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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, Jan./Feb. 2021

Course: Computer Programming
Program: B.Sc. Geology
Course Code: MATH1035G

Semester: I
Time 03 hrs.
Max. Marks: 100

SECTION A

- 1. Each Question will carry 5 Marks**
2. Instruction: Complete the statement / Select True or False/ Write direct answers asked

S. N.	Question	CO
Q1	Name any five system calls used in Linux.	CO1
Q2	Name the command used for following: (1 mark each) (a) To see the help pages in Linux. (b) To change the access mode of a file. (c) To search a file for particular pattern of characters, and display all lines that contain that pattern. (d) To sort a file, arranging the records in a particular order. (e) To add user accounts to your system.	CO1
Q3	a) Name any five format specifiers used in C printf() function. (2.5 marks each) b) A _____ is a variable that refers to the address of a value.	CO2
Q4	a) If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed? a) ABCD b) DCBA c) DCAB d) ADCB b) A circular queue is implemented using an array of size 10. The array index starts with 0, front is 6, and rear is 9. The insertion of next element takes place at the array index. a) 0 b) 7 c) 9 d) 10 (2.5 marks each)	CO3
Q5	a) Fill in the following blanks: Stack can be implemented using _____ and _____. b) Indicate True or False for each of the following statements: i) Algorithm is not the component of data structure. ii) In Queues, elements are deleted at the Front end. (2 + 3) marks	CO3
Q6	List five operator types used in MATLAB.	CO4

SECTION B

- 1. Each question will carry 10 marks**
2. Instruction: Write short / brief notes

Q7	a) Enlist the basic components of Linux. (5 + 5) marks b) Explain the term CLI along with its advantages and disadvantages.	CO1
Q8	What is the difference between call by value and call by reference in C? Explain with example.	CO2
Q9	Given linked list: 1->2->3->4->5->6 (5 + 5) marks (a) Explain with justification the output of myfun for given Linked List with first node as head? void myfun (struct node* head) { if(head == NULL) return; myfun (head->next); printf("%d ", head->data); } (b) Write a piece of code for a function that prints alternate nodes of the given Linked List, first from head to end, and then from end to head. If Linked List has even number of nodes, then skips the last node. The output should be 1 3 5 5 3 1.	CO3
Q10	(a) What is a Queue, how it is different from the stack and how is it implemented? (5 + 5) marks (b) What are the various operations that can be performed on different Data Structures?	CO3
Q11	Suppose we have: a = [7 23 14 15] b = [2 5 7 14] c = 10 d = 20 Write the output of following MATLAB commands: union(a, b) intersect(a, b) setdiff(a, b) bitand(c, d) bitor(c, d) bitxor(c, d) bitshift(c, 2) bitshift(c,-2) c/d c\d	CO4
SECTION C		
1. Each Question carries 20 Marks.		
2. Instruction: Write long answer.		
Q12	(a) What are memory management functions in MATLAB? Explain handle graphics in MATLAB. (b) Write a MATLAB program for any 2-D plot graph with title, legend, line color, and (x-y) labels. (10 + 10) marks OR (a) Explain about MATLAB API. Write any eight MATLAB commands with their description related to Array, Matrix, and Vectors. (b) Write a MATLAB program for find the largest among three numbers. Note that you have to take input of three numbers and display the output. (10 + 10) marks	CO4