

Tuesday, July 1, 2008

**RGPV BE105 Engineering Drawing June 2008 Question Paper**

**BE (First/Second) Semester Exam**

(Common to all Branches)

Time: 3 hrs

Maximum Marks: 100

Minimum Marks: 35

**Note:** (i) Attempt FIVE questions, selecting ONE questions from each unit.

(ii) Suitably assume any missing data.

(iii) Use half imperial size drawing sheet.

(iv) Due credits will be given for neatness, quality of lines and lettering.

**Unit-I**

1. a) A rectangular plot of land measuring 1.28 hectares is represented on a map by a similar rectangle of 8 sq. cm. Calculate R.F. of the scale of the map. Draw a diagonal scale to read 1 m and long enough to measure 600 m. Show a distance of 438 m on it. **8 marks**

Ans: Refer problem 4.19 Page 4.14 of ED - Basant Agrawal, TMH.

1. b) A circle of 40 mm diameter rolls along a line for one revolution clockwise. Draw and name the locus of a point on the circle which is in contact with the line. **8 marks**

Ans: Refer problem 6.1 Page 6.1 of ED - Basant Agrawal, TMH.

OR

2. a) Using the scale of chords, construct angles of 45 degree and 125 degree. **8 marks**

Ans: Refer problem 4.30 Page 4.23 of ED - Basant Agrawal, TMH.

2. a) Construct a parabola with base 60 mm and length of axis 40 mm. Draw a tangent to the curve at a point 20 mm from the base. **8 marks**

Ans: Use tangent method (problem 5.16 of ED - Basant Agrawal, TMH)

or Use rectangle method (problem 5.17 of ED - Basant Agrawal, TMH)

**Unit-II**

3. a) The pictorial view of a block is given in fig. 1. Draw the front view, the side view and the top view looking from the direction A, B and C in first angle projection. **8 marks**

Ans: Refer Chapter 7 Orthographic projections of ED - Basant Agrawal, TMH

3. b) The length of top view of a line parallel to the V.P. and inclined at 45 degree to the H.P. is 50 mm. One end of the line is 12 mm above the H.P. and 25 mm in front of the V.P. Draw the projections of the line and determine its true length. **8 marks**

Ans: Refer problem 9.10 Page 9.11 of ED - Basant Agrawal, TMH.

OR

4. A line AB has its ends A and B 20 mm and 45 mm in front of V.P. respectively. The end projectors of the line are 50 mm apart. The H.T. of the line is 10 mm in front of the V.P. The line is inclined at 35° to H.P. Draw the projections of the line and determine the true length of line and locate its V.T. of the line from H.P. and inclination of the line with V.P. **16 marks**

Ans: Refer problem 9.36 Page 9.37 of ED - Basant Agrawal, TMH:

### Unit-III

5. a) A regular hexagonal lamina of 40 mm sides has a square hole of 25 mm side centrally cut through it. Draw the projections when it is resting on one of its sides on H.P. with its surfaces inclined at  $60^\circ$  to V.P. and its corner nearest to the V.P. is 24 mm from the V.P. **8 marks**

Ans: Refer problem 10.25 Page 10.25 of ED - Basant Agrawal, TMH.

5. b) Draw the projections of a pentagonal prism base 25 mm side and axis 50 mm long, resting on one of its rectangular faces on the H.P. with the axis inclined at  $45^\circ$  to the V.P. **8 marks**

Ans: Refer problem 11.17 Page 11.20 of ED - Basant Agrawal, TMH.

OR

6. a) A thin 30-60 degree set square has its longest edge in the V.P. and inclined at  $30^\circ$  to the H.P. Its surface makes an angle of  $45^\circ$  with the V.P. Draw its projections. **8 marks**

Ans: Refer problem 13 Page 10.26 of ED - Basant Agrawal, TMH:

6. b) A hexagonal pyramid base 25 mm side and axis 55 mm long has one of its slant edges on the ground. A plane containing that edge and the axis is perpendicular to the H.P. and inclined at  $45^\circ$  to the V.P. Draw its projections when the apex is nearer the V.P. than the base. **8 marks**

Ans: Refer problem 11.38 Page 11.40 of ED - Basant Agrawal, TMH.

### Unit-IV

7. a) A pentagonal pyramid side of base 35 mm and axis 60 mm long rests with its base on H.P. such that one of the edges of the base is perpendicular to V.P. A section plane perpendicular to H.P. and parallel to V.P. cuts the pyramid at a distance of 20 mm from the corner of the base nearer to the observer. Draw its top and sectional front view. **8 marks**

Ans: Refer problem 12.20 Page 12.22 of ED - Basant Agrawal, TMH.

7. b) A cone of base 50 mm diameter and 65 mm height rests with its base in H.P. A section plane perpendicular to V.P. and inclined at  $30^\circ$  to H.P. bisects the cone. Draw the development of the lateral surface of the truncated cone. **8 marks**

Ans: Refer problem 13.7 Page 13.7 of ED - Basant Agrawal, TMH.

OR

8. a) A cube of 50 mm side rests with one of its edges on H.P. such that the square faces containing that edge are making equal inclination with H.P. A horizontal section plane cuts the cube at a distance 18 mm below the horizontal edge nearer to the observer. Draw the sectional top view and front view of the cube. **8 marks**

Ans: Refer problem 12.1 Page 12.4 of ED - Basant Agrawal, TMH:

8. b) The front and side views of an I beam are shown in fig. 2. Draw the isometric view of the beam. **8 marks**

Ans: Refer Chapter 15 isometric projections of ED - Basant Agrawal, TMH

### Unit-V

9. a) What is CAD? What are the main benefits of it? **6 marks**

Ans: Refer Page 18.1 of ED - Basant Agrawal, TMH.

9. b) State and explain any five significant EDIT commands used in CAD software. 10 marks

Ans: Refer Page 18.26 of ED - Basant Agrawal, TMH.

OR

10. Fill in the blanks: 16 marks

a) According to AutoCAD, an engineering drawing is considered to be made up of different drawing elements known as *entities*.

b) Graphics can be converted into hard copy with a *Print*.

c) AutoCAD settings are called *default* settings.

d) Size of Electronic Drawing Sheet can be changed to any value by setting *Limits* and *Units*.

e) *Ortho* command allows you to draw lines at right angles only.

f) Grid command is used to display *dotted* lines on the screen at predefined spacing.

g) *Save/Qsave* command saves the work.