[44|A-6] Sardar Patel University

M. Sc. (Third Semester) Examination Friday, October 28, 2016

Course No. PS03EMTH24: CPro	peramming and Mathematical Alamida Y
Time: 02 00 n m to 01 00	s animing and Mainematical Algorithms II
Time: 02.00 p.m. to 04.00 p.m.	Maximum marks: 3

Note: Figures to the right indicates marks.

1	l. (Choose	appropriate answer to the question from the given options.	E/
	i) Si	appose float *a, c; is a type declaration. Then which of the following is true?	[:
		(a		
	ii	i) _{Suj}	ppose float *a, aa; and &a is 3246. If $a = &aa + 5$; then the content of a is	
		(a)		
	ii		ich of the following is not valid first line of a function? (d) none of these	
		(a)	1 +1aa4 1717 0 \	
		(c)	floot (Gant X)	
	iv	` '	ich of the following is true? (d) float f()	
		(a)		
		(b)	One can define another function within a function definition.	
		(c)	One cannot call a function within another function definition	
		(d)	One can call a function within its function definition	
	v)		d f(int x) I static int a = 2.	
	.,	cor	d f(int x) { static int $a = 2$; $a = a + x$;} void main(){f(2); f(4); f(5);} what is the stant of a within the function f after the execution of the program?	
		(a)	4 (b) 7 () 12	
2.	Aı	• /	any THREE of the following: (c) 13 (d) none of these	
	a)	Wh	nat is an external variable? How does it declare? How does it carry values?	[6]
	b)	Wr	ite the general form of a function definition in C programming. What is a	
	,	fun	ction prototype?	
	c)		plain operations on pointer variables.	
	ď)	Wri	ite three steps involved in file handling in C? Explain each steps.	
3.	a)	(i)	WildLIS 2 (12)2 Tile? Write types of date files	
	ŕ	(ii)	Write difference between automatic variables and at the	[2]
			with example.	[2]
		(iii)	Explain with examples: (a) passing by values (b) passing to	
	b)	(i)	Develop an algorithm to find the value of a malana and the same	[2]
			$p(x) = a_0 + a_1(x - c_1) + a_2(x - c_1)(x - c_2) + \dots + a_n(x - c_1) \dots (x - c_n).$	[3]
		(ii)	If the results is declared in a new term $a_n(x-c_1), \dots, (x-c_n)$,	
			If char z[5][5]; is declared in a program, write the meaning of each of the following:	[3]
			-	
			*(z+2)+1, (**z+2)+1, **z+2+1, *(*(z+2)+1), *(*(z+2+1)), *(z+2+1).	
	b)	(i)	OR	
	U)	(1)	Find the values of i, j and k after the execution of each of the following	4
			program segments	
			n = ki; $i = 1, 1, k = 3, *p;$ (2) $int i = 7, j, k = 3, *p;$	
			p=&j $j=++k+3;$ $j=++k+3;$	
		(ii)	(1) int i=1, j, k=5, *pi, *pj; pi=&i i=++k; pj=pi; j=*pj+3; k+=*pj; (2) int i=7,j,k=3,*p; p=&j j=++k+3; j+=*p+3; k=i+j; i=*p+5;	
		()	III p, "X; float q, "y; are declarations. State why each of the following is false.	2]
			(a) $x = y$, (b) $&q = y$; (c) $y = &p$; (d) $&p + +$;	
			P.T.O.	

Write a program in which open a read only data file data. If file does not (i) a) exist, print appropriate massage. How would you input data from the file. [2] Define a function to multiply two matrices. (ii) [2] Discuss linear sorting. [2] Write a C- program to find $\int_0^{\pi/2} x^2 \sin(x) dx$ by using trapezoid rule. b) Write a C-program to draw x-axis and y-axis and the graph of y = cos(x), by [2] considering center of the screen as the origin. (iii) Define a function swap to interchange content of two variables for a [2] C-program. OR Define a functions which finds n! and using it, define a function p(n, r), b) (i) where $p(n, r) = \frac{n!}{(n-r)!}$ for a C-program. [2] (ii) Write a C-program to solve y'=-x/y, in the interval [0, 3) by Euler's method. (y(0) = 3)[2] (iii) Define function $g(x)=e^x+x^2$ and $f(x,y)=\begin{cases}g(x)g(y) & \text{if } x \leq y\\g(x+y)/(g(x) & \text{if } x > y\end{cases}$

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