Lumbini City College

Mid Term Examination 2081

Bachelor in computer applications Fu

Mathematics II Tir

Semester II

Candidates are required to give their answers in their own words as far as possible.

Group -A [5x1=5]

Choose the correct answers from the following questions

1. Which of the following is the correct value of $\lim_{x\to 2}(\frac{x^2-4}{x^2+4})$?
   a. 1 b. 0 c. $-\frac{1}{2}$ d.
2. If $y^3=x^2$ then $\frac{dy}{dx}$ is
   a. $\frac{2x}{y^3}$ b. $\frac{2x}{3y}$ c. $\frac{2x}{3y^2}$
3. The derivative of $\frac{1-\cos 2x}{\sin 2x}$ is
   a. sec^2x b. tan x c. ln(cosX)
4. The correct value of of $\lim_{x\to e}(\frac{\log x-1}{x-e})$ is ?
   a. 1 b. e c. $-\frac{1}{e}$ d. $\frac{1}{e}$
5. The correct value of of $\lim_{x\to \frac{\pi}{2}}(\frac{\sec x}{1+\tan x})$?
   a. 1 b. 0 c. ∞ d.

Group- B [3x5= 15]

Attempt Three questions;

11. If a function f(x) is defined as:

$$F(x) = \begin{cases} x^2+2 & \text{if } x < 1 \\ 2x+1 & \text{if } x > 1 \\ 3 & \text{if } x = 1 \end{cases}$$

Discuss the continuity of the function at x= 1.

12. Find the derivative of the function $f(x) = \sqrt{cosec\ x}$ by using first principle.

13. Using L'Hospital rule evaluate of $\lim_{x\to \frac{\pi}{2}}(\frac{\cot x}{cosec\ x})$

Group – C

Attempt any one question: [1x10=10]

18. Find the derivative of $y = \frac{1+\cos x}{1-\cos x}$

19. Find the derivative of $y = \frac{\sin x}{1+\cos x}$

Group – B

Attempt any **FIVE** questions. [5 x 5 = 25]

6. A basic computer has an instruction format as follows,

I	Opcode=3	Register code=4	Address= 16

   a. Determine the memory size and its data bits for the computer.
   b. How many registers does the computer has?
7. Differentiate between direct and indirect addressing modes with suitable example.
8. Explain the CPU organization.
9. A digital computer has a common bus system for 16 registers of 32 bits each. The bus is constructed with multiplexers.
   a. How many selections lines are there in each multiplexers?
   b. What size of multiplexers are needed?
   c. How many multiplexers are there in the bus?

10. The 8-bits register AR, BR, CR and DR initially have the following values:

AR= 11110010 CR= 10111001
BR= 11111111 DR= 11101010

Determine the 8-bit values in each registers after the execution of the following sequence of micro-operations.

$AR \leftarrow AR+BR$
$CR \leftarrow CR \wedge DR$, $BR \leftarrow BR+1$
$AR \leftarrow AR-CR$

11. A computer uses a memory unit with 256K words of 32 bits each. A binary instruction code is stored in one memory. The instruction has four parts; an indirect bit, an operation code, a register code part to specify one of 64 registers and an address part?
   a. How many bits are there in the operation code, the register code part, and the address part?
   b. Draw the instruction word format and indicate the number of bits in each part.
   c. How many bits are there in the data and address input of the memory?

Group - C

Attempt any **ONE** Questions. [1*10=10]

12. Evaluate the arithmetic expression; X=(A+B)*(C-D) using
   a. Zero address instruction format (Stack Organized CPU)
   b. One address instruction format (Single Accumulator Organized CPU)
   c. Three address instruction format (General Register Organized CPU)
   d. Two address instruction format (General Register Organized CPU)

20. Explain the different micro-operations.

LUMBINI CITY COLLEGE

Affiliated to

TU

2081

Bachelor Level / second-semester / Science — **Full marks: 40**

Computer Science and Information Technology (CACS155)) — **Pass marks: 16**

(Microprocessor and Computer Architecture) — **Time: 2 hours**

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

GROUP – A

Choose the correct answer. [1 x 5 = 5]

