - (i) Wood
  - (ii) Concrete
  - (iii) Brass
- b) Define the terms: Diagonal Pitch and margins in case of rivets
- c) Sketch the conventional representation of
  - (i) Internal threads
  - (ii) Bearing
  - (iii) Tension spring
  - (iv) Helical gear.
- d) How are (i) Screw threads and (ii) Tapered features, dimensioned?
- e) State the difference between pitch and lead of a double start thread.

- f) Draw a free hand sketch of hexagonal threaded bolt.
- g) Enlist the practical applications of pin type flexible coupling.
- h) What is a half section?
- i) What is the function of piston in an IC engine?
- j) What is a cotter and when is it used? What is the purpose of using a gib along with a cotter in a cotter joint?

### SECTION-B

- 2. Explain blow off cock with the help of a diagram.
- 3. Discuss the following commands of AutoCAD :
  - a) Array
  - b) Offset
  - c) Extrude
  - d) Trim
  - e) Mirror
- 4. Differentiate between machine drawing and production drawing.
- 5. Draw profile of Knuckle threads by taking pitch of 20 mm. Clearly show the calculations and show dimensions on drawing.
- 6. Draw the sectional front view and top view of a double riveted zig-zag lap joint to join plates of thickness 10 mm.

### SECTION-C

- 7. Sketch a Knuckle joint showing sectional front view and top view for connecting two rods of 40 mm diameter.

8. Fig. 1 shows the two views of a protected type flanged coupling. Draw the following views on full scale :
- Front view lower half in section
  - Side view

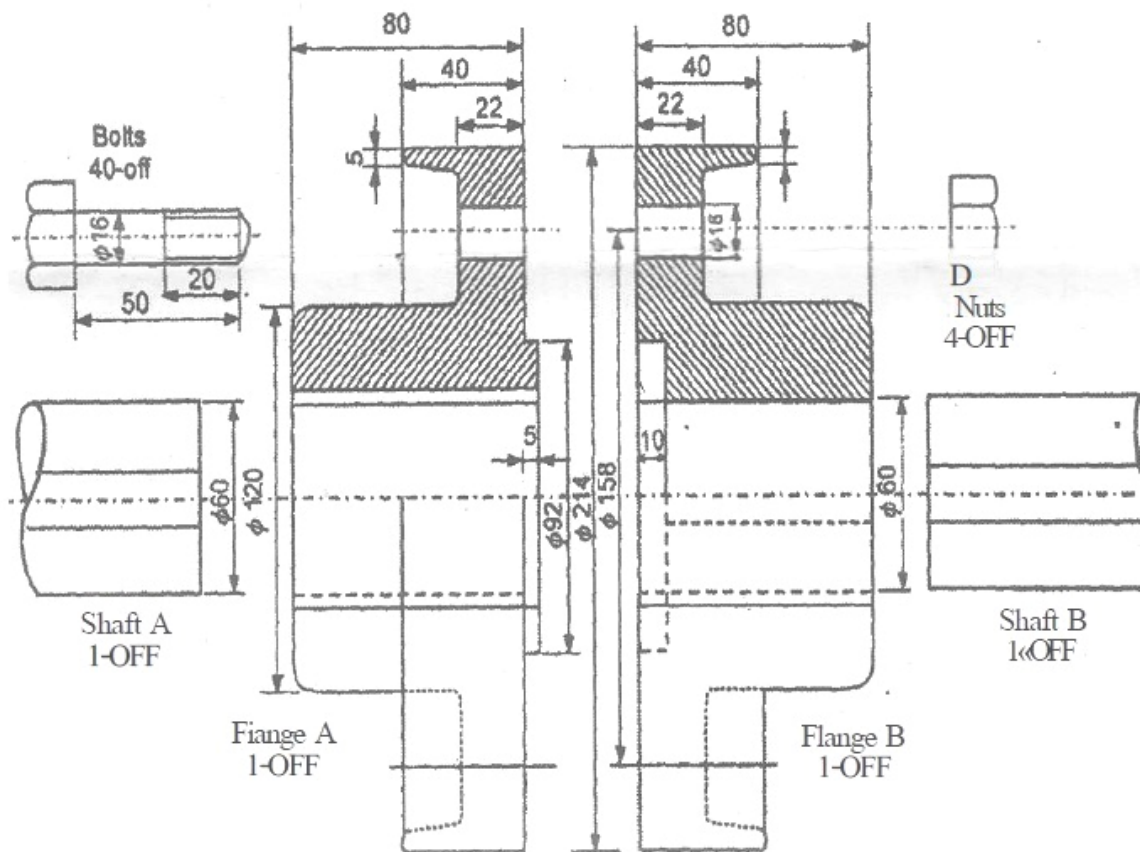


FIG.1

9. Fig. 2 shows the details of a screw-jack. Draw the following views of the assembly to some suitable scale :
- Front view-right half in section, and
  - Top views

