# EKITI STATE UNIVERSITY, ADO-EKITI
## EMMANUEL ALAYANDE COLLEGE OF EDUCATION, OYO
## IN AFFILIATION WITH EKITI STATE UNIVERSITY
## FULL-TIME DEGREE PROGRAMME

### 2018/2019 SECOND SEMESTER EXAMINATION

**COURSE CODE:** EDU 202 **UNITS:** 02
**COURSE TITLE:** SOCIOLOGY OF EDUCATION **TIME:** 2 HOURS
**INSTRUCTIONS:**

*(i)* ***Answer three questions. Question ONE is compulsory.***
*(ii)* ***Do not bring your handset into the examination room and do not write anything on this question paper.***
*(iii)* ***Do not write your name on the Answer Sheet.***

1. (a) Give concise definition of Sociology of Education
   (b) What are the rationale for the study of Sociology of Education.
   (c) Explain the following sociological concepts:
   (i) Culture (ii) Norms (iii) Role (iv) Elite (v) Ascribed Role

2. (a) What is Social Mobility?
   (b) Highlight the factors that enhance Social Mobility.

3. (a) What is Socialization?
   (b) Explain the role of the family as an agent of socialisation.

4. Discuss Equality in Educational Opportunities.

5. (a) What is a Profession?
   (b) Identify and discuss briefly the characteristics of a Profession.

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### 2018/2019 SECOND SEMESTER EXAMINATION

**COURSE CODE:** CSC 204 **UNITS:** 03
**COURSE TITLE:** INTRODUCTION TO NUMERICAL ANALYSIS **TIME:** 2½ HOURS
**INSTRUCTIONS:**

*(i)* ***Answer question ONE and any other THREE questions..***
*(ii)* ***Do not bring your handset into the examination room and do not write anything on this question paper.***
*(iii)* ***Do not write your name on the Answer Sheet.***

1. (a) What do you understand by each of the following?
(i) Numerical analysis (ii) Interpolation (iii) Extrapolation
(iv) Differential equation (v) Lagrange Polynomial

(b) Use divided differences method to construct the polynomies interpolating the data given below:
(i) (1, 6), (2, 11), (3, 18), (4, 27)
(ii) (1, -3), (3, 13), (4, 21), (6, 1)

(c) Apply Runge-kutta of order three (3) to find an approximate value of $y$ when $x = 0$ given that $\frac{dy}{dx} = x + y$ and $y = 1$ when $x = 0$ take $h = 0.2$ as your step-size.

2. (a) What are the major reasons for making use of computer programs in numerical analysis?

(b) Use Runge-kutta of fourth order to solve for $y$ if $x = 0.1, 0.2$ and $0.3$ given that $y^1 = xy + y^2$ when $y(o) = 1$

3. (a) Compute the real root of this given non-linear equation $x^2 - 2x - 5 = 0$, using Newton-Raphoon method repeatedly three times.

(b) Find the root of the equation $2x - log_{10}x = 7$ which lies between 3.5 and 4, using Regular Falsi method twice.

4. (a) State three central concept of numerical analysis and four major areas that this numerical analysis is applicable in science.

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### 2018/2019 SECOND SEMESTER EXAMINATION

**COURSE CODE:** CSC 202 **UNITS:** 03
**COURSE TITLE:** DATA STRUCTURE AND ALGORITHM **TIME:** 2½ HOURS
**INSTRUCTIONS:**

*(i) Answer question one (1) and any other three (3) questions.*
*(ii) Do not bring your handset into the examination room and do not write anything on this question paper.*
*(iii) Do not write your name on the Answer Sheet.*

1. Consider the linear arrays *XXX* (10: 10) *YYY* (1935, 1985), 222 (35).
   (a) Find the number of elements in each array
   (b) Suppose Base (YYY) = 400 and W = 4 words per memory cell for YYY. Find the address of *YYY* (1942), *YYY* (1977) *and YYY* (1984).
   (c) Write an algorithm to insert an item into a linear array.
   (d) Suppose the following numbers are stored in an array A:
   42, 61, 37, 95, 76, 33, 23, 67. Show steps how bubble sort algorithm can be apply to sort the array.

