

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER- 1st / 2nd • EXAMINATION – SUMMER • 2014

Subject Code: 110013

Date: 17-06-2014

Subject Name: Engineering Graphics

Time: 02:30 pm - 05:30 pm

Total Marks: 70

Instructions:

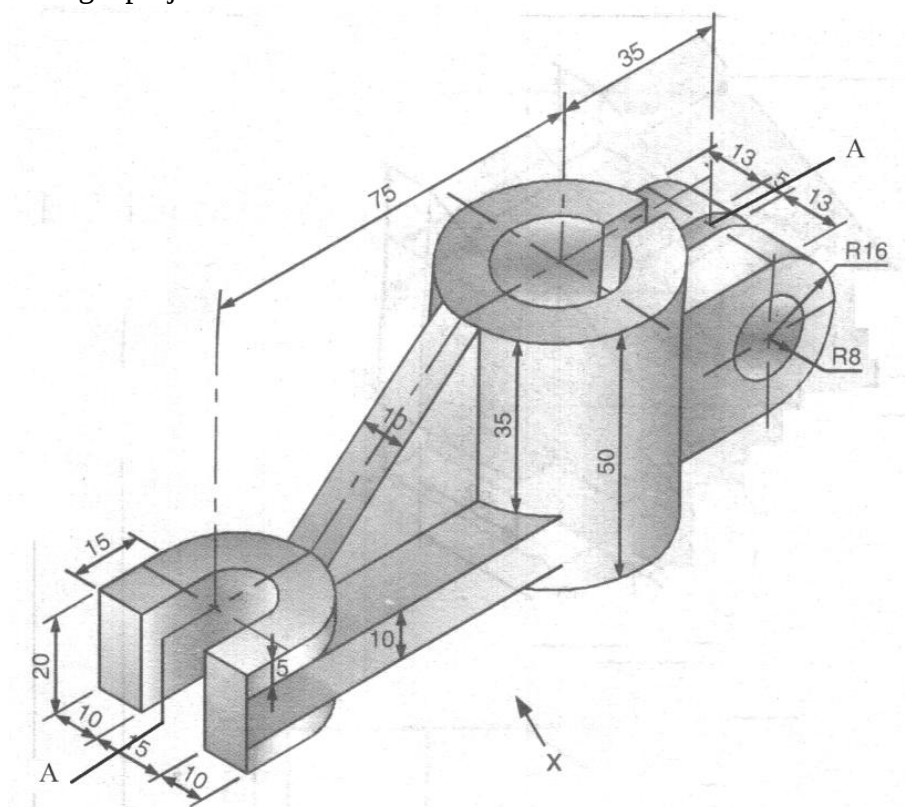
1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Retain all construction lines.
5. Lines, Dimensions etc should be as per BIS-SP-46.

Q.1 (a) Fig.1 Shows the pictorial view of an object. Draw the following views

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- i. Sectional front view.
- ii. Right hand side view
- iii. Top view

Use first angle projection method.



Que.1, Fig.1

- (b)** Draw the symbols for first angle and third angle projection method **02**
- Q.2 (a)** The circular disc of dia. AB=80mm rotates about its centre O for one revolution the point P which is initially at A moves to the center, when the disc completes half revolution and then comes back to A in the remaining half revolution. Trace the locus of the point P, assuming the rotation of the disc and movement of the point P to be uniform. **07**
- (b)** Construct an ellipse in a parallelogram 125mm x 90mm sides. Take included angles of parallelogram as 120° and 60°. Determine its major and minor axis. **07**
- Q.3 (a)** The projectors of the ends of a line AB are 50mm apart. The end A is 20mm above the H.P. and 30mm in front of the V.P. The end B is 10mm below the H.P. **07**

- and 40mm behind the V.P. Determine the true length of line AB, its inclinations with H.P. and V.P. and apparent angles also.
- (b) The regular pentagonal plane having the side 30mm is resting on H.P. on one of its corners. The surface of the plane is inclined to the H.P. at 45° . Draw the projections of the plane when the side opposite to the corner on which it rests on H.P. is inclined at 30° to V.P. 07
- Q.4** (a) A pentagonal prism rests on one of its edges of the base on H.P. with its axis inclined at 45° to the H.P. The top view of the axis is inclined at 30° to the V.P. Draw the projections of the prism, assuming the edges of the base to be 30mm and the axis 70mm long. 07
- (b) A cone diameter of base is 50mm and height 80mm is resting on the H.P. on one of its generators with axis parallel to the V.P. It is cut by horizontal section plane passing through a point on the axis 55mm away from the apex. Draw the elevation and sectional plan of the cone. 07
- Q.5** (a) The length of the Khandala tunnel on the Mumbai Pune express way is 330 meter on the road map. It is shown by 16.5 cm long line. Construct a plain scale to show meters and to measure up to 400 meter. Show the length of 290 meter long on the express way. 07
- (b) Draw the involute to a regular pentagonal plate of 25mm size. 07
- Q.6** (a) The right circular cone diameter of base 50mm and axis 60mm long resting on its base on H.P. A semi circular hole of radius 15mm is cut through the cone such that the axis of the hole is perpendicular to V.P. and intersecting the axis of the cone at 20mm above the base. The flat surface of the hole is parallel to H.P. Draw the development of lateral surface of the cone. 07
- (b) A line PQ 60mm long has its end P on V.P. and end Q on H.P. line is inclined to the H.P. by 60° and V.P. by 30° and it is 20mm away from the profile plane. Draw the projection of the line. 07
- Q.7** (a) What are the various types of sections? Explain removed section. 04
- (b) Fig.2 Shows the front view and top view of the object. Draw the isometric projection. 10

