FE207

Total No. of Printed Pages:4

F.E. (Sem - II) (Revised Course 2016-17)
EXAMINATION Nov/Dec 2019
Engineering Graphics

[Duration : Four Hours] **[Total Marks : 100]**

Instructions :

1) Answer **Five** questions **At least Two** from **Part – A**, **Two** from **Part – B** and **One** from **Part – C**
2) **Missing** data if any may be suitably **Assumed**
3) Figures to **Right** indicate **Full** marks

Part- A

Answer ANY TWO questions **Marks**

Q.1

A) A shot is discharged from the ground level at an inclination of 65° to the ground which is assumed to be horizontal. The shot returns to the ground at a point 90m from the point of discharge. Trace the path of the shot, assuming it to be parabolic. Choose suitable scale. **(10)**

B) The end A of a line AB is 15mm above the HP and 20 mm in front of the VP. The end B is 10 mm below the HP and 20mm behind of the VP. The end projectors of the line AB are 60mm apart. Determine the true length of the line AB and its true inclinations with the HP and the VP. **(10)**

Q.2

A) A regular pentagonal lamina of 50mm side is resting on one of its corner in the VP. The edge opposite to this corner makes an angle of 25° to the HP. Draw the projection of the pentagonal lamina, if its surface is inclined at 60° to the VP. **(10)**

B) Two oranges are hanging from a tree adjacent to an old fence. One is at a height of 5m from the ground and 2m from the fence while the other one is on the same side of the fence but at a height of 1.5m from the ground and 5m from the fence. Determine graphically the true distance between the two oranges given that the distance between them measured along the ground parallel to the fence is 4m. **(10)**

Q.3

A) A square lamina of side 50mm appears as a rectangle of sides 50 x 18mm in the top view. Draw its projections when its longer side is in the HP and parallel to and 20mm away from the VP. Also find the inclination of lamina with the HP. **(10)**

B) A regular hexagonal prism of base side 30mm and height 70mm is resting on the HP on one if its base edge such that its axis makes an angle of 30° to the HP and the edge of the base on which it is resting on makes an angle of 50° to the VP. **(10)**

PART- B

Answer ANY TWO questions

Q.4 **A)** A right regular square pyramid, edge of the base 40 mm and height 60mm is resting on its base in the HP with one of its base edges perpendicular to the VP. A section plane perpendicular to the VP and inclined to the HP cuts the pyramid in such a way that the true shape of the section is a trapezium whose parallel sides measure 32mm and 16mm. Draw the front view, sectional top view and true shape of the section. Also determine the inclination of the cutting plane with the HP. **(10)**

B) Draw the projections of a right circular cone, diameter of base 50 mm and height 80mm, resting on ground on its base. A point P initially situated on the circumference of the base and moves around the surface of the cone and comes back to the starting point. Find the length of the shortest path the point P can take in covering the distance along the surface of the cone. Also show the path in the FV and the TV. **(10)**

Q.5 A right regular pentagonal pyramid edge of base 30mm and height of axis 45mm is resting on HP with an edge of base parallel to the VP. A section plane perpendicular to the VP and inclined at 45^{o} to the HP cuts the pyramid at a point 30mm above the base removing its top part. Draw the sectional front view, top view, true shape of the section and development of the surface of the remaining portion of the pyramid. **(20)**

Q.6 **A)** Figure FIG. 6A shows pictorial view. Draw the following views using first angle projection method. **(10)**

i) Front view looking in direction of arrow

ii) top view

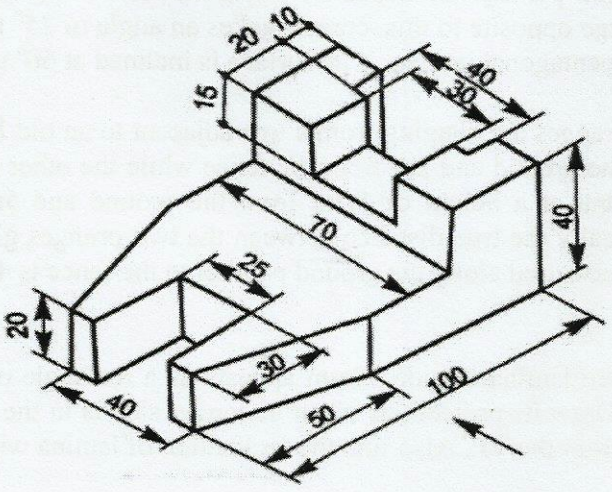

FIG. 6A

B) Two orthographic views are given in FIG. 6B below. Draw an isometric view. **(10)**

