



ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE - 2009
INTRODUCTION TO COMPUTING
SEMESTER - 2

Time : 3 Hours]

[Full Marks : 70

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any ten of the following : 10 × 1 = 10

i) Which one of the following declaration is invalid ?

- a) int 2A
- b) int A2A
- c) int A2
- d) int AA2.

ii) Which one is the right output ?

```
int x = 9 ;
if ( 10 )
    printf("%d", ++x);
else
    printf("%d", x++);
```

- a) 9
- b) 10
- c) 11
- d) 12.

iii) Which one is the right output ?

```
char a[ 50 ] = "computer" ;
printf("%d", strlen(a));
```

- a) 9
- b) 10
- c) 8
- d) 11.

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iv) Which one is the right output ?

```
#define int char

main()
{
    int i = 65;

    printf("sizeof(i)=%d", sizeof(i));
}
```

- a) sizeof(i)=1
- b) sizeof(i)=2
- c) sizeof(i)=4
- d) sizeof(i)=8.

v) Which one is the right output ?

```
main()
{
    int i = 5, j = 6, z;

    printf("%d", i + ++j);
}
```

- a) 12
- b) 10
- c) 11
- d) 13.

vi) In Hexadecimal number system, E is equivalent to the number in decimal

- a) 10
- b) 12
- c) 14.
- d) 15.

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vii) What is the range of unsigned short int ?

- a) 0 to 65535
- b) 0 to 255
- c) - 128 to 127
- d) none of these.

viii) Operating system is

- a) Application Software
- b) System Software
- c) Firmware
- d) None of these.

ix) ALU is a part of

- a) Memory
- b) CPU
- c) Output device
- d) Input device.

x) Member of a union uses

- a) different storage location
- b) same storage location
- c) no storage location
- d) none of these.

xi) What will be the value of t and m after executing the following code ?

```
int t = 1, m;
```

```
m = t ++;
```

- a) 6, 5
- b) 5, 5
- c) 5, 6
- d) 6, 6.

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GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

- 2. a) Convert $(17.25)_{10}$ to Binary. 1
- b) What are 2's compliment numbers ? How do you use this system to perform $(51)_{10} - (27)_{10}$ in binary ? 1 + 2
- c) What are the main differences between RAM & ROM ? 1
- 3. a) What is ternary operator ? Explain with example. 2 + 1
- b) Write down the difference between compiler and interpreter. 2
- 4. a) Write down the main characteristics of algorithm. 2
- b) Write a flowchart to find the sum of the all integers ranging from 100 to 200 and divisible by both 2 and 3. 3
- 5. Briefly describe the function of different components of a conventional digital computer with a suitable block diagram. 5
- 6. Write a C program to find out the G.C.D of two numbers. 5

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

- 7. a) Differentiate between "do-while" and "while" statements with suitable examples. 4
- b) Differentiate between "break" and "continue" statements with examples. 4
- c) What is the difference between structure and union in C programming ? Supplement with examples. 4
- d) Explain recursion with an example. 3

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3. a) Write a C program to check whether a given number is prime number or not. 5
- b) Write a program to compute factorial of a number read from keyboard. 4
- c) What are auto, external and static variables ? Explain their uses with suitable examples. 6
9. a) What is array of pointers ? Explain with example. 4
- b) Explain call by value and call by reference with examples. 4
- c) Write a program in C to find the real roots of a quadratic equation using user defined function Quad(). 7
10. a) Explain two input Exclusive OR gate using truth table. $2\frac{1}{2}$
- b) Why NAND gate is called universal gate ? $2\frac{1}{2}$
- c) Simplify : 4
- $$(A + \bar{B}) . (A.C) + (A . \bar{B} + \bar{A} . C) . (\overline{A + D})$$
- d) Convert : 5
- i) $(2AD)_3 = ()_2$
- ii) $(11100111101)_2 = ()_{16}$
- iii) $(25.125)_{10} = ()_2$

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