00752

# The Open University of Sri Lanka
# Faculty of Engineering Technology

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| Study Programme | : | Diploma in Technology/Bachelor of Technology (Engineering) |
| Name of the Examination | : | Final Examination |
| **Course Code and Title** | : | **MEX3211 – Communicating Engineering Information** |
| Academic Year | : | 2013/14 |
| Date | : | 14 - 08 - 2014 |
| Time | : | 13.30 – 17.30hrs |
| Duration | : | 4 hours |

| **Write your Index number clearly** | | | | | | | | | | |
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**General instructions**

1. This question paper consists of two sections **PART A** (5 questions) and **PART B** (4 questions).
2. Answer all questions. PART A will carry 60 marks and PART B will carry 40 marks.
3. Spend at least two and a half (2 ½ ) hours for PART A and the remaining time for PART B.
4. Answers should be written or drawn within the space provided under each question in both PART A and PART B. No additional papers should be used for any question.
5. Any answers given in separate sheets other than this question paper will not be considered for evaluation.
6. You may use drawing instruments (other than drawing board and T-ruler) at your discretion.
7. **All sketches must be neatly drawn and proportional in sizes.**
8. It is extremely important that you do not remove the question paper, or any part of the question paper, from the examination hall.
9. Remember to **write your index number** clearly in the space provided above. If you have not received an index number, write your registration number in the space above. **Do not write your NAME.**
10. If you are in a doubt, consult the supervisor or an invigilator conducting the examination.



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## PART – A

**(Five questions – 60 Marks)**

**Question 01.**

(a)

i) Communication is a vital element in social interaction. Briefly explain why it is so important.

ii) State four major elements of **communication**.

iii) Distinguish between **processed data** and **raw data** in relation to information.

(2x3 = 6 marks)

(c) State and briefly explain the six dominant features in an **information society**

(6 marks)

**Question 02.**

i) List **three types of technical reports** you are familiar with.

(3 marks)

**ii)** Explain the purpose of each type of reports listed in part (i) above

(6 marks)

iii) List the main elements in each type listed in part (i) above

(3 marks)

**Question 03**

a) Mention three aspects of the audience a presenter should have prior knowledge about.

(2 marks)

b)

i) Discuss two purposes for which an oral presentation is usually made.

ii) Briefly state three topics that can be selected for an oral presentation in a seminar on "**Global warming**".

iii) Mention three methods of delivery used in oral presentation and briefly explain why one particular type of the three is most effective.

(2x3= 6 marks)

c) Explain what aspects of the presentation venue a presenter should verify prior to a presentation.

(4 marks)

**Question 04**

(a) Explain briefly the use of the following in communicating engineering information:

i) Graphical symbols

ii) Units of measurement

(2x2= 4 marks)

(b) Distinguish between the following two terms using suitable examples.

i) Isometric view and perspective view

(3 marks)

(c) The company you work in is about to introduce a new model **refrigerator** which has many **improved features** compared to the previous model. Prepare an advertisement (without pictures) to be published in newspapers giving at least five such features to attract potential buyers.

(5 marks)

**Question 05**

a) What is meant by the **measure of central tendency** for a distribution of data ?

(2 marks)

b) Suppose that the values of a random sample taken from some population are:
$X_1, X_2 \ldots\ldots\ldots Xn$ (3 marks)

**Prove that**

$$\sum_{i=1}^{n}(x_i - \bar{x})^2 = \sum_{i=1}^{n} x_i^2 - n\bar{x}^2$$ where $\bar{x}$ = sample mean ; $\bar{x} = \frac{\sum x_i}{n}$

c) Table below shows the number of children per family for a group of 20 families. The mean number of children per family is 2.9. Find the **standard deviation**.

| Number of children per family, X | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Frequency, f | 3 | 4 | 8 | 2 | 3 |

**Table 01**

(7 marks)

## PART- B
## (Four questions – 40 Marks)

**Note : Dimensions are given only for guidance and you are not required to use exact dimensions, but sketch your answers to suitable proportions..**

**Question 06.**

Construct the **involutes** of the following.

i) A 20 mm long **straight line** **(3 marks)**
ii) An **equilateral triangle**. The length of a side is 30mm **(4 marks)**
iii) State the steps of your construction in (i) and (ii) **(3 marks)**

**Answer cage**

**Answer cage**

## Question 07

Fig. 01 shows a **bicycle wheel** rolling on a flat road. 'P' is the lowest point of contact between the wheel and the road surface. **Draw the path of the point 'P'** when the wheel rolls and completes one round. Take the outer diameter of the wheel as 50 mm. **(6 marks)**

Briefly state the **steps of your construction** **(4 marks)**

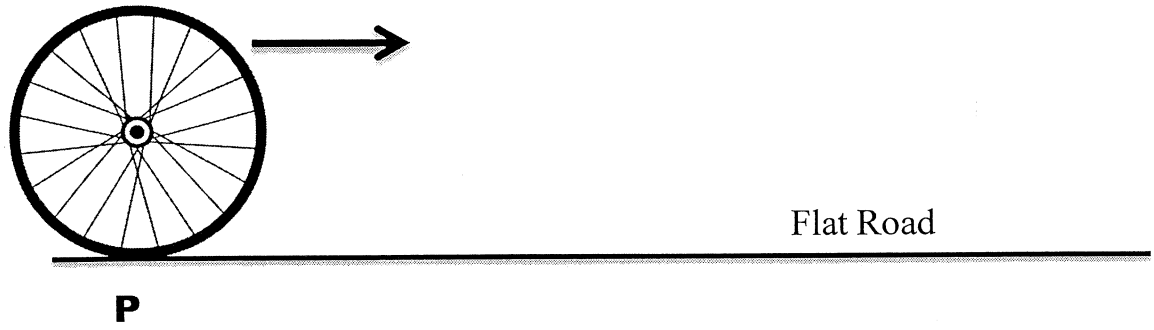



Fig. 01

**Answer cage**

**Question 08**

Figure. 02. is the pictorial view of **a support bracket**. Sketch the following views in "first angle projection" showing 04 dimensions in each view without repeating the same.

