# B.E. MECHANICAL ENGINEERING, FIRST YEAR, FIRST SEMESTER EXAM 2019 (Old)
## ENGINEERING DRAWING

Time: 4 hours                                                        Full Marks: 100

Angle of projection and scale must be clearly indicated wherever applicable.
Any unfurnished dimension may be taken proportionately. Avoid redundant dimensioning.

1.  a) Following engineering drawing lettering conventions, write the phrase given below in single stroke upright letters having 10 mm height.                                    [10]
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OR

b) Construct a diagonal scale of RF = 1/50 showing decimeter and centimeter and long enough to measure 5.0 meter. Show a distance of 3.34 meter within that scale.                [10]

2.  a) Draw the following:                                                    [10 × 2]
(i)   A regular heptagon of 30 mm side.
(ii)  The distance between the centers of two circles of 65 mm and 90 mm is 120 mm. Draw an internal and an external common tangent to the two circles.

OR

b) In a rigid wheel of diameter 50 mm, a point (P) is located on its periphery (at the contact between the wheel and the ground). If wheel starts rolling without slip, determine the curve traced by P for one compete rotation of the wheel.                                            [20]

3.  a) A pentagonal pyramid with 30 mm base edge and 75 mm long axis stands upon a circular block, (75 mm diameter and 25 mm thickness) such that their axis are in a straight line. Draw the projections of the solids in combination when the base of the block is inclined at 30° to the ground and also an edge of the base of the pyramid being parallel to the V.P.                            [40]

OR

b) Draw the front view, top view and left-hand-side view of the object shown in Fig. Q3b looking from the direction of the arrow X. Use first angle projection.                        [40]

4.  a) Develop the isometric view of the object from the views of the object provided in Fig. Q4a.    [20]
b) Draw the sectional front view and top of the object show in Fig. Q4b where the vertical section plane passes through the points A and B (center of the holes) as shown in the figure. Use first angle projection.                                                    [10]
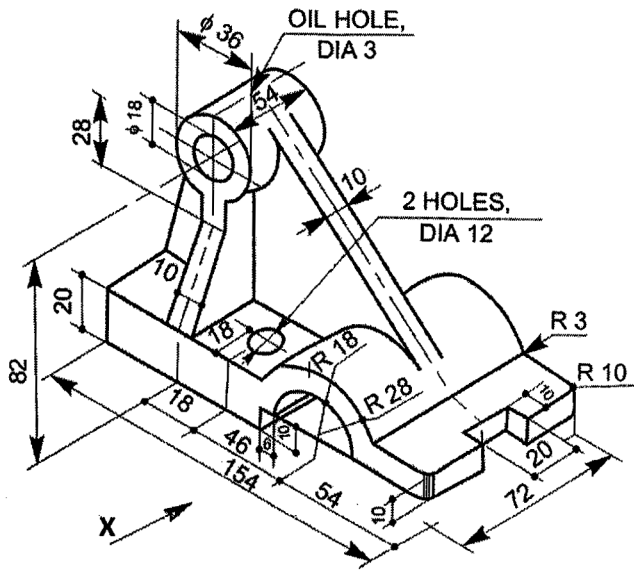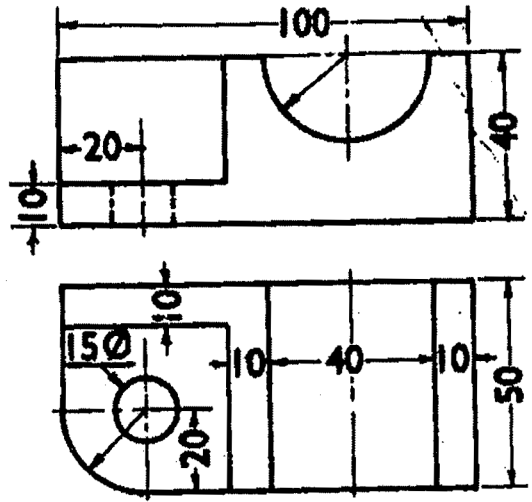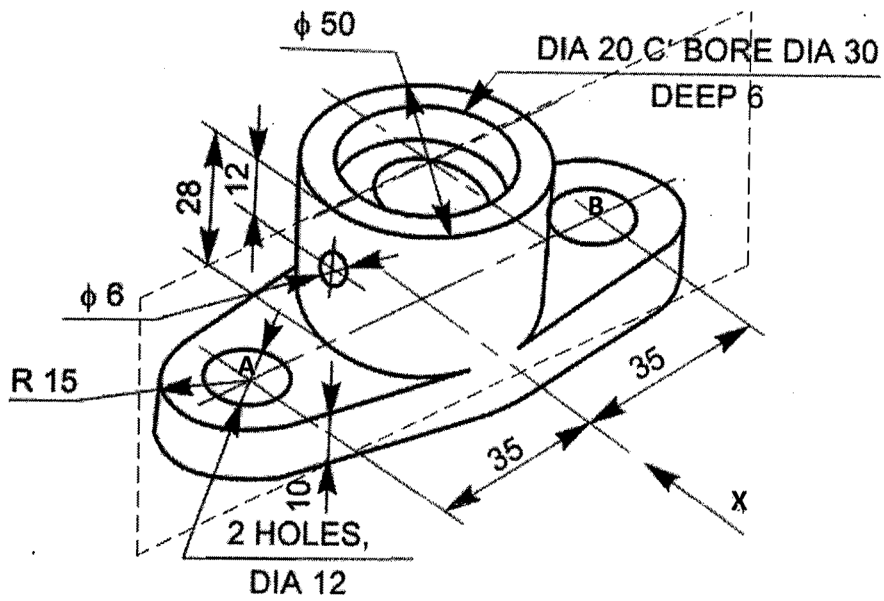
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Fig. Q3b



Fig. Q4a



Fig. Q4b