Answer Sheet No._____

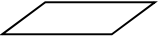Sign. of Candidate _____

Sign. of Invigilator _____

COMPUTER SCIENCE SSC–II
SECTION – A (Marks 12)
Time allowed: 15 Minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. **Do not use lead pencil.**

Q.1 **Fill the relevant bubble for each part. Each part carries one mark.**

(1) What is the output of following code?
int a = 15;
float s = 5.50;
printf ("%f", a/s);
A. 2   ○   B. 2.72 ○
C. 3   ○   D. 5 ○

(2) Which one of the following symbols is used in flow chart for the statement "Marks<33"?
A. ▭ ○   B. ⬯ ○
C. ▱ ○   D. ◇ ○

(3) Which one of the following functions is used to read string "Computer Science"?
A. scanf( ) ○   B. gets( ) ○
C. getchar( ) ○   D. getch( ) ○

(4) Which statement is equivalent to "j = j + a;" ?
A. j+=a; ○   B. j=+a; ○
C. j++a; ○   D. j=a++; ○

(5) Which escape sequence can be used to insert a Tab in "**C**" Language?
A. \a ○   B. \b ○
C. \t ○   D. \n ○

(6) Which one of the following is the most suitable for making two ways decision?
A. if statement ○   B. if-else statement ○
C. switch statement ○   D. Nested-if statement ○

(7) How many times "FBISE" will be displayed by the following code?
for (int i=1; i<10; i=+2)
        printf ("FBISE");
A.   1   ◯   B.   5   ◯
C.   Infinite   ◯   D.   The loop will not run.   ◯

(8) What is the output of the following code?
int i ;
for(i=1;i<=2;i++)
printf ("\n i=%d", i);

A.   i=2   ◯
     i =3

B.   i =1   ◯
     i =2

C.   i =1   ◯
      i =3

D.   i =2   ◯
     i =1

(9) Which one of the following gates has an output = A.B?
A.   NAND   ◯   B.   NOR   ◯
C.   OR   ◯   D.   AND   ◯

(10) When the input to an inverter is LOW(0) the output will be:
A.   HIGH or 0   ◯   B.   LOW or 0   ◯
C.   HIGH or 1   ◯   D.   LOW or 1   ◯

(11) What is the output of following HTML code?

 Magnetic Disk
 CD and DVD

A.   • Magnetic Disk   ◯   B.   1. Magnetic Disk   ◯
     • CD and DVD   2. CD and DVD
C.   1. Magnetic Disk ◯   D.   Magnetic Disk   ◯
     o CD and DVD   CD and DVD

(12) Which one of the following is correct HTML statements to divide browser window into 3 columns?
A.   <fram col = 30%, 30%, 40%>   ◯
B.   <framset col = 30%, 30%, 40%>   ◯
C.   <framset col 30%, 30%, 40%>   ◯
D.   <fram row = 30%, 30%, 40%>   ◯

_____

Time allowed: 2.45 hours   Total Marks: 43

Note: Answer any nine parts from Section 'B' and attempt any two questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

SECTION – B (Marks 27)

Q.2   Attempt any **NINE** parts from the following. All parts carry equal marks.   (9 × 3 = 27)

i.   Define algorithm. What is the role of algorithm in problem solving?

ii.   Point out valid and invalid variable names.

    a.   define   b.   5name   c.   a5
    d   US$ e.   a_b   f.   f name

iii.   Write down any three characteristics of High Level Language.

iv.   Evaluate each of the following expression assuming, a = 2, z = 1.3, c = 1 and d = 3:
    a.   b = d/a + d % a;   b.   x = (a + c)/(z + 0.3);   c.   y = c / d * a;

v.   Write down the names and purpose of any three format specifiers.

vi.   Define the following.
    i.   Control Statement   ii.   Conditional Statement

vii.   Compare an assignment operator (=) and an equal to (= =) operator by giving an example.

viii.   Write a program using while loop to print odd numbers from 1 to 20.