i) **Front Elevation** viewed from the direction '**A**'. **(3 marks)**

**ii) Plan** viewed from top. **(3 marks)**

iii) **End Elevation** viewed from the direction '**B**' **(2 marks)**

**Note:** Name views, show hidden details and indicate **4 major dimensions** in each. **(2 marks)**

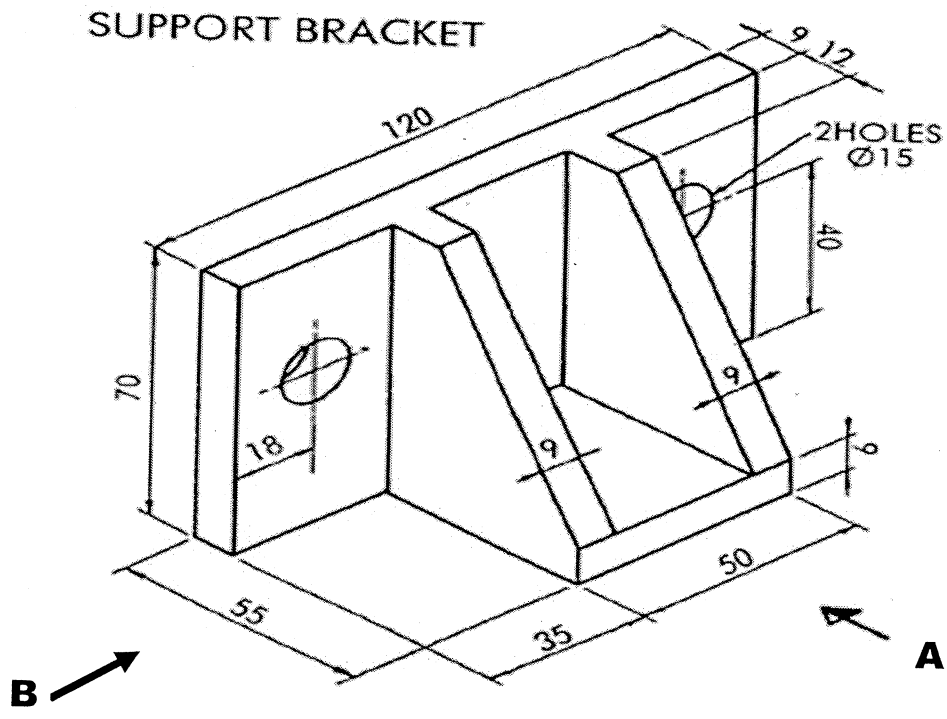



Fig. 02

**Answer cage**

**Question 09**

Fig. 2 shows the front elevation and plan of a cast iron object. Sketch the **isometric view of the object** taking the **nearest point** as given by the arrows.

**(Correct near point- 3marks+Isomertic view-7marks = 10marks)**

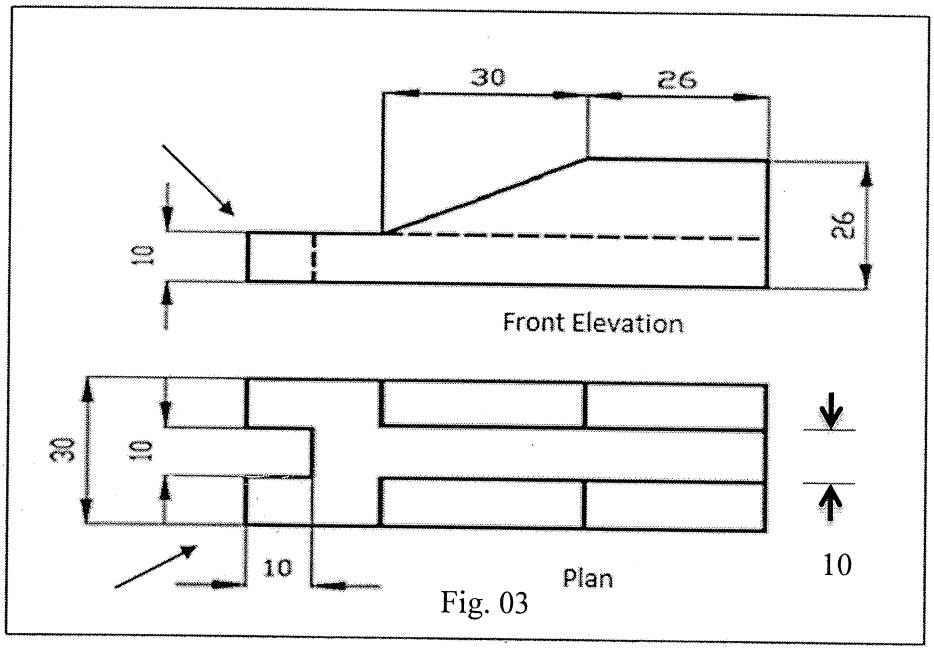



Fig. 03

**Answer cage**