

**INDUSTRIAL AND TECHNOLOGY EDUCATION DEPARTMENT
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
FIRST SEMESTER EXAMINATION 2019/2020 ACADEMIC SESSION
COURSE TITLE: ENGINEERING DRAWING
COURSE CODE: ITE312**

CREDIT UNIT: 2 CREDIT UNITS

TIME ALLOWED: 2 HOURS

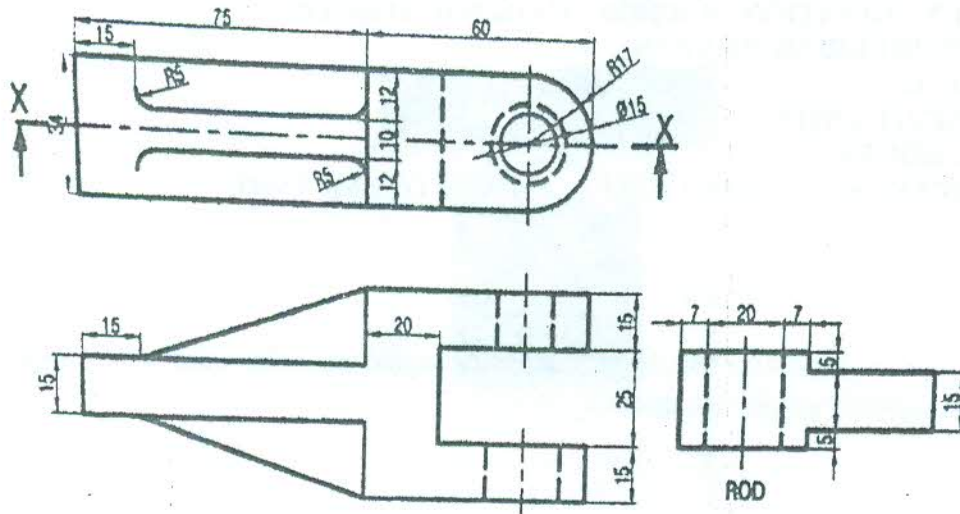
INSTRUCTION: ANSWER QUESTION 1 (ONE) AND ANY OTHER TWO

NOTE: All dimensions are in millimeters

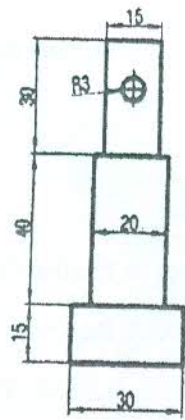
Assume unspecified dimensions

All solutions are to be drawn full size

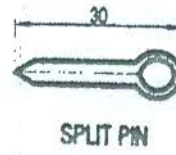
- (1) The diagram in figure 1 shows the details of a stationary engine drawn in third angle projection. With the parts completely assembled, draw:
 - (i) The front view
 - (ii) Section X – X
 - (iii) The right end view
- (2) The cylindrical pipes A and B of unequal diameter intersect as shown in the diagram in figure 2. Draw:
 - (a) The given elevation
 - (b) The plan
 - (c) The curve of intersection of the two pipes in the front elevation
 - (d) Surface development of pipe B making X-X the seam
- (3) The front and end elevation of a cone are shown in figure 3. Draw:
 - (a) Reproduce front and end elevation of a cone in figure 3.
 - (b) Draw an auxiliary plan looking in the direction of the arrow
- (4) A plate cam rotating clockwise is to give an inline point follower the following motion;
0° – 120° lift 32mm with uniform velocity 120° – 180° dwell.
180° – 360° fall 32mm with simple harmonic motion. Draw the cam profile if minimum cam radius is 38mm and the camshaft diameter is 24mm.



STATIONARY ENGINE



HINGE BOLT



SPLIT PIN

Figure 1

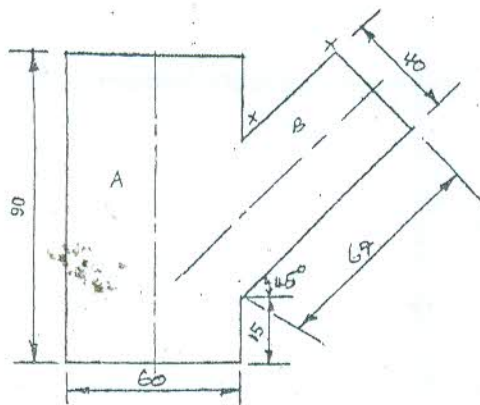


Figure 2

AB=36mm
BC=62mm

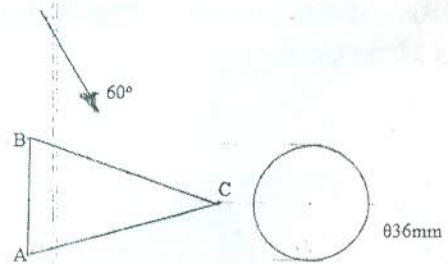


Figure 3