Diplete – ET/CS (NEW SCHEME) - Code: DE53/DC53

Subject: COMPUTER FUNDAMENTALS & C PROGRAMMING

Time: 3 Hours

JUNE 2011

Max. Marks: 100

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions, selecting TWO questions from part A and THREE questions from part B. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following:

(2×10)

a. The ASCII code of the letter E is

(A) 1000110	(B) 1000101
(C) 1001001	(D) 1000111

b. A COBOL program is divided into ______ divisions

(A) 4	(B) 3
(C) 5	(D) 6

c. A language directly understandable by a computer

(A) Assembly language	(B) High level language
(C) Machine language	(D) None

d. Megabytes (MB) memory storage equal to

(A) 2^{21}	(B) 2^{20}
(C) 2^{18}	(D) 2^{19}

e. Which operator has the lowest priority?

(A) &	(B) +
(C) <=	(D) ∥

f. Identify the correct statement given double X;

(A) scanf("%d", &X);	(B) scanf("%f", X);
(C) scanf("%d", *X);	(D) scanf("%1f", &X);

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g. A block is enclosed with a pair	g. A block is enclosed with a pair of		
(A) {} (C) []	(B) () (D) <>		
h. One-dimensional array is know	/n as		
(A) vector(C) matrix	(B) table(D) an array of arrays		
i. How many main() functions ca	n be defined in a 'C' program?		
(A) 1 (C) 3	(B) 2(D) any no of times		
j. The declaration float *a[5]; is			
(A) an ordinary array(C) an array of pointer	(B) a pointer to an array(D) pointer to array element		

PART A		
Answer any TWO questions. Each question carries 16 marks.		

Q.2	a.	What is computer? List and explain some important characteristic computer.	s of a (6)
	b.	Convert the following numbers into binary numbers (i) $(174.50)_{10}$ (ii) $(DF2 - 7C)_{16}$ (iii) $(477.75)_8$	(6)
	c.	Convert binary number $(111111011.101)_2$ into hexadecimal numb decimal number.	er and (4)
Q.3	a.	What is a printer? Explain the commonly used types of printers.	(8)
	b.	Define operating system. What facilities are provided by an operating to a user?	system (5)
	c.	Write a short note on Java.	(3)
Q.4	a.	What is a microprocessor? What is the purpose of the address and data a microprocessor?	bus of (7)
	b.	 Write short note on the following:- (i) Electronic mail (ii) FTP (iii) The World Wide Web. 	(3 × 3)

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PART B Answer any THREE questions. Each question carries 16 marks.

Q.5	a.	Name and describe the four basic data types in 'C'. (6)	
	b.	Describe the use of conditional operator to form conditional expressions. How is a conditional expression evaluated? (6)	
	c.	What is the purpose of the <i>getchar</i> function? How is it used within a 'C' program? (4)	
Q.6	a.	 Write a loop that will calculate the sum of every third integer, beginning with i = 2. (i.e. calculate the sum 2+5+8+11+) for all value of i that are less than 100. Write the loop in three different ways (i) using a <i>while</i> statement (ii) using a <i>do-while</i> statement (iii) using a <i>for</i> statement. 	1
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	b.	Write the syntax of switch case structure. (4)	
	c.	What is the purpose of the break statement? Within which control statements can the break statement be included? (6)	
Q.7	a.	What is array initialization? What happens if the number of values in the initializer is less than the size of array? (4)	
	b.	Write a program which adds two given matrices. (8)	
	c.	What is string? Differentiate between <i>gets()</i> and <i>scanf()</i> using %s conversion specification. (4)	
Q.8	a.	What is a function? What is the basic difference between a user defined function and a built in function? (4)	
	b.	Write a program that calculates the power of x raised to y (x^y) using recursion. (8)	5
	c.	What are the advantages and disadvantages of call by value? (4)	
Q.9	a.	What is a pointer variable? How do you declare a pointer variable? (4)	
	b.	Write a program that accesses the array element using pointer variable. (6)	
	c.	What is meant by file opening? How is a file closed? (4)	
	d.	What is FILE? (2)	