BACHELOR OF METTALURGICAL ENGINEERING EXAMINATION, 2018

(1st Year, 2nd Semester)

ADVANCED ENGINEERING DRAWING

Time: Three hours Full Marks: 100

Answer any **TWO** questions

Any missing, unfurnished data may be assumed proportionately, consistent with the problem. Third angle projection is to be used, wherever necessary.

Q1. (a) Find out the true length of PQ and the three angles it makes with the Vertical, Horizontal and Profile planes by revolution method. Coordinates of P and Q are (5, -15, 15) and (25, -25, 35) respectively. Use proper nomenclatures.

(b) A hexagonal prism, with axis vertical, sides 30 mm each, height 90 mm, is placed vertically such that one of the sides of the base makes an angle of 90° with the vertical plane. The prism is cut by a plane, perpendicular to the vertical plane, passing through the middle point of the prism axis, making an angle of 30° with the horizontal plane. Draw the necessary views to develop the surfaces of the truncated prism. . (30+20)

Q2. (a) Draw the full sectional front view and the top view of a hexagonal bolt fitted with a hexagonal nut of appropriate size to join two plates having thickness of 25 mm each. Diameter of the bolt is 20 mm. Apply relevant equations to calculate the required dimensions.

(b) Line RS is defined by two pints R (5, -5, 15) and S (15, -25, 40). Find out the true length and the three angles it makes with the Vertical, Horizontal and Profile planes by auxiliary view method. Use proper nomenclatures. (20+30)

Q3. Draw the full sectional front view and right hand side view of the pulley as shown in figure 1 below. Show appropriate cutting plane. (50)

Q4. Draw the full sectional front view and right hand side view of the flanged coupling as shown in figure 2 below. Show appropriate cutting plane. (50)

Figure 2

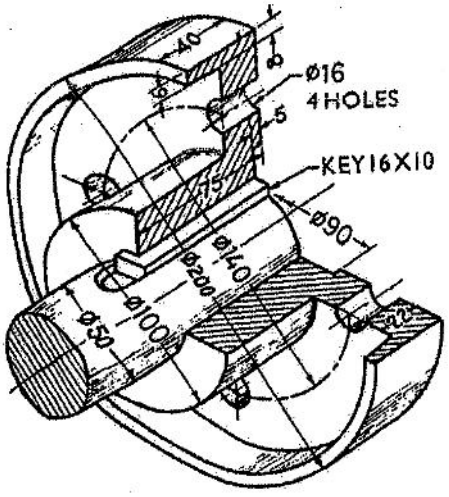

Figure 1