



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESS WAY JABI, ABUJA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF CRIMINOLOGY AND SECURITY STUDIES
2024 I EXAMINATION

COURSE CODE: CSS443
COURSE TITLE: TRAFFIC ROAD SAFETY AND EQUIPMENT
CREDIT UNIT: 3
TIME ALLOWED: 3 HOURS
INSTRUCTION: ANSWER ANY FOUR QUESTIONS

1. Carefully outline and discuss the possible intervention policies of the government on road safety **(17.5 Marks)**
2. Highlight the five strategies for a safer road by Trincal et al (1998) **(17.5 marks)**
3. Define road safety engineering and highlight 4 levels for road safety engineering **(17.5 marks)**
- 4a. Define Road Safety Audit **(2.5 Marks)**
- 4b. List and explain three (3) objectives of Road Safety Audit **(7.5 Marks)**
- 4c. List and explain three (3) uses of Road Safety Audit **(7.5 Marks)**
- 5a Define the Traffic Management Unit (TMU) **2.5 marks**
- 5b. List and explain three (3) objectives of TMU **7.5 marks**
- 5c. List and explain three (3) functions of TMU **7.5 marks**

- 3b) Write short notes on the following terms:
 (i) Classifier (ii) Transducer (iii) Sequencer (iv) Acceptor (6marks)
- 3c) Define shift register counters and state two (2) popular register counters used in digital system design. (3marks)
- 3d(i) Convert the following BCD code to decimal.
 (a) 001101010001 (b) 100110000100
- 3d(ii) Convert the following decimal to BCD code. (2marks)
 (a) 170 (b) 2469
- 4a)i. Convert 657 in decimal to binary number.
 ii. Convert 1011101 in base two to decimal number.
 iii. Perform the binary division of this $110 \div 10$. (6marks)
 iv. Convert 1101100000110_2 to octal number system.
- 4b) State five (5) different notations we can use to capture the behavior of finite state machines. (5marks)
- 4c) Simplify the following Boolean expression. (4marks)

$$\overline{AB + AC} + \overline{A} \overline{B} C$$
- 5a) List out the two (2) classes of digital logic circuits. (2marks)
- 5b) Draw a simple diagram of logic symbol of Gated S-R latch circuit. (4marks)
- 5c) Write short notes on the following terms:
 (i) Memory Signal (ii) Read and Write Signals
 (iii) Memory Read Operation (iv) Memory Write Operations (6marks)
- 5d) Why does Gated D Latch called transparent latch in Sequential logic circuit? (3marks)
- 6a) What are the three (3) features in which memories are classified to? ($1\frac{1}{2}$ marks)
- 6b) State the three (3) classification of memory. ($1\frac{1}{2}$ marks)
- 6c) State the uses of Delay Flip- Flop in digital logic circuit. (6marks)
- 6d) Differentiate between Assembly language and High-level language. (6marks)