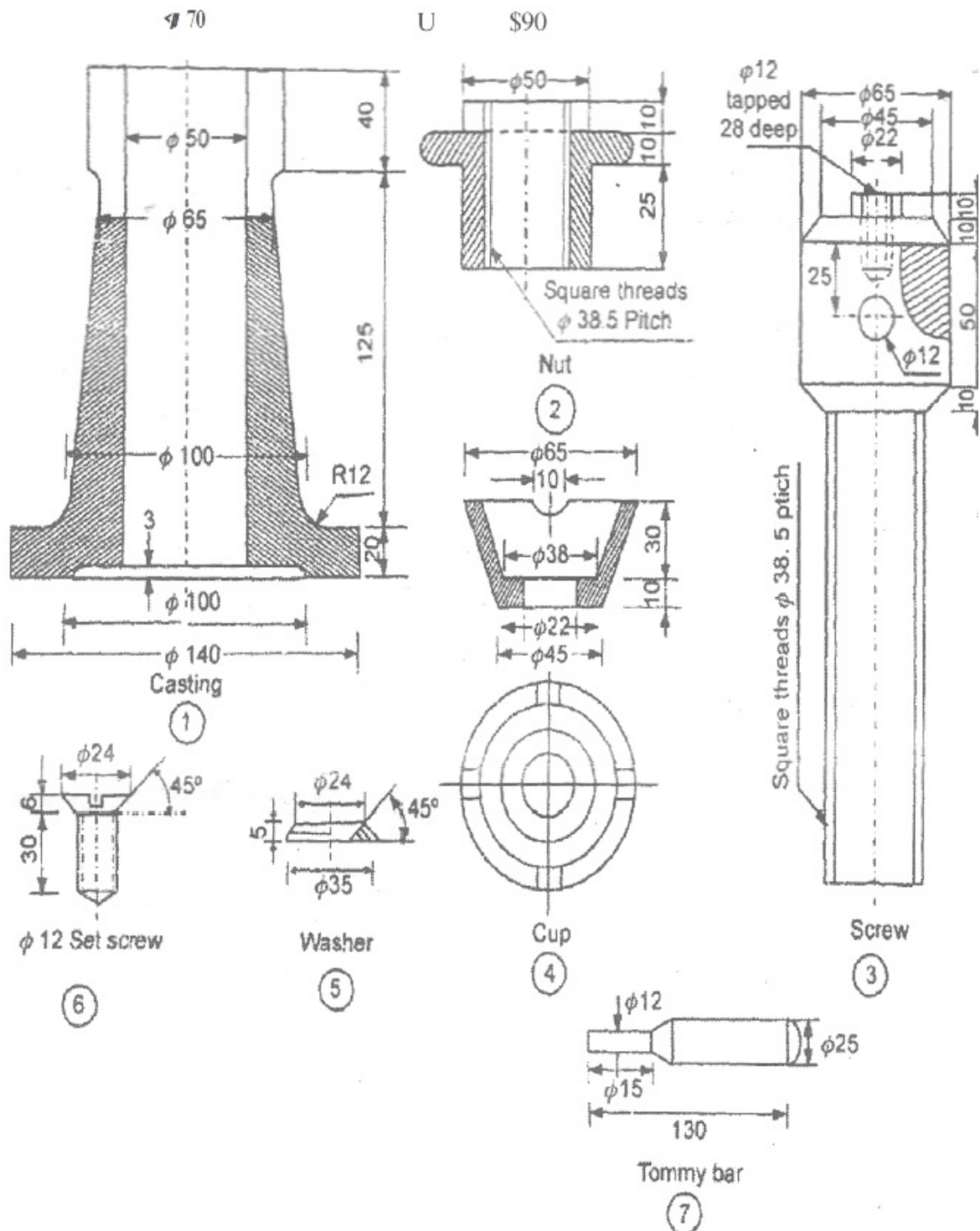


FIG.2

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**