ELIZADE UNIVERSITY, ILARA-MOKIN, ONDO STATE
FACULTY OF ENGINEERING
DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY

SECOND SEMESTER EXAMINATION, 2018/2019 ACADEMIC SESSION

COURSE TITLE: TELECOMMUNICATION SYSTEMS PLANNING

COURSE CODE: ECT 534

EXAMINATION DATE: 10th JULY, 2019

COURSE LECTURER: MISS. T. T. ADEYEMO

HOD's SIGNATURE

TIME ALLOWED: **2 HOURS**

INSTRUCTIONS:
1. ANSWER <u>FOUR QUESTIONS ONLY</u>
2. SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAM.
3. YOU ARE **NOT** ALLOWED TO BORROW ANY WRITING MATERIALS DURING THE EXAMINATION.

Question 1
a. Differentiate between Formal Methods and Formal Description Techniques with respect to their definitions, purposes and types. (6 marks)

b. List the basic functions of the International Organization for Standardization (ISO). (5 marks)

c. Mention the advantages and disadvantages of Specification and Description Language (SDL). (4 marks)

Question 2
a. Simple ProMeLa Interpreter (SPIN) is one of the most popular and exploited formal description techniques. Discuss its limitations and improvement over the years. (5 marks)

b. Discuss the basic example of applications in Language of Temporal Ordering Specifications (LOTOS) (5 marks)

c. Explain the network planning process with illustrations (5 marks)

Question 3
a. Depending on the timescale of the network evolution problem under study, explain the three different planning activities that can be performed. (6 marks)

b. Explain and illustrate the two different phases/approaches in Long Term Planning (LTP) that are generally considered. (6 marks)

c. List the basic features of Delta Modulation (DM) (3 marks)

Question 4
a. List and explain the fundamental selection criterias that are important for a formal language to be successful. (6 marks)

b. Discuss the overview of network planning. (4 marks)

c. List the most typical task a network planner has to perform to solve a complexity associated with network requirements. (5 marks)

Question 5
a. Discuss the breakdown approach in Long Term Planning (LTP) and Middle Term Planning (MTP) (6 marks)

b. The antenna used for communication, had to be precisely large, if modulation was not presented. Discuss Modulation, its need and advantages. (5 marks)

c. Using a table, state the differences between Code Modulation (PCM), Delta Modulation (DM), Adaptive Delta Modulation (ADM) and Differential Pulse Code Modulation. (4 marks)

Question 6
a. Petri Nets (PN) are a formal modeling technique for the description of concurrent and distributed system behavior. Explain the basic syntax of a traditional PN. (6 marks)

b. Illustrate the different types of modulation with a block diagram. (3 marks)

c. Explain the three type of signals used in modulation process. (6 marks)