[4656] – 16

| Seat | |
|------|--|
| No. | |

F.E. (Semester – I) Examination, 2014 ENGINEERING GRAPHICS–I (Old) (2008 Course)

Time : 4 Hours

Max. Marks: 100

Instructions : 1) Answer one question of each Unit. Answer three questions from Section – I and three questions from Section – II.

- 2) Answer of **two** Sections should be drawn on **two separate** drawing sheets.
- 3) Retain all construction lines.
- 4) Use of log-table, electronic pocket calculator is allowed.
- 5) Figures in the bracket on the right sides indicate full marks.
- 6) **Assume** suitable proportionate dimensions / data, if **necessary**.
- 7) Use only half imperial size drawing papers as answer sheets.

SECTION - I

Unit – I

(Engineering Curves)

- 1. a) Draw a parabola by rectangle method having abscissa of 30 mm and the double ordinate is 70 mm.
 - b) Draw a hypocycloid where the diameters of rolling and directing circles are equal to 40 mm and 160 mm respectively. Draw a normal and a tangent to curve at convenient point.

OR

- 2. a) Draw the Archimedean Spiral of 1½ convolutions with the greatest radius of 120 mm and the smallest radius of 30 mm. Draw the tangent and normal to the curve at a point 75 mm from the pole.
 - b) A point 'P' moves around the cone of 60 mm diameter and 70 mm height. Initially the point 'P' is on the periphery of base of the cone and travels a vertical distance of 45 mm in one revolution around the cone. Draw the path traced by point if its axial movement is uniform with its angular motion.

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Unit – II

(Orthographic Projections)

3. For the object shown in Figure No. 1, draw the following views, using first angle projection method :

| a) Section elevation in the direction of 'X', along $A - A$. | 6 |
|---|---|
| b) Plan | 6 |
| c) End view from Left Hand Side | 6 |
| d) Given all dimensions. | 2 |



OR

4. For the object shown in Figure No. 2, draw the following views, using first angle projection method:

-3-

- a) Section elevation in the direction of 'X' (Section along AA) 6 b) Plan 6 c) End view from Right Hand Side 6 2
- d) Given all dimensions.



Fig. 2

Unit – III (Auxiliary Projections)

- 5. Fig. 3 shows elevation and auxiliary views of a bracket. By using First Angle Method of Projections :
 - a) Redraw the given views b) Add the plan 8

c) Give all dimensions.



Fig. 3

- OR
- 6. Fig. 4 shows partial front view, top view and auxiliary view of an object. By using First Angle Method of Projections :

-4-

- a) Redraw the given views
- b) Complete front view
- c) Give all dimensions.



Fig. 4



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SECTION – II Unit – IV (Isometric)

The Figure 5 shows FV and TV of a machine part. Draw its isometric view by using natural scale and show overall dimensions.
 20



OR

The Figure 6 shows FV and Plan of a machine part. Draw its isometric projections by using isometric scale.
 20



Fig. 6

Unit – V

(Missing Views)

- 9. The Figure 7 shows FV and TV of a machine part. Draw
 - A) Sectional Front View, along Section A A
 - B) Top View
 - C) Right Side View
 - D) Dimensioning.



- 10. The Figure 8 shows FV and TV of a machine part, Draw
 - A) Sectional Front View, along Section A A
 B) Top View
 C) Left Side View
 7

3

7

3

D) Dimensioning.



3

Unit – VI

(Free Hand Sketches)

11. Draw proportionate free hand sketches of any two of the following : Rag Foundation bolt, compression helical spring and wing nut.10

OR

12. Draw proportionate free hand sketches of any two of the following : Lifting eye bolt, square thread, Gib-headed key with assembly.

B/II/14/