

**B. TECH. VIEP MECHANICAL  
ENGINEERING (BTMEVI)**

**Term-End Examination**

**June, 2019**

**BIME-003 : MACHINE DRAWING**

*Time : 3 Hours*

*Maximum Marks : 70*

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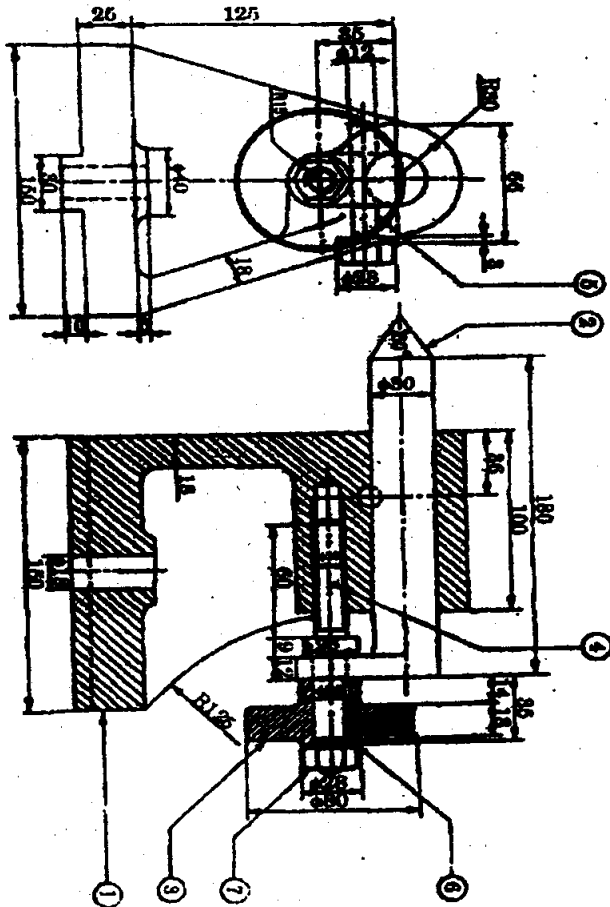
*Note : Question number 7 is compulsory. Attempt any three questions from the remaining. Use of scientific calculator is permitted. Assume missing data suitably.*

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1. (a) Draw : 4
- (i) Conical headed rivet
  - (ii) Countersunk headed rivet
- (b) Draw a double rivetted double strap zig-zag butt joint to join two plates of 10 mm thickness. 10
2. (a) What is meant by Cotter joint ? Where is it used ? With a neat sketch, explain the purpose of using gib along with a cotter in a cotter joint. 7

- (b) Sketch the following thread profiles for a nominal diameter of 25 mm and pitch 3 mm and give their one application : 7
- (i) BSW thread
  - (ii) Buttress thread
3. (a) A pentagon is to be drawn using AutoCAD with one of its side vertical. If the length of the side is 15 mm, write down the commands to complete the task. 7
- (b) Draw the conventional representation of Bevel gear. Write the applications of Bevel gear. 7
4. Sketch the conventional symbols of the following engineering materials : 14
- (a) Steels
  - (b) Lead
  - (c) Glass
  - (d) Wood
  - (e) Marble
  - (f) Concrete
  - (g) Rubber
5. (a) What is the function of a key ? Make a free hand sketch of the following keys. Also write their uses : 7
- (i) Wood-ruff key
  - (ii) Saddle key
  - (iii) Sunk key
- (b) Explain the function of bolt and nut. Draw the freehand sketches of the following : 7
- (i) Eye bolt
  - (ii) Cup head bolt with square neck

6. Draw two views of a PIN-BUSH type flexible coupling with shaft diameter as 50 mm. 14
7. Details of a tail stock are given in the figure below. Draw the front view full in section for the assembly. Prepare material list for parts of the tail stock. 28



**Parts List :**

| <b>Part No.</b> | <b>Name</b> |
|-----------------|-------------|
| 1               | Body        |
| 2               | Centre      |
| 3               | Hand wheel  |
| 4               | Screw       |
| 5               | Screw       |
| 6               | Washer      |
| 7               | Nut         |