ix.   What will be the output of the following code?

```
void main( )
{
        int u, i;
        for (u = 1; u< = 5; u++)
{
        for (i = 1; i < = u; i++)
        {
        printf("%d \t", i);
        }
        printf("\n");
}
}
```

x.   Construct Truth Table for the following Boolean Expression:
$$F = \bar{x}\,\bar{y}z + \bar{x}yz + x\bar{y}$$

xi.   Convert the following code into for loop:

```
int sum = 0, num= 0;
do      {
        sum = sum + num;
        printf ("Enter an integer value");
        scanf("%d", &num);
        }
while (num > = 0 && num < = 15);
```

xii. Write down the three benefits of web portal.

xiii. Use appropriate text formatting tags to define the following. Write one example of each.
   a.   font size   b.   font colour   c.   font face

SECTION – C (Marks 16)

Note: Attempt any **TWO** questions. $(8 \times 2 = 16)$

Q.3 i.   Draw a flowchart to calculate the exponent of a given number.   (4)
     ii. Explain any four modules of C programming environment.   (4)

Q.4 Simplify the Boolean Function F, using Karnaugh Mapping (K-map).

$$F = xyz + xy\bar{z} + x\bar{y}z + x\bar{y}\bar{z} + \bar{x}yz + \bar{x}\bar{y}z$$

Also construct logic circuit for the simplified expression.   (4+4)

Q.5 i.   Rewrite the following code after removing the errors: (4)

```
# include < std.h>
# include < conio.h>
void main ( );
{
        int p, s;
printf("\n Enter a number:);
scanf("%d", p);
s=p%2;
if(s=0)
printf("even number%d", p)
els
printf("odd number%d", p);
getch( );
```

     ii. Convert the following program using switch statement: (4)

```
        void main( )
        {       char ch; clrscr( );
                printf("Enter a single character");
                scanf("%c", &ch);
                if ( ch = = 'a' || ch = = 'A' ||
                    ch = = 'e' || ch = = 'E' ||
                    ch = = 'i' || ch = = 'I' ||
                    ch = = 'o' || ch = = 'O' ||
                    ch = = 'u' || ch = = 'U')
                printf("It is a vowel");
                else     printf("It is a consonant");     }
```

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COMPUTER SCIENCE SSC-II

(Curriculum 2009)
Student Learning Outcomes

Sr No	Section: Q. No. (Part no.)	Contents and Scope	Student Learning Outcomes *	Cognitive Level **	Allocated Marks in Model Paper
1	A: 1(i)	3.1 Input / Output functions	iii) Use output functions like: • printf ( )	U	1
2	A:1(ii)	1.3 Flow Chart	iv) Use of flow chart symbols	U	1
3	A: 1(iii)	3.1 Input / Output functions	ii) Use input functions like: • scanf ( ) • getch ( ), getche ( ), getchar ( ) • gets ( )	U	1
4	A: 1(iv)	3.2 Operators	iii) Use the following assignment operators: • Compound assignment operator (+ =, -, =, * =, / =, % =)	U	1
5	A: 1(v)	3.1 Input / Output functions	vi) Explain the use of the following escape sequences using programming examples: • Alert - \a • Backspace – \b • Newline – \n • Carrage Return – \r • Tab – \t	K	1
6	A: 1(vi)	4.1 Control Structure	vi) Use if-else statement	K	1
7	A: 1(vii)	5.1 Loop Structure	ii) Know that for loop structure is composed of: • For • Initialization expression • Test expression • Body of the loop • Increment / decrement expression	A	1
8	A: 1(viii)	5.1 Loop Structure	ii) Know that for loop structure is composed of: • For • Initialization expression • Test expression • Body of the loop • Increment / decrement expression	U	1
9	A: 1(ix)	6.2 Logic Gates	iv) Explain the following logic gates with the help of truth tables: • AND • OR • NAND • NOR • NOT	U	1
10	A: 1(x)	6.2 Logic Gates	iv) Explain the following logic gates with the help of truth tables: NOT	K	1
11	A: 1(xi)	7.4 Creating Lists	ii) Create: • Unordered list • Ordered list	U	1
12	A: 1(xii)	7.8 Creating Frames	iii) Create a frameset	U	1