2. (a) Write an algorithm for Binary Search.
   (b) Let DATA be the following sorted 13-element array.
   DATA: 21, 32, 40, 43, 50, 54, 65, 70, 76, 87, 90, 98, 109
   Apply Binary search algorithm to search for 100.

3. (a) Write an algorithm to insert and delete an item from the STACK.
   (b) Consider the following stack of city names.
   STACK: London, Berlin, Rome, Paris, _____, _____

4. Describe the stack as the following operations take place.
   (i) PUSH (STACK, Athens)
   (ii) POP (STACK, ITEM)
   (iii) POP (STACK, ITEM)
   (iv) PUSH (STACK, Madrid
   (v) PUSH (STACK, MOSCOW)
   (vi) POP (STACK, ITEM)
   (a) Write an algorithm to delete an ITEM from the linear Array
   (b) Consider the following queue where QUEUE is allocated 6 memory cells
   FRONT = 2, REAR = 5

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### 2018/2019 SECOND SEMESTER EXAMINATION

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   (v) PUSH (STACK, MOSCOW)
   (vi) POP (STACK, ITEM)
   (a) Write an algorithm to delete an ITEM from the linear Array
   (b) Consider the following queue where QUEUE is allocated 6 memory cells
   FRONT = 2, REAR = 5

QUEUE: _____ London, Berlin, Rome, Paris, _____
Describe the queue, including FRONT and REAR, as the following operations take place.

(i) Athens is added
(ii) two cities are deleted
(iii) Madrid is added
(iv) Moscow is added
(v) three cities are deleted
(vi) Oslo is added

5. (a) Write an algorithm for Bubble sort

(b) Consider the following deque where DEQUE is allocated 6 memory cells
LEFT = 2, RIGHT = 5
DEQUE: _____, London, Berlin, Rome, Paris, _____
Describe the deque, including LEFT and RIGHT, as the following operations take place

(i) Athens is added on the left
(ii) Two cities are deleted from the right
(iii) Madrid is added on the left
(iv) Moscow is added on the right
(v) Two cities are deleted from the right
(vi) A city is deleted from the left
(vii) Oslo is added on the left

6. Suppose a company keeps a linear array YEAR (1920:1970) such that YEAR [K] contains the number of employees born in year K. Write a module for each of the following tasks:

(i) To print each of the years in which no employee was born\
(ii) To find the number NNN of years in which no employee was born
(iii) To find the number N50 of employees who will be at least 50 years old at the end of the year. (Assume 1984 is the current year).
(iv) To find the number N< of employees who will be at least <years old at the end of the year (Assume 1984 is the current year).

(b) Use the improved Euler method to find approximate values of the equation $\frac{dy}{dx} = x + 3y$ subject to $y(o) = 1$ when $x = 0.3$.

5. (a) Use Euler's method to numerically solve $y^1 = -2x^3 + 12x^2 - 20x + 8.5$ from $x = 0$ to 1 with 0.5 as step-size.

(b) If equation $\frac{dy}{dx} = x^2 + y$ at $y(o) = 1$, use Rungels formula of second order to determine $y_1$, taking $h = 0.1$.

6. (a) Find a solution of $x^3 + x - 1 = 0$ by iteration method six times write your answer in three significant figures.

(b) Write a subroutine program to implement Runge-Kutta formula of order four (4).

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**FULL-TIME DEGREE PROGRAMME**
**2018/2019 SECOND SEMESTER EXAMINATION**

**COURSE CODE: CSC 206** **UNITS: 03**
**COURSE TITTLE: HUMAN COMPUTER INTERACTION** **TIME: 2½HOURS**

**INSTRUCTIONS:**
**(i) Attempt question one (1) and any other three (3) questions**
**(ii) Do not bring your handset into the examination room, and do not write anything on this question**
**(iii) Do not write your name on the answer sheet**

1. (a) What is PACT analysis in HCI
   (b) Explain in detail element of PACT analysis
   (c) What are the PACT analyses that are possible for cell phone?
   (d) Explain any five (5) human factor evaluation methods of interface

2. (a) explain briefly graphical user interface
   (b) Mention five (5) discipline that contribute to HCI
   (c) Explain briefly two (2) types of design

3. (a) Why study Human Computer interaction?
   (b) What differentiate bad use interface design from good design?

