



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

SECOND SEMESTER 2019/2020 SESSION EXAMINATION

COURSE CODE: -ITE 582

COURSE TITLE: - Metal Stamping

TIME ALLOWED: - 2 Hours

INSTRUCTION: - Attempt four (4) Questions only

- (1a). What is sheet metal bending as an operation in metal stamping?
- b). What does K-Factor and bending allowance stand for in sheet metal bending?
- c). Using relevant formulae, calculate the flat length of figure 1 below:



$$A = 120^\circ, R = 20\text{mm}, T = 4\text{mm}, K = 0.5$$

- (2a). What is cold operation in sheet metal forming?
 - b). Outline five (5) advantages of cold operation as compared to warm forming
 - c). State five (5) disadvantages of warm operation
- (3a). What is piercing operation?
 - b). Outline and briefly explain four (4) distinct method of piercing
 - c). State the sequential process of punching and blanking of sheet metals
- (4a). Why the need for use of stamping lubricant during stamping operation?
 - b). Outline four (4) relevant lubricants available for metal stamping operation
 - c). What is the reason behind sheet metal forming simulations?
- (5a). What do you understand by the term progressive stamping?
 - b). Using diagrams differentiate between blanking and punching in sheet metal work
 - c). Outline the three (3) downside effects of blanking process
- (6a). What is metal stamping?
 - b). List six (6) operations in metal stamping and briefly discuss one
 - c). Differentiate between stamping and forging operations

Good Luck