

**2018**

**MCA 1st Semester Examination**

**PROGRAMMING IN C**

**PAPER—MCA-104**

*Full Marks : 100*

*Time : 3 Hours*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

Answer Q. No. 1 and any five from the rest.

1. Answer any five questions : 5×2

- (a) What are pre-increment and post-increment operators ?  
Explain with an example.
- (b) What is a macro ?
- (c) Why a pointer variable needs a data type ?
- (d) What is the basic difference between a 'while' and a 'do-while' loop ?

*(Turn Over)*

- (e) What is a static variable ?
  - (f) How octal and hexadecimal numbers are represented in C language ?
  - (g) What is a preprocessor directive ?
  - (h) What is the use of 'break' and 'continue' statement in a loop ?
2. (a) Discuss about the various storage classes used in C language using examples.
- (b) Differentiate between iteration and recursion method.
- (c) Explain the operations of bitwise operators ^, | and &.
- 6+3+3
3. (a) What are the disadvantages of an array ?
- (b) Is it possible to pass a portion of an array to a function ? Explain briefly with an example.
- (c) A two dimensional array is declared as : `int array[20][20];`  
If the element `array[10][10]` occupies the memory location 1000 and the size of integer is 2 bytes, then what will be the location of the element `array [15][15]` ? Explain your answer.
- 2+6+4

4. (a) What is the difference between 'a' and 'A'?
- (b) Explain any four library functions used for string handling.
- (c) Discuss how command line arguments are handled in C language with an example. 2+6+4
5. (a) What are structure and union? What is the difference between them in respect of memory allocation?
- (b) Explain bit field in C language.
- (c) Differentiate between call by value and call by reference using an example. 4+2+6
6. (a) What are the advantages of pointers? Discuss 'pointer to an array' and 'array of pointers' with suitable examples.
- (b) What is a function pointer? Mention one use of function pointer.
- (c) What is the main advantage of dynamic memory allocation? Differentiate between calloc and malloc. 4+4+4

7. (a) What is the use of fopen function in C language ? What are the various modes used for processing the data in files ?
- (b) What is the significance of EOF ?
- (c) Describe the use and limitation of getc and putc functions. How do they differ from fscanf and printf functions ? 4+2+6
8. Write short notes (any three) :
- (a) Multidimensional array,
- (b) Pointer arithmetic,
- (c) Operator precedence and associativity,
- (d) Switch statement,
- (e) Sizeof and comma operators. 4×3

[ Internal Assessment : 30 ]

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