



FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA,  
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION,  
DEPARTMENT OF INDUSTRIAL & TECHNOLOGY EDUCATION

FIRST SEMESTER 2019/2020 SESSION EXAMINATION

COURSE CODE: - ITE 371

COURSE TITLE: - METAL FABRICATION PROCESSES

TIME ALLOWED: - 2 HOURS.

INSTRUCTION: - *ATTEMPT FOUR (4) QUESTIONS ONLY.*

- (1a). What is riveting in Metal fabrication?
- Using neat sketches, show the following rivets: Snap head, counter sunk head, Pan Head, flat head, and conical head.
  - Show with sketches stages involved in riveting two metal plates together using snap head rivet
- (2a). Describe the function of the following stakes in metal fabrication: Funnel stake, Half-moon stake, Bick iron stake, Hatchet stake and creasing stakes
- Show with sketches how a wired edge can be prepared on sheet metal using relevant stakes and hand tools
  - Draw a neat diagram of a straight Tinsnips
- (3a). With the aid of sketches describe the following Tinplate (Self-secured) joints used in sheet metal fabrication: Folded seam, grooved seam, circular lap seam, circular folded seam, circular folded over seam
- Differentiate between beaded edge and wired edge
  - Using sketches, show the following mallets used in metal fabrication: Hide mallet, Hardwood mallet and Rubber mallet.
- (4a). Describe with the aid of a detail diagram how metal plates can be obtained from an Ingot.
- Differentiate the following forms of structural materials: 1. Rolled Steel Angles (RSA), 2. Rolled Steel Channels (RSC), 3. Rolled Steel Joists (RSJ)
  - Give reasons why you will prefer to use electric guillotine than using hand shearing machine in cutting sheet metal for fabrication work.
- (5a). As a metal fabrication specialist, convince a layman that Universal Column (UC) is different from Universal Beam (UB) in structural metal fabrication.
- With the aid of sketches show the differences between riveting and bolting, what is the advantage of one over the other.
- Draw a neat diagram of combined set and snap used in riveting.
- (6a). Show with sketches a riveted Butt-joint with snap head rivet.
- Draw a detail diagram to show the difference between false wiring and wired edge products
  - What is stiffness in sheet metal fabrication? Show one example of where it is used.

Good Luck