The Open University of Sri Lanka
Faculty of Engineering Technology

Study Programme	:	Diploma in Technology/Bachelor of Technology (Engineering)
Name of the Examination	:	Final Examination
Course Code and Title	:	**MEX3234 – Engineering Drawing**
Academic Year	:	2012/13
Date	:	24-07-2013
Time	:	9.30 – 13.30hrs
Duration	:	4 hours

General instructions

1. Clarify any doubts with the supervisor/invigilator in your examination hall.
2. **The Question in SECTION A is compulsory**. Answer this question and one another of your choice from **SECTION B**.
3. It is strongly advised to prepare a sketch of the solution on a rough paper, before drawing it on the drawing paper. If you wish, you could attach the sketch to your answer script.
4. **Spend approximately three hours for Question 01** and the rest of the time for the other question.
5. Use both sides of the drawing paper.
6. Draw the Standard cage, Title block, Projection symbol, etc. only for the Question 01. **(Marks will be deducted if the Title block is not properly placed)**
7. All construction details, centerlines, etc. should be clearly shown.
8. Candidate is strictly advised to write his/her Index Number, Registration Number and Course Code only on the drawing paper. Do not write your name or provide any other information.

SECTION A (Compulsory)

Q1. Figure 01 shows the scattered orthographic views of the following components of a **BELT TENSIONER.**

1. FRAME
2. BRACKET
3. PULLEY
4. BUSH
5. SHAFT
6. KEY
7. PIN (02 Nos)
8. STD. NUT
9. WASHER

Assembled Belt Tensioner is a part of a machine tool, where the tension of the belt is adjusted by tilting the assembled unit about the axis of two pins (7) by using a separate mechanism, which is not shown in the figure.
Assemble the components by placing them in their correct position. Draw the following views of the Belt Tensioner to a scale of full size in third angle projection keeping the axis of the Frame in vertical position.

a. **Sectional Front elevation** of the assembly on A-A
b. **End Elevation** of the assembly projected to the left of the view (a)
c. **Plan** projected from view (a)

Assume any missing dimensions. Radii of casting curves may be taken suitably. Show hidden details wherever necessary.

Print the main title "BELT TENSIONER", sub titles, scale and give a minimum of five main dimensions in the drawing. Indicate the symbol of projection.

(75 Marks)

SECTION B

(Answer only one question)

Q2. **Figure 02,** shows two orthographic views of an object. Draw the isometric view of the object to a scale of full size taking the near point as shown by two arrows. **An isometric scale need not be used.** Do not show hidden details and dimensions in your answer.

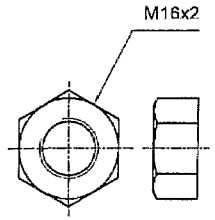
(25 Marks)

Q3. Two circular cylinders, A and B are intersected as shown in the incomplete elevation given in Figure 03. The angle between the axes is 60^0. Two cylinders are made out of thin sheet metal.

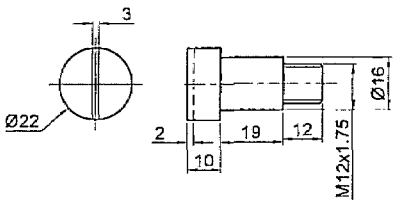
(i) Complete the given **Elevation with interpenetration curve.**

(ii) Draw the **development of the small cylinder (B).**

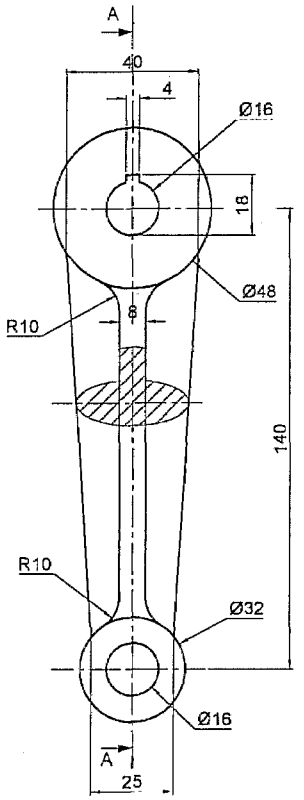
(25 Marks)

