AIR FORCE INSTITUTE OF TECHNOLOGY
FACULTY OF AIR ENGINEERING
MECHANICAL ENGINEERING DEPARTMENT
FIRST SEMESTER EXAMINATION 2020/2021
B.ENG. MECHANICAL ENGINEERING
200 LEVEL

Course Title:	ENGINEERING DRAWING I
Course Code:	GET 203
Credit Unit:	2 Units
Instruction:	ANSWER QUESTION 1 AND ANY OTHER 2 QUESTIONS
Duration:	3 HOURS
Date:	29th July, 2021

Question 1 (30 marks)
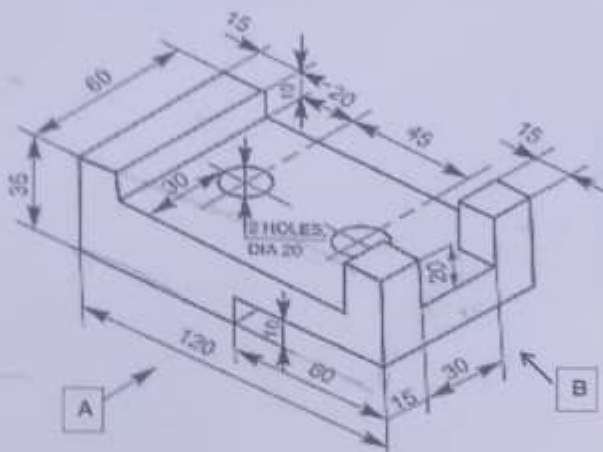
(a) From the given isometric projection shown above, produce a third angle orthographic projection of the component using a scale of 1:2, showing the following details:

    i. Front view looking in the direction of arrow A

    ii. End view looking in the direction of Arrow B

    iii. Plan view from the top

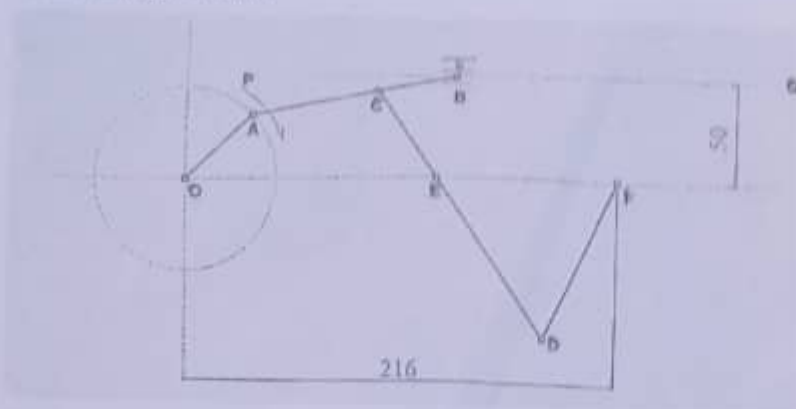(b) Produce the Isometric drawing of the component in the figure above.

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Question 2 (15 marks)

The crank OA of the Mechanism shown in the Figure below rotates clockwise about O. The end B of the link AB Moves along the line PQ and FD swings about F. Obtain the locus of E for one revolution of OA. If OA= 45mm, AB=160mm, BC = 65mm, CD = 120mm, and DF = 75mm.

Question 3 (15 marks)

a.   Draw a 120mm Thread Length of a right hand Single Start square Thread with outside diameter 100mm, inside diameter 80mm, and pitch 60mm. It should cover 2 leads.

b.   Draw a double start thread of major diameter 80mm minor diameter 60mm and pitch 60mm. It should cover 2 leads.

Question 4 (15 marks)

a.   A conical spring of a bicycle's seat has the following specifications. Draw the front view and top view of the spring. Only one turn is sufficient. The outer diameter of the coil at the bottom = 72mm, outer diameter of the coil at the top = 42mm, wire diameter =10mm and pitch = 60mm.

b.   Draw two complete turns of a helical spring of circular cross section of 20mm diameter. The outside diameter of the spring = 110mm and pitch = 60mm.