UGANDA INSTITUTE OF COMMUNICATIONS END OF SEMESTER ONE

INFORMATION AND TECHNOLOGY EXAMINATIONS

ACADEMIC YEAR 2022/2023

DEPARTMENT: ICT

SEMESTER: ONE

PROGRAMME(S): HIGHER EDUCATION CERTIFICATE – ENGINEERING (HECE)

YEAR OF STUDY: ONE

COURSE: TECHNICAL DRAWING

COURSE CODE : HECE115

DATE: SUNDAY 26TH, MAY 2022

TIME: 2:00 PM – 5:00 PM

DURATION: 3 HOURS

INSTRUCTIONS:

(i) This paper contains two Sections: A (40 marks) & B (60 marks).

(ii) Attempt ALL questions in Section A, and ONLY THREE questions in Section B.

(iii) All questions in Section B carry equal marks.

(iv) Credit will be given for use of relevant examples and illustrations.

(v) Begin each number in Section B on a new page of the answer sheet.

(vi) DO NOT write on this question paper.

SECTION B [60 MARKS]

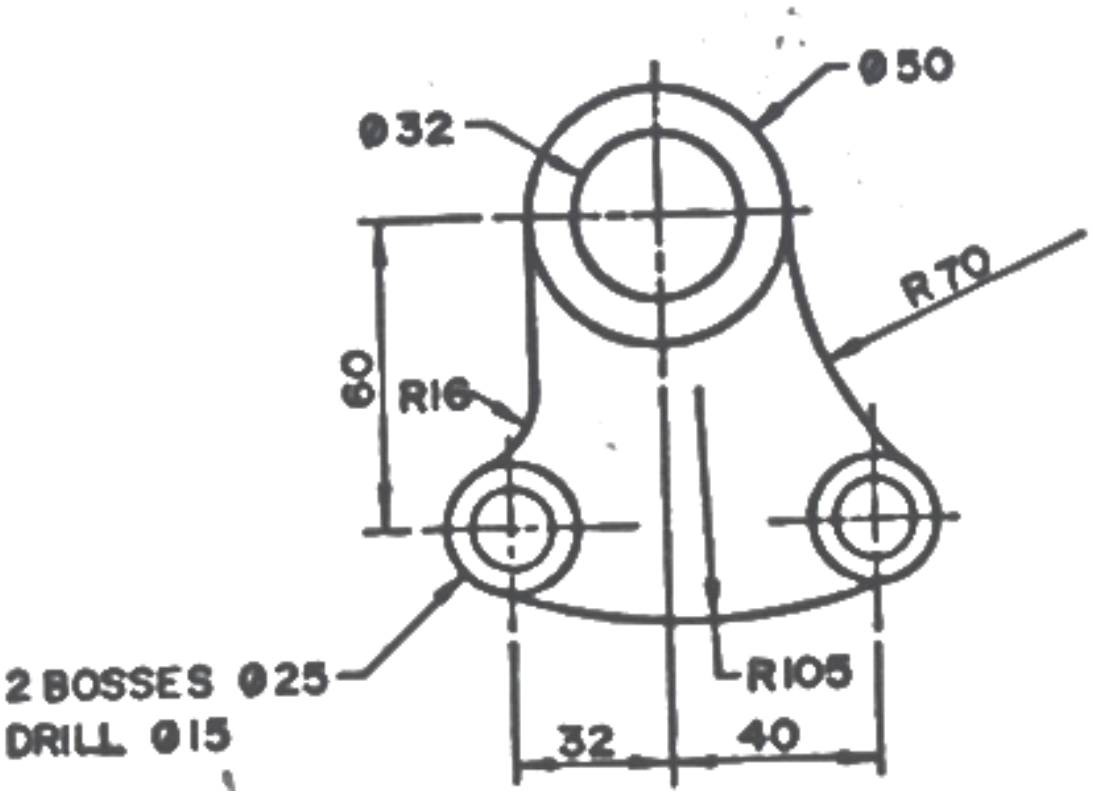
Attempt **ONLY THREE** Questions in this Section.

Question 1

a) i) Draw the boundary and title block to ISO standard. **(4 marks)**

ii) Properly print your name, registration number, course code and questions attempted in the tittle block using single stroke vertical height of 5mm. **(8 marks)**

b) Construct the machine part below to full size. **(28 marks)**



SECTION B [60 MARKS]

Attempt **ONLY THREE** Questions in this Section.

