

Seat No: _____

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[44/A-6]

Sardar Patel University

M. Sc. (Third Semester) Examination

Friday, October 28, 2016

Course No. PS03EMTH24 : C Programming and Mathematical Algorithms II

Time: 02.00 p.m. to 04.00 p.m.

Maximum marks: 35

Note: Figures to the right indicates marks.

1. Choose appropriate answer to the question from the given options. [5]
 - i) Suppose float *a, c; is a type declaration. Then which of the following is true?
(a) $c = \&a$; (b) $\&c = a$; (c) $a = \&c + 3$; (d) $a = c + 3$;
 - ii) Suppose float *a, aa; and &a is 3246. If $a = \&aa + 5$; then the content of a is _____.
(a) 3251 (b) 3266 (c) 3246 (d) none of these
 - iii) Which of the following is not valid first line of a function?
(a) float f(float &x) (b) float f(float x)
(c) float f(float *x) (d) float f()
 - iv) Which of the following is true?
(a) One can define a function within the function main()
(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) void f(int x) { static int a = 2; a = a + x; } void main(){f(2); f(4); f(5);} what is the content of a within the function f after the execution of the program?
(a) 4 (b) 7 (c) 13 (d) none of these
2. Answer any THREE of the following: [6]
 - a) What is an external variable? How does it declare? How does it carry values?
 - b) Write the general form of a function definition in C programming. What is a function prototype?
 - c) Explain operations on pointer variables.
 - d) Write three steps involved in file handling in C? Explain each steps.
3. a) (i) What is a data file? Write types of data files. [2]
(ii) Write difference between automatic variables and static variables. Explain with example. [2]
(iii) Explain with examples: (a) passing by values (b) passing by references. [2]
- b) (i) Develop an algorithm to find the value of a polynomial $p(x)$ at z , where $p(x) = a_0 + a_1(x - c_1) + a_2(x - c_1)(x - c_2) + \dots + a_n(x - c_1)\dots(x - c_n)$. [3]
(ii) If char z[5][5]; is declared in a program, write the meaning of each of the following: [3]
 $*(z+2)+1, (**z+2)+1, **z+2+1, (*(z+2)+1), (*(z+2+1)), *(z+2+1)$.
OR
- b) (i) Find the values of i, j and k after the execution of each of the following program segments [4]

(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;
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- (ii) int 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) $\&p++$;
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P.T.O.

