ELIZADE UNIVERSITY, ILARA-MOKIN,
ONDO STATE, NIGERIA

**DEPARTMENT OF
MECHANICAL, AUTOMOTIVE AND PRODUCTION ENGINEERING**

**FIRST SEMESTER EXAMINATIONS
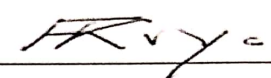2017/2018 ACADEMIC SESSION**

COURSE: GNE 501 – Engineering Economics (3 Units)
CLASS: 500 Level General Engineering
TIME ALLOWED: 2 Hours: 30 Min.
INSTRUCTIONS: Answer any **FOUR** questions

Date: March, 2018

HOD'S SIGNATURE

Question 1
(a) Define Economics in relation to
    i. Wealth
    ii. Welfare
    iii. Growth
(b) Nowadays, understanding of Economics issues has become quite indispensable for all sections in the society. Discuss
(c) Discuss the following Scope of Economic
    i. Economics as a Science and an art
    ii. Positive and Normative Economics
    iii. Deductive and Inductive method of Economy
(d) Explain the following Subject matter of Economics
    i. Traditional Approach
    ii. Modern Approach

Question 2
(a) What is Engineering Economics?
(b) Explain Technological advances in relation to Engineering Economics.
(c) State four concept of Engineering Economics
(d) Engineering economics involves formulating, estimating, and evaluating the economic outcomes when alternatives to accomplish a defined purpose are available. Discuss.
(e) Discuss the following types of economic efficiency
    i. Technical Efficiency
    ii. Economic Efficiency

Question 3
(a) What is simple interest
    (i) Discuss the Present and Future Value
    (ii) Discuss when taking a loan
    (iii) Discuss when paying to Annuities
(b) What is Discounted Cash Flow (DCF) and what are the pitfalls?

(c) If you invest N200,000 in the bank at 5%, compounded yearly, after 5 years what will you have?

(d) You need N100,000 to send your kid through Elizade University. However, he or she won't go to the University for 10 more years, and the University estimates its tuition and other expenses will rise at the rate of 8% per year. Thus in 10 years what will you need to go to Elizade University?

(e) An amount of N2,500 is deposited in a bank paying an annual interest rate of 4.5%, compounded quarterly. What is the balance after 7 years?

Question 4

(a) Discus the term 'Capital Investment Appraisal'
     i. What are the types of Investment?
    ii. What are the common factors to all projects to be evaluated?

(b) Write short note on the following methods of Assessing Relative Profitability
     i. Comparative Cost
    ii. Payback Method
   iii. Return on Investment

(c) The Cash flows for for two alternatives are as follows

Year	A	B
0	-N1000	-N2783
1	+N200	+N1200
2	+N200	+N1200
3	+N1200	+N1200
4	+N1200	+N1200
5	+N1200	+N1200

Based on payback period which alternative should be selected?

(d) Make a present – worth comparison of the equal service machines for which the costs are shown below, if $i\% = 10\%$ per year.

	Type A	Type B
First Cost P	N2,500	N3,500
Annual Operating Cost	900	700
Salvage Value, SV	200	350
Life years	5	5

Question 5

(a) With the aid of sketch, explain break even chart.

(b) Explain Make or Buy decision

(c) State five assumptions that must be made in order to compute a break – even chart.

(d) Suppose, for example, that a firm finds that it can buy from a vendor the electric power unit for the system it produces for N8 per unit. Alternatively, suppose that it can manufacture an equivalent unit for a variable cost N4 per unit. It is estimated that the additional fixed cost in the plant would be N12,000 per year if the unit is manufactured. What would be the break-even units per year for which the cost of the two alternatives will break – even.

(e) Assume that small electronic computer is needed for data processing in an engineering office. Suppose the computer can be leased for N50 per day, which includes the cost of maintenance. Alternatively, the computer can be purchased for N25,000.

The computer is estimated to have a useful life of 15 years with salvage value of N4,000 at the end of that time. It is estimated that annual maintenance costs will be N2,800. If the interest rate is 9% and it costs N50 per day to operate the computer, how many days of use per year are required for the two alternatives to break-even.

Question 6

(a) Are the people evaluated by the content of their character or by the beauty of their skin? If it is the latter, then what impacts our judgment of one's beauty?

(b) Researchers consistently have demonstrated that attractiveness judgment is affected by context. Discuss

(c) Discuss in relation to the present Research in attractiveness
- Self-rating of attractiveness
- Face-to-face interactional context rather than rely on passive rating of photographs
- Examined whether the observed rating effects would generalize to other attributes of the rater that is intelligence.

(d) State the methods adopted in judging attractiveness

(e) State seven steps in compiling an investment proposal.