Dr. Babasaheb Ambedkar Technological University, Lonere

Summer Examination: May, 2015

B. Tech Course in Electrical/EXTC-A, B/IT/Computer Engineering

Subject: Engineering Graphics (ME207)

Semester: II

Date: 21/05/2015 **Time: 4 Hours** **Max. Marks: 70**

Instructions to the Students:

1. **Question No 1 is compulsory and carries 10 marks whereas Question No 2 to Question No 7 carries 12 marks each.**
2. **Attempt any five Questions from Question No 2 to Question No 7.**
3. **Illustrate your answers with neat sketches, diagrams etc. wherever necessary.**
4. **Necessary data is given in the respective questions. If such data is not given, it means that the knowledge of that part is a part of examination.**
5. **If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.**

Q.1 Select an appropriate option for each of the following: **(10)**

i. In isometric drawings:

A) Two axes are perpendicular

B) True measurements can be made only along or parallel to the isometric axes

C) All faces are unequally distorted D) None of the above

ii. Which set of lead grades has a grade out of sequence?

A) H, HB, B, 3B B) 7B, H, F, 3H C) 6B, B, H, 4H D) 9H, HB, B, 2B

iii. Which type of line is part of a dimension?

A) Break lines B) Phantom lines

C) Extension lines D) Cutting plane lines

iv. Which angle cannot be made with either a 45 or 30/60 triangle or a combination of the two?

A) 90 B) 70 C) 30 D) 15

v. In orthographic projection, visual rays or lines of sight for a given view are _____ to each other.

A) Perpendicular B) Oblique C) Normal D) Parallel

vi. When a surface of an object is inclined to a plane of projection, it will appear _____ in the view.

A) Foreshortened B) In true size and shape C) As a line D) As a point

vii. The height, width, and depth of an object can be shown with a minimum of how many orthographic projection views?

A) Six B) Three C) Two D) Four

viii. Horizontal trace of a line exist when the line is

A) Parallel to HP B) Inclined to HP

C) Perpendicular to VP D) Perpendicular to PP

ix. A 90mm long line PQ, inclined at 30° to HP and 45° to VP has end P 15mm above the HP and 25mm in front of VP. The end Q will lie in

A) First angle B) Third angle C) Second or fourth angle D) Any of these

x. The application of development is generally used in _____ work.

A) Casting B) Sheet metal C) Forming D) Molding

Q. 2. Attempt the following: **(12)**

a) What are the two systems of placing dimensions on a drawing? Illustrate your answer with sketches.

b) Construct a regular heptagon of side 35mm.

Q. 3. Attempt the following:

Draw the orthographic projection of a given Figure 1. Given dimensions are in mm.

a) Front view (F. V.) (6)

b) Top view (T. V.) (6)

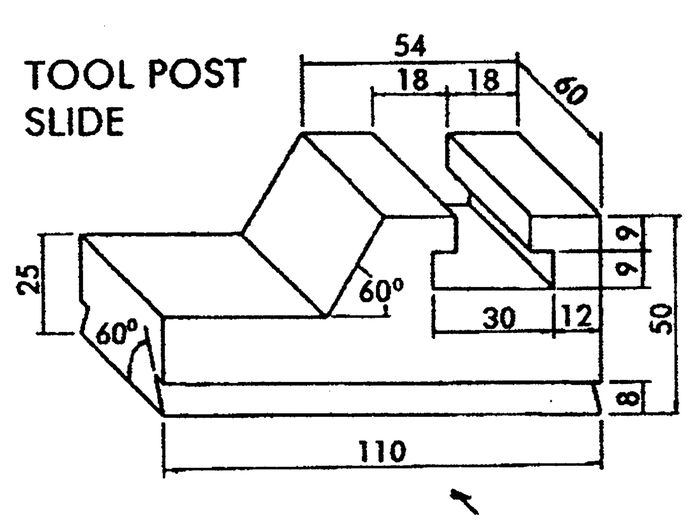

Figure 1

Q. 4. Attempt any one of the following: **(12)**

a) The end A of line AB is 10mm above the HP and 30mm in front of the VP. The end B is 50mm below the HP and 15mm behind the VP. The length of the line is 80mm. Draw the projections and locate the traces. What are the inclinations of the line with the reference planes?

b) A triangle PQR has PQ= 80mm, QR= 60mm and PR= 120mm. The side PQ is in the VP and makes 30° to the HP. Point P is 20mm above the HP and point R is 40mm in front of the VP. Draw the projections of the triangle.

