

Saturday, September 26, 2009

**RGPV BE105 Engineering Drawing Sep 2009 Question Paper**

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

(Common to all Branches)

Time: 3 hrs

Maximum Marks: 80

Minimum Marks: 28

**Note:**

1. Attempt five questions in all selecting one question from each Unit.
2. Assume suitable missing/misprint data, if any.
3. Due credit will be given for neatness, quality and lettering.

**Unit-I**

1. a) Construct a scale to measure km,  $1/8$  km and  $1/40$  of a km, in which 1 km is represented by 4 cm. Mark on this scale a distance of 2.775 km. **8 marks**

**Ans:** Refer problems on diagonal scale of chapter 4 ED - Basant Agrawal, TMH.

1. b) A circle of 50 mm diameter rolls on the outside of a directing circle of the same diameter without slipping. Draw the curve traced by a point on the rolling circle for one revolution of rolling circle. **8 marks**

**Ans:** Refer problem 6.9 Page 6.9 of ED - Basant Agrawal, TMH.

OR

2. a) A train is running at a speed of 40 km/hr. Construct a plain scale to read upto a km and a minute. The scale should measure upto 50 km. The R.F. of the scale is 1:250000. On the scale show the distance covered by the train in 39 minutes. **8 marks**

**Ans:** Refer problem 4.25 Page 4.19 of ED - Basant Agrawal, TMH.

2. b) Construct an ellipse having major axis 100 mm and minor axis 80 mm. Locate its foci, directrices and find the eccentricity. **8 marks**

**Ans:** Refer problem 5.5 Page 5.8 of ED - Basant Agrawal, TMH.

**Unit-II**

3. Attempt any two parts of the following:

(a) Find the distance between the two points P and Q when point P is 35 mm above the HP and 50 mm behind the VP. The point Q is 40 mm above the HP and 25 mm in front of the VP. The distance between the projectors being 50 mm. **8 marks**

**Ans:** Refer problem 9.16 Page 9.18 of ED - Basant Agrawal, TMH.

(b) Determine the true shape of figures, the top view of which is a regular pentagon of 35 mm side, having one side inclined at  $30^\circ$  to the VP and whose front view is a straight line making an angle of  $45^\circ$  to the HP. **8 marks**

**Ans:** Refer problem 10.11 Page 10.11 of ED - Basant Agrawal, TMH.

(c) The pictorial view of a block is shown in fig. 1. Draw the front view and top view in first angle method of projection. Use the direction X for front view. **8 marks**

**Ans:** Refer problem 7.2-7.10 Page 7.10 of ED - Basant Agrawal, TMH.

OR

4. A straight line AB, equally inclined to HP and VP has its end A in the front of VP and 20 mm above the HP. End B is behind the VP and 40 mm below HP. A point on this line is in VP and 10 mm below HP. draw the projections and find true length and inclination of the line with HP, if distance between projectors of the ends is 60 mm. **16 marks**

Ans: Refer problem 11 Page 9.58 of ED - Basant Agrawal, TMH.

### Unit-III

5. A hexagonal plane figure of 30 mm side is resting on corner in the VP with its surface making an angle of  $30^\circ$  with the VP. The view from the front of the diagonal passing through that corner is inclined at  $35^\circ$  to the HP. Draw the three principle views. **16 marks**

Ans: Refer problem 15 Page 10.27 of ED - Basant Agrawal, TMH.

OR

6. A hexagonal pyramid of base side 30 mm and axis length 60 mm is kept with a side of base parallel to the VP and the triangular face containing that side being vertical. Draw the projections of the solid. **16 marks**

Ans: Refer problem 11.41 Page 11.42 of ED - Basant Agrawal, TMH.

### Unit-IV

7. A cylinder resting on its base on the ground is cut by a section plane to give the true shape of the section as an ellipse of minor axis 50 mm and major axis 80 mm. If this is the maximum possible length of the major axis, find the diameter of the cylinder, the height of the cylinder, inclination of the section plane. Draw the three principle views of the object with the section, if any. **16 marks**

Ans: Refer problem 12.48 Page 12.41 of ED - Basant Agrawal, TMH.

OR

8. A semicircle of 100 mm diameter represents the development of lateral surface of a right circular cone. Inscribe the largest possible circle in the development and draw the projections of the cone resting on its base in HP and showing the projection of the circle in them. **16 marks**

Ans: Refer problem 12.31b Page 12.31 of ED - Basant Agrawal, TMH.

8. b) Draw the development of the lateral surface of the truncated cone shown in fig. 2. **8 marks**

Ans: Refer problem 13.49 Page 13.43 of ED - Basant Agrawal, TMH.

### Unit-V

9. The front and top view are shown in fig. 2. Draw the isometric view of the objet. **16 marks**

Ans: Refer problem 15.27-15.40 Page 15.18 of ED - Basant Agrawal, TMH.

OR

10. Attempt any three parts of the following: **16 marks**

(a) Define the 'operating system of computer' and state any two functions of it.

It is the most important program that runs on a computer. Every general-purpose computer must have an operating system to run other programs. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and

directories on the disk, and controlling peripheral devices such as disk drives and printers.

(b) What do you mean by Drawing Entity?

Ans: Drawing entities are the set of commands such as Points, line, ellipse, polygon, arc, etc. used to draw drawing. The complex entities available in Autocad are : Blocks, Attributes, Dimensions and Viewports. All the above entities can be used just by typing in the names at the prompt, or by selecting them from the graphics window menu.

Ans: Detail on Page 18.13-18.26 article 18.15 of ED - Basant Agrawal, TMH.

(c) Explain the various commands used for transformation of an object.

Ans: Commands used for transformation of an object includes mirror, rotate, etc.

Refer Page 18.26 article 18.16 of ED - Basant Agrawal, TMH.

(d) Mention a few utility commands and state their respective basic functions.

Ans: dwgprops- Drawing properties, cal- calculator, rename: managing named objects, purge: deleting unused named object, draworder: changing the display order of object, color: managing colour of entity, linetype- managing type of line for entity, mvsetup- setting up a drawing, option- customise setting, etc. Refer AutoCAD book for details.

(e) Mention any two methods by which a circle can be drawn using AutoCAD.

Ans: Refer Page 18.18 article 18.15.5 of ED - Basant Agrawal, TMH.

Labels: 2009, BE105, Engineering Drawing, Question Paper, RGPV