

**B.TECH SEM – IV (2007 COURSE) (MECHANICAL ENGG.)  
: WINTER - 2017**

**SUBJECT : COMPUTER AIDED DRAFTING & MACHINE DRAWING**

Day : **Friday**

Date : **24/11/2017**

**W-2017-2429**

Time : **02.30 PM TO 06.30 PM**

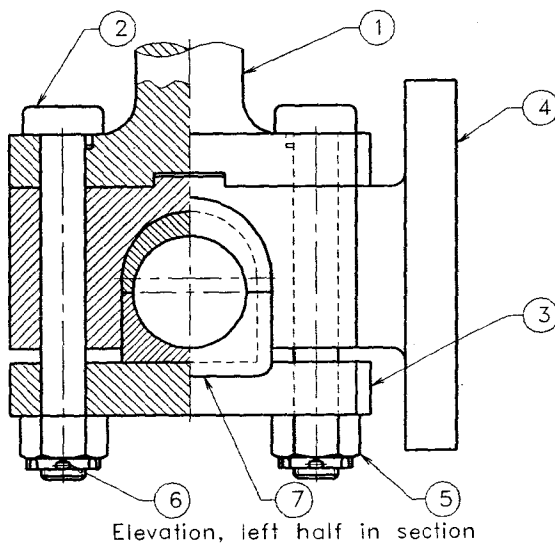
Max. Marks : 80

**N.B.**

- 1) **Q.1** and **Q.5** are **COMPULSORY**. Out of the remaining attempt any **TWO** questions from each Section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.
- 4) Assume suitable data if necessary.

**SECTION – I**

**Q.1** Fig. 1 shows assembly of Cross Head. Draw detail drawing. **(14)**



Item list

Item	Description	Qty.	Material
1	Rod end	1	Steel
2	Bolt	2	Steel
3	End cap	1	C.S.
4	Body	1	C.S.
5	Lock nut	2	M. S.
6	Split pin	2	M.S.
7	Brasses	1set	Brass

**Figure 1** Cross-head (vertical type) assembly.

- Q.2**
- a) Show minimum five symbols used in welding joints. **(05)**
  - b) What is relation between machining cost and tolerance? **(04)**
  - c) What is basic size hole or shaft? How it is calculated? **(04)**

**Q.3** a) On a hole and shaft assembly, the dimensions are as given below: **(06)**

$$\text{Shaft} = \phi 60 - 0.010 - 0.029 \text{ mm}$$

$$\text{Hole} = \phi 60 + 0.035 - 0.005 \text{ mm}$$

Find :

- a) Tolerance of shaft
  - b) Tolerance on hole
  - c) Minimum clearance
  - d) Maximum clearance
  - e) The type of fit obtained.
- b) With suitable neat sketch explain : **(07)**
- i) Straightness
  - ii) Flatness
  - iii) Circularity
  - iv) Cylindricity
  - v) Parallelism
  - vi) Perpendicularity
  - vii) Angularity

P.T.O.

- Q.4** a) What are the surface irregularities commonly seen on a machine components? Explain them with the help of a neat sketch. (06)
- b) Explain different pine joints with neat sketch. (07)

**SECTION – II**

- Q.5** a) Write a program in AutoLisp to draw a plate with central hole when the start point, length, width and hole diameter are given. (10)
- b) Explain with example any three commands in AutoLisp to filter from lists. (06)
- Q.6** a) What are the functions of REVSURF, TABSURF, EDGESURF and RULESURF commands in Auto CAD and also any three advantages of surface modeling? (06)
- b) Make sketches of any five 3D solid modeling primitives name them. (06)
- Q.7** a) Discuss following Auto CAD commands. (06)  
i) Offset ii) Mirror iii) Revolve.
- b) Explain dimension command used in Auto CAD. (06)
- Q.8** a) Explain data types and data conversion. (06)
- b) Differentiate between UCG and WCS. (06)

\* \* \*