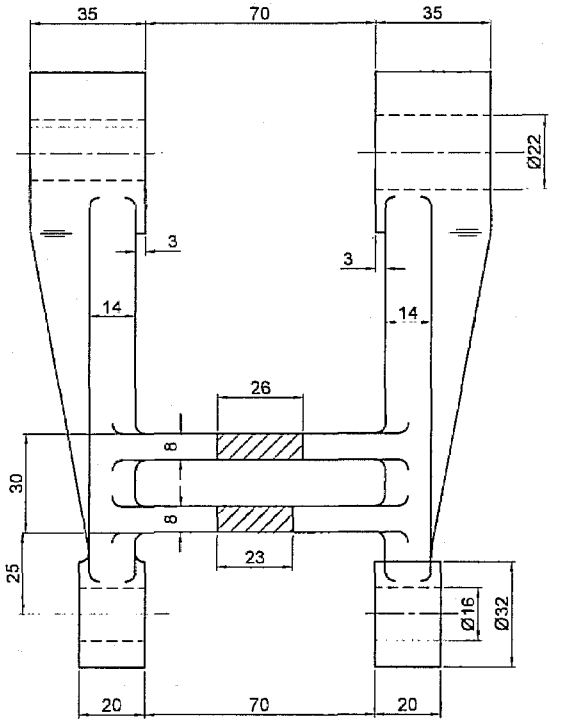


(8) STD.NUT (9) WASHER

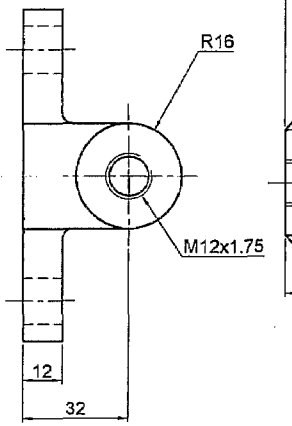


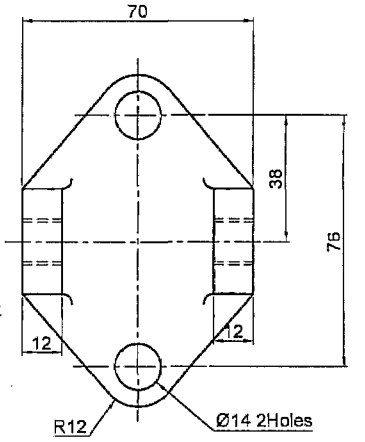
(7) PIN (2 NOS.)