4. (a) How does making a call differ when using cell phone
   (b) perform a PACT analysis of a website

5. (a) Define Human Computer interaction
   (b) Explain the evolution of interface
   (c) Explain briefly Voice User Interface

6. (a) What is an interaction design?
   (b) Explain briefly factors that influence user experience
   (c) What are the effects of poor design?

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## FULL-TIME DEGREE PROGRAMME

### 2018/2019 SECOND SEMESTER EXAMINATION

**COURSE CODE:** CSC 208 **UNITS:** 03
**COURSE TITLE:** HTML Technology **TIME:** 2½ HOURS
**INSTRUCTIONS:**

*(i)* ***Attempt question ONE and any other THREE questions..***
*(ii)* ***Do not bring your handset into the examination room and do not write anything on this question paper.***
*(iii)* ***Do not write your name on the Answer Sheet.***

1.a. Explain briefly cascading style sheet
b. write a snippet html code on how to create a login form with email, password and a submit button.
c. Differentiate between internet and World Wide Web
d. create a menu list of a websites
e. Describe HTML tags
2.a. differentiate between the following css
i. inline css
ii. internal css
iii. external css
2.b. Analyse the html snippet code below
<img src= "pro_eacoed.jpeg" alt= "provost image" style =width: 500px ; height: 600px>
3a. write out 20 html tag and their functions
3b. Define web form
4. a. Define the following term i. Web pages ii. Web browser iii. Websites iv. Web addresses
4b. Describe HTML coding structure
4c. What is java script.
5a. Examine briefly history of HTML
b. Create a table with 2 columns and 3 rows
c. b. What are the services provided by internet?
6a. briefly examine the history of internet
b. What are the advantages of java script?
c. write a snippet code on how to insert audio and video in a web page

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## FULL-TIME DEGREE PROGRAMME
## 2018/2019 SECOND SEMESTER EXAMINATION

**COURSE CODE:** CSC 210 **UNITS: 02**
**COURSE TITTLE:** INFORMATION AND COMPUTER ETHICS **TIME: 2HOURS**
**INSTRUCTIONS:**
**(i) Attempt question one (1) and any other two (2) questions**
**(ii) Do not bring your handset into the examination room, and do not write anything on this question**
**(iii) Do not write your name on the answer sheet**

1a. Define Computer Ethics?
1b. Outline any two (2) objectives of computer ethics?
1c. Identify any two (2) associations in Nigeria that regulate professional conducts in computer and information technology?
1d. International Association of Engineers (IAENG), is a professional organization for engineers that has professional associations in areas related to computers and information technology, identify ten (10) of these associations in related areas?
1e. Discuss the following important moral issues regarding the use of computers in our Society?
(i) freedom of expression (ii) equity and accessibility

2a. Identify areas of focus of Computer ethics in each of the following professional programs?
(i) Law (ii) Computer science (iii) Education
(iv) Library science (v) Information and communication technology
2b. Discuss any four (4) types of privacies in information and computer ethics

3. Discuss the following common unethical behaviours relating to information technology that are perpetrated by students and staff of Ekiti State University?
(i) Plagiarism
(ii) Improper use of computer resources
(iii) Copyright and Software theft
(iv) Hacking

4a. Discuss the following components of policy formulation in computer ethics?
(i) International Treaties and Agreements
(ii) Professional Codes of Conduct
(iii) Corporate Policies
(iv) Standards of Good Practice
(v) Personal Standards

5a. What is Intellectual Property?
5b. Discuss the following legal issues concerning intellectual property :
(i) Copyright
(ii) Patent
(iii) Trade Secret

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## 2018/2019 SECOND SEMESTER EXAMINATION

**COURSE CODE:** MAT 204 **UNITS: 02**
**COURSE TITLE:** LINEAR ALGEBRA II **TIME: 2HOURS**
**INSTRUCTIONS:**
(i) Attempt three (3) questions
(ii) Do not bring your handset into the examination room, and do not write anything on this question
(iii) Do not write your name on the answer sheet

