Code: AE102/AC102/AT102 Subject: COMPUTER CONCEPTS & C PROGRAMMING

AMIETE - ET/CS/IT $\{NEW\ SCHEME\}$

Time:	3 H	Iours	JUNE 2	015		Max. Ma	rks: 100
		WRITE YOUR ROL ATELY AFTER RE			- '	ON EACH PAC	GE .
 Que the The the Out que	esti sp e an co t o esti	here are 9 Question on 1 is compulsory ace provided for it inswer sheet for the Commencement of the for the remaining Econ carries 16 marks equired data not exp	and carries 20 r n the answer bo Q.1 will be collect examination. JGHT Questions.	ok sup eted by ns ans	plied and nowher the invigilator af wer any FIVE	re else. fter 45 minutes Questions. Ea	of
Q.1		hoose the correct or			-		(2×10)
	a.	OCR stands for					
		(A) Open Character(C) Output Comput		` ′ 1	otical Character Roone of these	ecognition	
	b.	Which of the follow	ving is a valid Oc	tal num	iber?		
		(A) F03 (C) 125		(B) 99 (D) N	one of these		
	c. Typically an Operating System is classified as:						
		(A) System softwa(C) Both (A) & (B)		_	plication software one of these	;	
	d.	Which of the follow	ing does not repr	resent a	variable?		
		(A) xy1 (C) %		(B) m (D) H	_width eight		
	e.	ispunct(c) does which	ch of the following	ng?			
		(A) Determines who(B) Determines who(C) Determines who(D) None of these	ether c is a printa	ble cha	racter		
	f.	Which of the follow	ing is the correct	tstatem	ent for computing	g logical AND?	
		(A) ((a <b) &="" (x="">y) (C) (a<b) (x="" and=""></b)></b)>			(solution) (solution) $(x>y)$ (solution) $(x>y)$ (solution) $(x>y)$		
	g.	The structured prog		ach sug	gests avoiding the	e use of which	of
		(A) goto		(B) ex	it		

(**D**) sizeof

(C) continue

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	n.	what would be the value of m and y $m = 5$; $y = ++m$;	after execution of following statement	is:
		(A) $m = 5$ and $y = 5$ (C) $m = 6$ and $y = 5$	(B) m = 5 and y = 6 (D) m = 6 and y = 6	
	i.	Which of the following multi-dim realizing a 2x3 matrix?	ensional array declaration is correc	t for
		(A) int arr[2][3]; (C) int arr[3, 2];	(B) int arr[3][2]; (D) int arr[2], arr[3];	
	j.	"Call by reference" function call use	s the following type of parameter:	
		(A) Pointer variables(C) Address variables	(B) Integer variables(D) Memory variables	
		Answer any FIVE Questions Each question car	-	
Q.2	a.	Classify computers in different cate and processing speed.	gories depending on the computing a	bility (6)
	b.	Differentiate between System softw	are and Application software.	(5)
	c.	What is scanner? What are the diff produce digitized images?	erent types of scanners that can be us	ed to (5)
Q.3	a.	. Write the BCD equivalent of decimal digits $0-9$.		
	b.	What is an operating system? Wh systems?	at are the various categories of oper	rating (6)
	c.	Differentiate memory units on the memory.	basis of Primary memory and Second	ndary (6)
Q.4	a.	Define algorithm. Write an algorithm	n to find the factors of a given number	r. 2+4)
	b.	Describe the structure of a C progra	m.	(5)
	c.	Explain the process of compiling under UNIX environment.	and linking multiple source program	files (5)
Q.5	a.	Write various data types support examples.	rted in C programming language	with (4)
	b.	What is variable? What are the rule name?	s must be followed while naming a var	riable (4)
	c.	What is an unsigned integer constacton constant as unsigned?	nt? What is the significance of declar	ring a (4)

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d.	Given the real number $y = 98.7654$,	write the p	orintf statemen	it to get the	output
	as:				(4)

- (i) 98.77
- (ii) 0098.77
- (iv) 9.88e+001
- (v) 9.876540e+001
- Q.6 a. Given the values of the variable x, y and z, write a program to rotate their values such that x has the value of y, y has the value of z, and z has the value of x.(5)
 - b. What is the use of bitwise operators? Describe any two bitwise operators with example. (5)
 - c. Explain the following with help of example: (6)
 - (i) Comma operator
 - (ii) sizeof operator
- Q.7 a. What is function declaration? What are the places in a program where a function declaration can be declared? Is prototype declaration is essential? Give reason. (2+2+2)
 - b. What is recursion? Write a C program to calculate X^Y using recursion where values of X and Y are entered through keyboard. Don't use pow() function. (6)
 - c. Write a function prime that returns 1 if its argument is a prime number and returns zero otherwise. (4)
- Q.8 a. Given a number, write a program using while loop to find the sum and reverse the digits of the number where the number is user input. For example, if the number entered is "1234" the sum would be (1+2+3+4) and reverse of the number should be written as 4321.
 - b. Explain the following with examples:
 - (i) while statement
 - (ii) if else ladder statement
 - (iii)continue statement
 - (iv) The?: operator

 $(2^{1/2} \times 4)$

- **Q.9** a. Using multidimensional array, write a program in C to sort a list of names in alphabetical order. (8)
 - b. Write a function that accepts two strings str1 and str2 as arguments and finds which of the two is alphabetically greater (without using the library functions). The function should return 1 if str1 is greater than str2, 0 if str1 is equal to str2, and -1 if str1 is smaller than str2. (8)