



**FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF ENGINEERING AND ENGINEERING TECHNOLOGY,
DEPARTMENT OF MECHANICAL ENGINEERING**


**HARMATTAN SEMESTER EXAMINATION
ENG 203: ENGINEERING DRAWING III**

**2006/2007 SESSION
TIME ALLOWED: 3 HRS
DATE: 20TH JUNE, 2007**

- INSTRUCTIONS: I. PREPARE THE TITLE BLOCK FIRST
II. WRITE YOUR NAMES, REG. NOS. & DEPT IN INK
III. ANSWER QUESTION 1 AND ANY OTHER TWO.**

- 1(a) Draw in the First Angle Projection, three views of the body of Shaft Bearing shown in Fig 15 – 49.
- (b) Complete a pictorial view of an assembly drawing of body (1) and cap (2) of the Shaft Bearing
- (c) Complete a part list of the principal part of the assembled parts.
- (d) Draw in the Third Angle Projection the following views of the Drilling and Tapping Jig (Fig 15 –48)
- (i) Front Elevation (F.E) and
 - (ii) End Elevation (E.E)
- 2 Two pieces of metallic materials each 50mm thick are to be secured together by an M16 hexagon bolt and nut. The nominal length of the bolt is to be 120mm and a plain washer is to be used under the nut. Draw the following views of this assembly in the first angle.
- (i) Front View
 - (ii) End View
 - (iii) Plan View
- } Sectional
- 3(a) Draw the following architectural symbols as used in presentation drawings: closed stairs (up and down), screened partition, folding door, outside storage and dressing room.
- (b) Make drawings (symbols and weld) of the following fillet and groove welds.
- (i) With legs of equal length
 - (ii) With different leg lengths
 - (iii) V-groove welds (side and front view)
- 4(a) Make an instrument drawing of how electricity can be brought into a house (Identify the important fixtures)
- (b) Make an instrumental drawing of a small stanchion that will be connected to a base plate using two equal angles. Identify the major parts of the joining. Use your own dimensions.

NB: Adopt your dimensions (in SI Units).



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 3. WRITE ON YOUR ANSWER SCRIPT (IN INK) YOUR NUMBER IN THE ATTENDANCE REGISTER.
 4. ANSWER ALL QUESTIONS.

1 Draw the following shafts and holes. Hence determine the following parameters where applicable minimum and maximum clearances, minimum and maximum interferences

- | | |
|--|--------------------------------------|
| (i) Shaft \varnothing 18.00
17.95 | - Hole \varnothing 18.15
18.10 |
| (ii) Hole \varnothing 17.95
17.93 | - Shaft \varnothing 18.10
17.98 |
| (iii) Shaft \varnothing 18.05
17.98 | - Hole \varnothing 18.08
18.00 |

(b) Draw a Highway Electrical wiring diagram and make drawing symbols of a fuse, inductor coils, antennas, batteries and capacitors.

2. Two pieces of metallic materials 50mm thick are to be secured together by an M16 hexagon bolt 120mm and a plain washer is to be used under the nut. Draw the following views of this assembly in the first third projection (i) Front view, (ii) End view in plan (all sectional).

3.(a) Draw the following pipe fittings:-

90° Elbow, 45° Elbow, Single line reducer double line reducer, Tee junction, coupling, Base Elbow.

(b) Draw the following riveted joints : Single riveted Lap; Double riveted lap; Single strap butt; Single riveted double butt Base Plate riveted truss and Gusset plate riveted truss.

4. The drawing on FIG 1 represents a Bracket. Draw three views of this bracket in the third angle orthographic projection