1. (a) Define the following
   (i) A system of linear equation
   (ii) Homogenous system
   (b) Solve the following system of equations by matrix method
   $x + 2y + 3z = 10$
   $2x - 3y + z = 1$
   $3x + y - 2z = 9$
   (c) Solve the following system of equations by Gaussian elimination method
   $x_1 - 3x_2 - 2x_3 = 6$
   $2x_1 - 4x_2 - 3x_3 = 8$
   $-3x_1 + 6x_2 + 8x_3 = -5$

2. (a) Given a homogenous system of m linear equations in n unknowns, represented in the matrix form AX=0 where Rank of A= n, state the condition for the system to have:
   (i) a trivial solution
   (ii) a non-trivial solution
   (b) Show that the system;
   $x_1 + x_2 - x_3 = 0$
   $2x_1 + 4x_2 - x_3 = 0$
   $3x_1 + 2x_2 + 2x_3 = 0$, has a trivial solution
   (c) Solve the Echelen system
   $2x_1 - 3x_2 - 6x_3 - 5x_4 + 2x_5 = 7$
   $x_3 + 3x_4 - 7x_5 = 6$
   $x_4 - 2x_5 = 1$

3. (a) Find the dimension and a basis for the general solution W of the homogenous system.
   $x_1 + 2x_2 - 3x_3 + 2x_4 - 4x_5 = 0$
   $2x_1 + 4x_2 - 5x_3 + x_4 - 6x_5 = 0$
   $5x_1 + 10x_2 - 13x_3 + 4x_4 - 16x_5 = 0$

(b) Consider the following two bases of $R^3$

$E = \{\emptyset_1, \emptyset_2, \emptyset_3\} = \{(1,0,0), (0,1,0), (0,0,1)\}$

$S = \{U_1, U_2, U_3\} = \{(1,0,1), (2,1,2), (1,2,2)\}$

Find the change of basis matrix P from the basis E to the basis S.

(c) Let $U_1 = (1,2,4)$, $U_2 = (2,-3,1), U_3 = (2,1,-1)$ $in$ $R^3$

Show that $U_1, U_2, U_3$ are orthogonal, and write v as a linear combination of $U_1, U_2, U_3$ where $(a) = (7,16,6)$, $(b)$ $(3, 5, 2)$

4. (a) Find its characteristics equation

Given matrix A $\begin{pmatrix} 1 & 1 & 2 \\ 0 & 2 & 2 \\ -1 & 1 & 3 \end{pmatrix}$

(a) Find its characteristics equation

(b) Verify that A satisfies the Cayley-Hamilton theorem

(c) Use the Cayley-Hamilton theorem to evaluate $A^4$

5. (a) Find the symmetric matrix that corresponds to quadratic form

$q(x,y,z) = 3x^2 + 4xy - y^2 + 8xz - 6yz + z^2$

(b) Find the quadratic form q(x) that corresponds to $A = \begin{pmatrix} 5 & -3 \\ -3 & 8 \end{pmatrix}$

(c) Given a symmetric matrix $A = \begin{pmatrix} 2 & -4 & 8 \\ -4 & 1 & 7 \\ -8 & 7 & 5 \end{pmatrix}$

Find a non-singular matrix P such that $P^TAP$ is diagonal matrix. Find the signature.

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**FULL-TIME DEGREE PROGRAMM[illegible]**
**2018/2019 SECOND SEMESTER EXAMINA[illegible]**

**COURSE CODE:** EDU 200 (COMPUTER SCIENCE) **UN: 0**
**COURSE TITTLE:** METHOD COURSE I **TI: 2H[illegible]S**
**INSTRUCTIONS:**
**(i)** Attempt question one (1) and any other two (2) q[illegible]us
**(ii)** Do not bring your handset into the examination [illegible]nd not write anything on this question
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1. Write a lesson plan to teach a topic from any subject in J.S.S. syllabus.

2. Briefly explain the following teaching method
   (i) Lecturer method (ii) Demonstrating method

3. What is discussion method of teaching? State seven (7) advantage[illegible] limitations of discussion method of teaching

4. What is Computer Assisted Learning (CAL) and Computer Managed Instr[illegible]ion State ten (10) reasons why students prefer CAL.

5. Briefly explain the following types of CAL
   (i) Drill and practice
   (ii) Problem solving
   (iii) Information Retrieval and Browsing
   (iv) Simulation