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University Examinations 2013/2014

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR DIPLOMA IN ELECTRICAL ENGINEERING

EMC 0204: ENGINEERING DRAWING II

DATE: APRIL 2014 **TIME: 3 HOURS**

INSTRUCTIONS: *Answer question **one** and any other **two** questions*

QUESTION ONE – (30 MARKS)

Fig 1 shows views and a sketch of a lever bracket assembly. The pin fits into the hole in the bracket and is held in position by means of an M 15 nut. Draw full size the following views of the assembled bracket including the nut.

(a) A FE looking in the direction of the arrow X. (7 Marks)
(b) A sectional EE on A – A looking in the direction of the arrows. (10 Marks)
(c) A sectional plan on BB looking in the direction of the arrows. (10 Marks)
(d) Complete parts list. (3 Marks)

QUESTION TWO – (15 MARKS)

(a) Define tolerance. (1 Mark)
(b) Using sketches describe three main types of engineering fits. (6 Marks)
(c) By chain dimensioning calculate the tolerances between holes B, C and D given the following limits between the centre of holes A, B, C and D.
Limits between holes A and B – 20.03
- 19.98

Limits between holes A and D – 30.02

- 29.98

Limits between A and D - 60.00

- 59.98

Assume all holes lie in sequence along the same centre line. (3 Marks)

(d) Draw the symbols of each of the following electrical components. (5 Marks)

(i) Transformer
(ii) Generator
(iii) Junction of connected paths, conductors or wires
(iv) Incandescent lamp
(v) 2 types of resistors
(vi) Fuse
(vii) Push button circuit closing
(viii) PNP type transistor
(ix) NPN type transistor
(x) Motor

QUESTION THREE – (15 MARKS)

A pentagonal pyramid truncated along the cutting plane line A-A is shown in fig 2. Draw:

(a) Front and plan views in third angle projection. (7 Marks)
(b) True length of the slant edges (4 Marks)
(c) An auxiliary view to show the true shape of section A – A (4 Marks)

QUESTION FOUR – (15 MARKS)

Fig 3 shows a square pipe intersecting a circular pipe. Using appropriate drawings, establish the following:

(a) Curve of intersection (7 Marks)
(b) The surface development of the square pipe. (8 Marks)