1. A basic computer has a 16 bits instruction as '0000000000010000'what is the effective address referenced
   a. 32
   b. 16
   c. 64
   d. None of the above
2. An address register contain 16-bits address, what is the memory size of the system?
   a. 64 KB
   b. 64 MB
   c. 64 GB
   d. 64 TB
3. A general computer system uses a common bus system constructed using multiplexers in which the registers with in it are of 32-bits. Determine the numbers of selection lines used for the multiplexers?
   a. 4
   b. 5
   c. 6
   d. None
4. A register R contains 8-bit data as "10110011", determine the new value after the micro-operation, R← $CIL(R)$
   a. 11010011
   b. 01100111
   c. 01101111
   d. None
5. An instruction LDA is used in a certain CPU organization, which is the address formant being used
   a. 0-address instruction
   b. 1- address instruction
   c. 2-address instruction
   d. 3-address instruction

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Lumbini City College

Mid-Term Examination 2081

BCA II
English II
CAEN153

FM :30
PM: 12
Time:1.5Hrs

Group- A

Attempt all the questions: [1x5=5]

1. In 'Who can Replace a Man? the tractors have.....brain.
a. Class 3 b. Class 4 c. Class 5 d. Class 6
2. The world of science fiction is a world that.....
a. Could never be b. Could be c. Seems improbable d. Seems fantastic
3. Whose mother was ill in 'Billennium'?
a. John's b. Rositter's c. Helen's d. Judith's
4. In the story "The Land Ironclads", the young lieutenant lay beside the.....
a. War until b. War correspondent c. The defender general d. Young engineers
5. What does Victorian wardrobe symbolize in Billennium ?
a. private world b. wealth c. friendship d. anger

Group B

Attempt any five questions. [5x5=25]

1. How can you say that the stories "The Metal Man" and "Billennium" are science fiction? Illustrate.
2. Who can Replace a Man? Convinces its readers the need of emotion than reason and logic to run the world smoothly. Do you agree?
3. What are the features of science fiction, discuss on the basis of the stories you have read.
4. Discuss Billennium by J.G.Ballard as a story of for future where it is not war, but over population that threatens the human race.
5. 'The Land Ironclads' carries the theme 'The modern world is in conflict with the primitive past.' Elaborate.
6. Write an essay about the disadvantages of population and come to a conclusion mentioning the possible energy crisis faced by the people in the capital city?

THE END

LUMBINI CITY COLLEGE

Faculty of Humanities & Social Sciences

BCA Programme

Mid Term Examination 2081

Bachelor in computer application | **F.M=30**
Course Title: C-programming | **pass mark: 12**
Code No: CACS 151 | **Time: 1 hr 30 min**
Semester : II

Group A

Multiple choice questions. **5**

1. Which of the following doesn't require an & for the input in scanf()?
   a. Char name[10]; b. int name[10]; c.float name[10]; d. double name[10]
2. What is the memory size of float data type in c?
   a. 4 byte b. 8 byte c. depends on the system/compiler. d) cannot be determined.
3. which statement can be used to select one of many code block to be executed?
   a. Default b. break c. when d. switch
4. Which language was before C .
   a. A b. B c. BCPL d. c++
5. Which statement is used to stop a loop?
   a. Break b. exit c. void d. stop

Group B

Brief answer questions (any three). **3x5=15**

i. Differentiate between while loop and do while loop. Write a c program to find the sum of n^{th} digit number given by user.

ii. Write a c program that takes from user an arithmetic operator ('+', '-', '*', or '/') and two operands. Perform the corresponding arithmetic operation on the operands using switch statement.

iii. What is one dimensional array? How it is initialized? Write a c program to find the sum of two matrix of order mxn.

iv. What is recursive function? write example program for it.

Attempt any one questions **10**

i. Define SDLC. Explain software process model.

ii. Explain compilation and execution process in c programming with the help of flowchart.

Goodluck