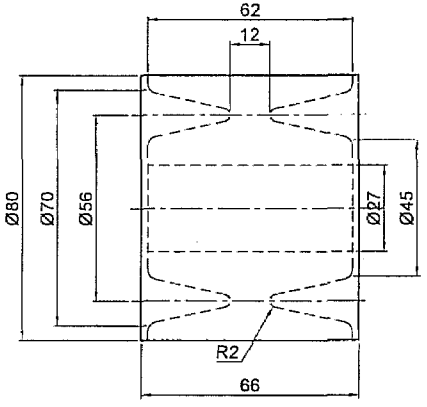


(1) FRAME

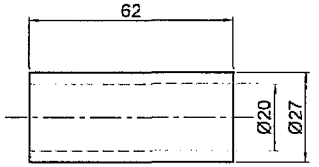




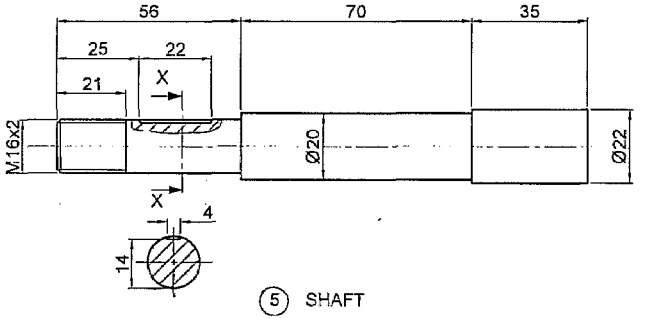
(2) BRACKET



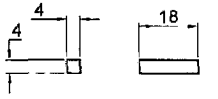
(3) PULLEY



(4) BUSH



(5) SHAFT



(6) KEY

ALL DIMENSIONS ARE IN mm

NOT TO SCALE

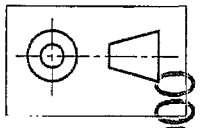


Figure 1 **BELT TENSIONER**

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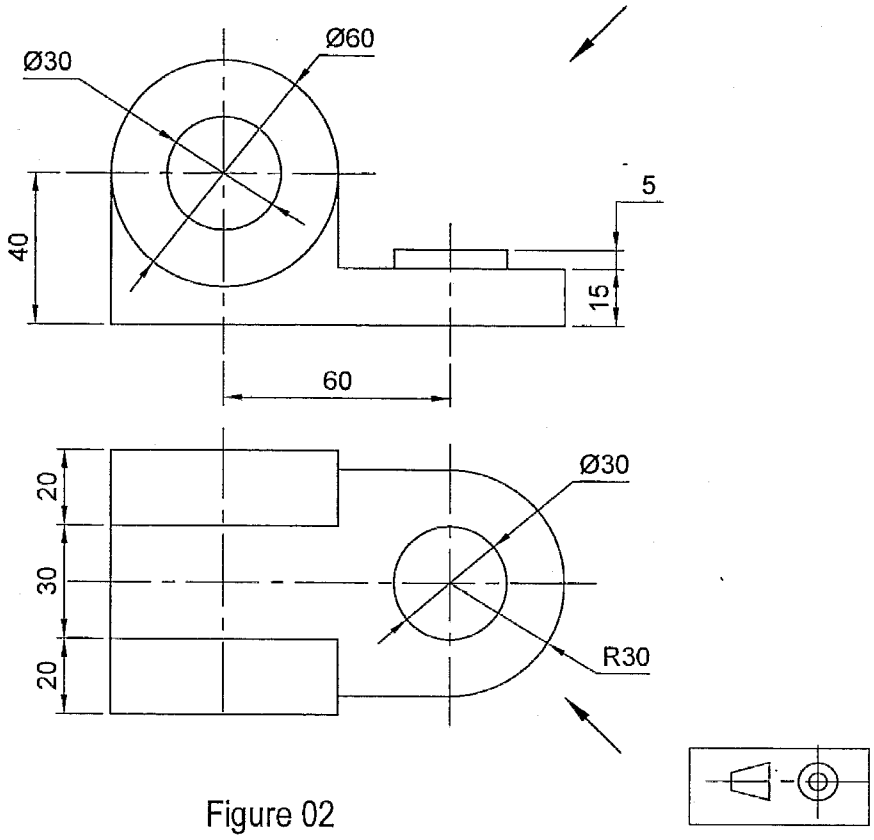


Figure 02

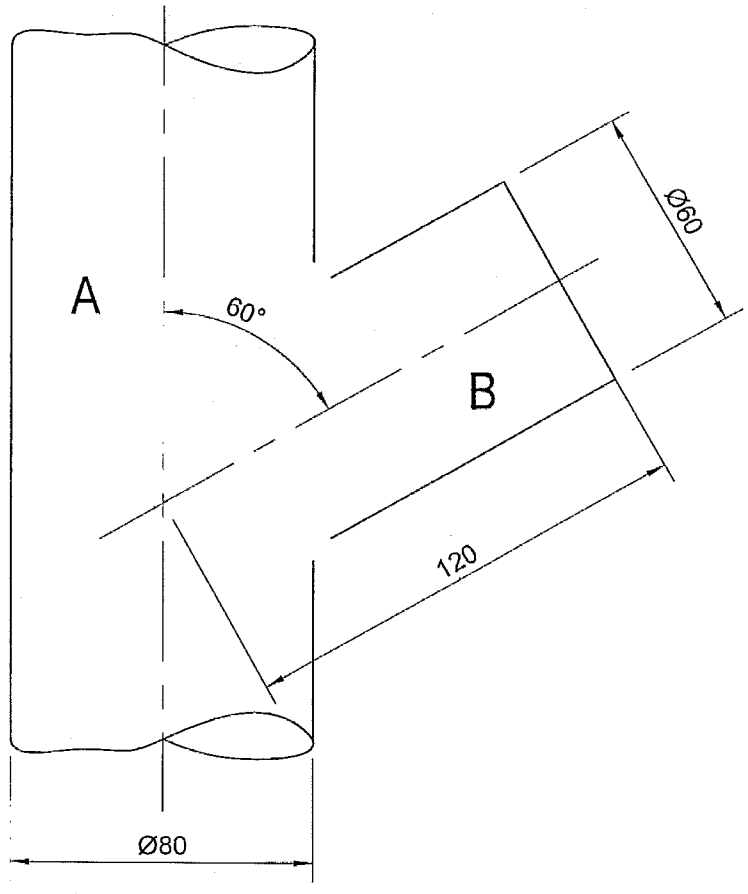


Figure 03