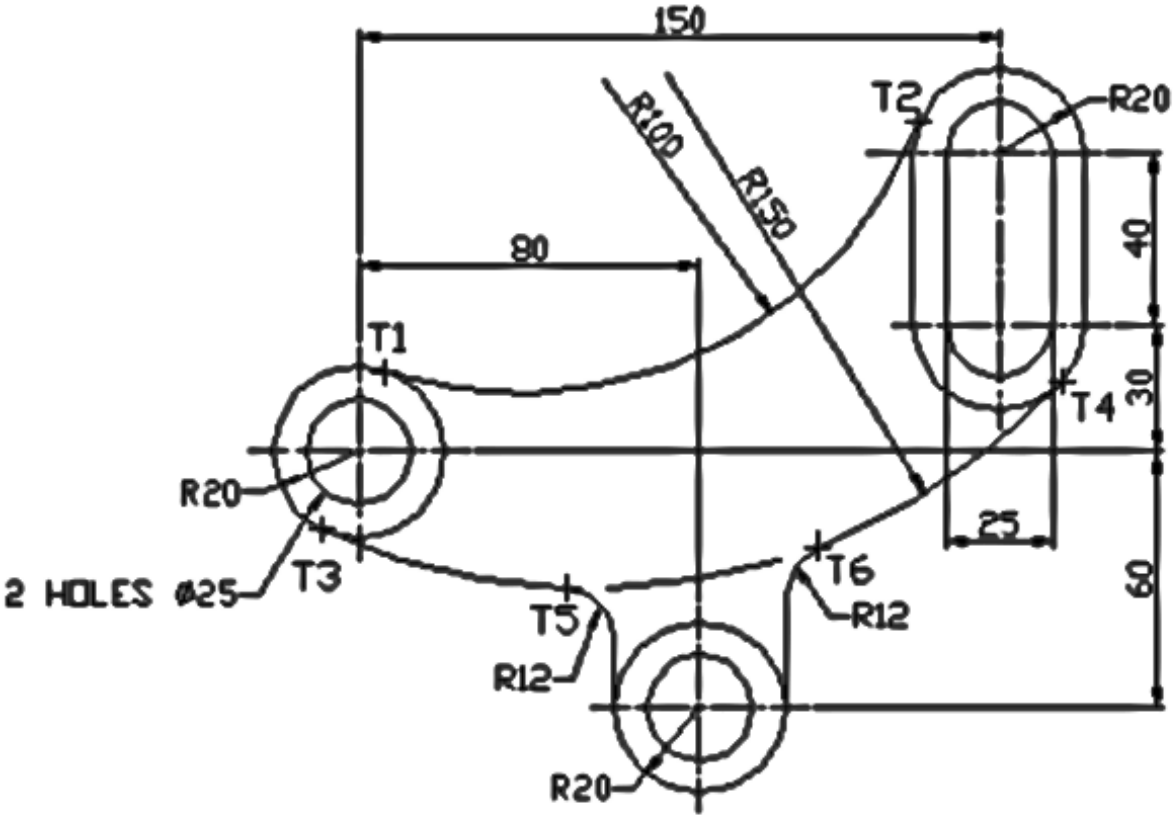
Question 2

a) Draw an isosceles triangle of 150mm long base and 120mm long altitude. **(6 marks)**

b) Inscribe a parabola in it by method of tangents. Use French curves to obtain a smooth curve. **(14 marks)**

Question 3

Draw the below swivel link connector using a suitable scale. **(20 marks)**



Question 4

a) Point P is 60 mm and 40 mm from horizontal and vertical axes respectively. Draw Hyperbola through it. **(10 marks)**

b) Construct the involute of a circle of diameter 50mm given that the string length is equal to the circumference of the circle. **(10 marks)**

Question 5

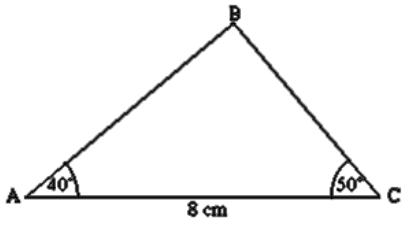
a) Construct the triangle below. **(3 marks)**

b) Measure the length of AB and BC **(2 marks)**

c) Inscribe a square in the triangle. **(6 marks)**

d) Measure the length of one side of the triangle. **(1 mark)**

e) Circumscribe a hexagon on a circle of radius 30mm. **(8 marks)**



Question 6

The major axis of an ellipse is 160mm long and minor axis 90 mm long.

a) Find the focus points. **(2 marks)**
b) Draw the ellipse by Auxiliary method. **(13 marks)**
c) Draw a tangent to the ellipse at a point on it 25mm above the major axis. **(5 marks)**