Q. 5. Attempt any one of the following: **(12)**

a) A cylinder of base 60mm and height 80mm has the midpoint of the axis 60mm away from both the reference planes. The axis is inclined at 30° to the VP and 60° to the HP. Draw the projections.

b) A cube of 50mm side length rests on an edge on the HP. The edge is parallel to the VP and the two faces sharing the edge are equally inclined to the HP. An AIP, inclined at 47° to the HP and passing through one of the top corners of the cube, cuts the cube. Draw FV, sectional TV and sectional SV. Also, draw the true shape of the section.

6. Attempt the following: **(12)**

Draw the isometric view of the figure 2. The dimensions are in cm (Third angle projection).

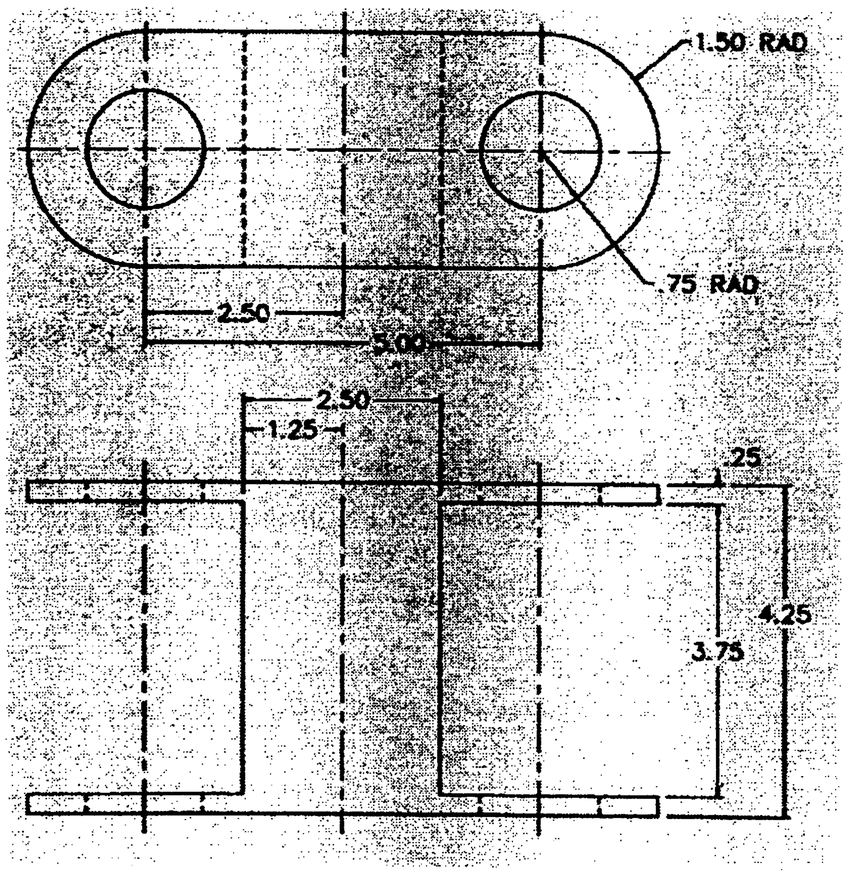

Figure 2

Q. 7. Attempt the following: **(12)**

A pentagonal pyramid, base side 56mm and length of axis 90mm, has a corner of base in the VP. The slant edge through that corner is inclined to the VP at 60° and parallel to the HP. The solid is cut by two section planes: (i) An AIP inclined at 30° to the VP and passing through the midpoint of axis, and (ii) Profile section plane passing through the corners of the base nearer to the VP (other than that in the VP). Develop the intermediate portion of the pyramid.

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