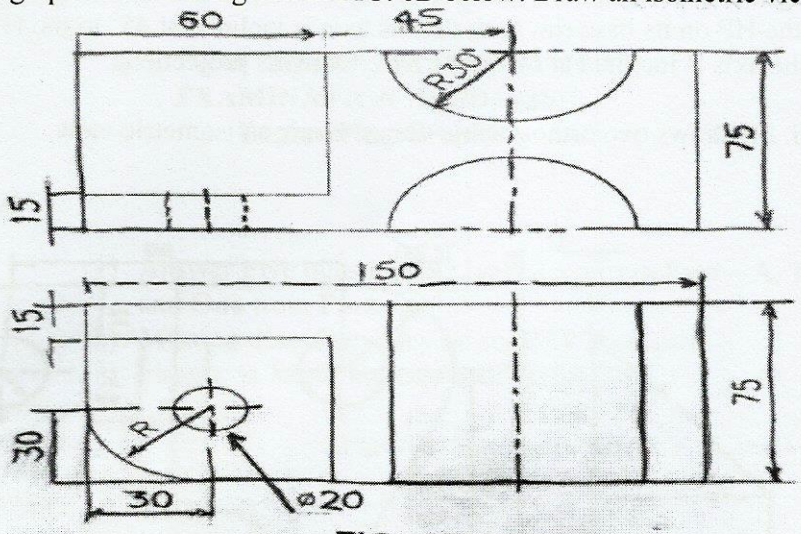

FIG. 6B

Part – C

Answer ANY ONE question

Q.7

A) One end of an inelastic thread of 120mm length is attached to one corner of a regular hexagonal disc having the length of side of 25 mm. Draw the curve traced out by the other end of the thread when it is completely wound along the periphery of the hexagonal disc, keeping the thread always tight. Name the curve. **(10)**

B) FIG.7B shows the pictorial view. Draw the following views using first angle projection method. **(10)**

i) Front view in the direction of Arrow X.

ii) Top view taking section along A-A

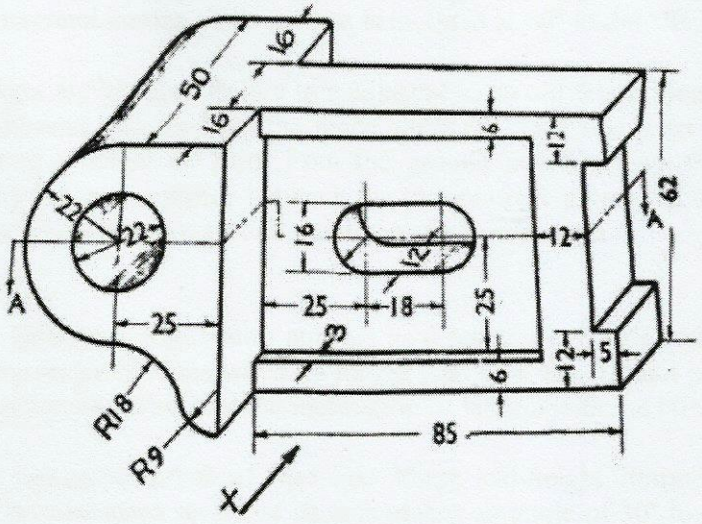

FIG. 7B

Q.8

A) A right circular cylinder, diameter of base circle 50mm and length of axis 70mm, rests on the HP on its base rim such that its axis is inclined at 45° to the HP and the top view of the axis is inclined at 60° to the VP . Draw its projections. **(10)**

B) FIG. 8B shows two orthographic views. Draw an isometric view. **(10)**

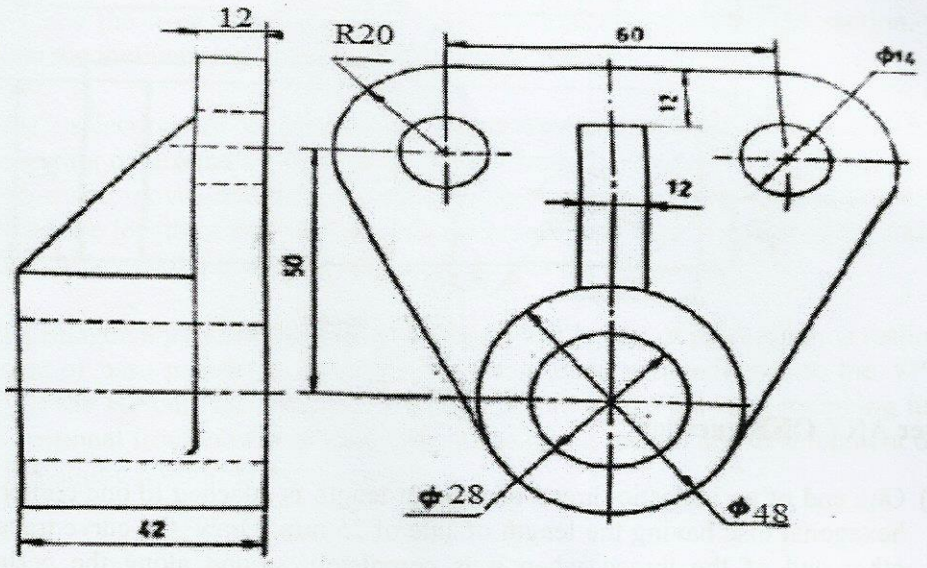

FIG. 8B