13	B: 2(i)	1.2 Algorithm	i) Define an algorithm ii) Explain role of algorithm in problem solving	K	3
14	B: 2(ii)	2.4 Constants and Variables	ii) Explain the rules for specifying variable names	U	3
15	B: 2(iii)	2.1 Introduction	iii) Elaborate characteristics of High Level Language	K	3
16	B: 2(iv)	3.2 Operators	xi) Define and explain the order of precedence of operators	A	3
17	B: 2(v)	3.1 Input / Output functions	iv) Define Format specifiers • decimal - %d • integer - %i • float - %f • double - %g,e • char - %c • long int - %ld	K	3
18	B: 2(vi)	4.1 Control Structure	i) Define a control statement. ii) Define a conditional statement	K	3
19	B: 2(vii)	3.2 Operators	viii) Differentiate between assignment (=) and equal to operator (= =)	U	3
20	B: 2(viii)	5.1 Loop Structure	viii) Write codes for flowcharts discussed in unit-1 To find a sequence of odd numbers starting from a given number 1.2 (iv)	A	3
21	B: 2(ix)	5.1 Loop Structure	ii) Know that for loop structure is composed of: • For • Initialization expression • Test expression • Body of the loop • Increment / decrement expression	U	3
22	B: 2(x)	6.2 Logic Gates	iv) Explain the following logic gates with the help of truth tables: • AND • OR • NAND • NOR • NOT • Exclusive NOR (XNOR) • Exclusive OR (XOR)	U	3
23	B: 2(xi)	5.1 Loop Structure	ii) Know that for loop structure is composed of: • For • Initialization expression • Test expression • Body of the loop • Increment / decrement expression iv) Know that do while loop structure is composed of: • Do • Body of the loop • While • Test expression • Statement terminator	U	3
24	B: 2(xii)	7.1 Introduction	• ii) Explain the following types of websites • Portal	U	3
25	B: 2(xiii)	7. 3 Text Formatting	Use appropriate text formatting tags to define: • Font size • Font colour • Font face	K	2+1

26	C: 3	1.3 Flow Chart 2.2 Programming Environment	(v) Draw flow charts of algorithms discussed earlier in unit-1 (1.2 (iv)) ii) Explain the following modules of the C programming environment • Editor • Compiler • Linker • Loader • Debugger	A+K	4+4
27	C: 4	6.3 Simplification using K Maps	• iii) Simplify three variable Boolean function/expression • iv) Build logic circuits from the simplified expressions	U+A	4+4
28	C: 5	4.1 Control Structure	vi) Use if else statement vii) Know that the switch statement is composed of: • Switch • Case • Default • Break	U	8

* Student Learning Outcomes
National Curriculum for Computer Sciences Grades IX-XII, 2009
(Page no. 14-25)

**Cognitive Level
K: Knowledge
U: Understanding
A: Application

COMPUTER SCIENCE SSC-II
Table of Specifications

Assessment Objectives		Unit 1: Programming Techniques 10%	Unit 2: Programming in C 10%	Unit 3: Input / Output Handling 15%	Unit 4: Control Structure 15%	Unit 5: Loop Structure 15%	Unit 6: Computer Logic and Gates 15%	Unit 7: World Wide Web and HTML(Major part cover in Practical) 20%	Marks	Total marks (55 Theory + 25 Practical)	% Covered 100%
Knowledge based	Section - A			1(5)(01)	1(6)(01)		1(10)(01)		03	22	29.3%
	Section - B	2(i)(03)	2(iii)(03)	2(v)(03)	2(vi)(03)			2(xiii)(03)	15		
	Section - C		3-(04)						04		
Understanding based	Section - A	1(2)(01)		1(1)(01) 1(3)(01) 1(4)(01)		1(8)(01)	1(9)(01)	1(11)(01) 1(12)(01)	08	38	50.7%
	Section - B		2(ii)(03)	2(vii)(03)		2(ix)(03) 2(xi)(03)	2(x)(03)	2(xii)(03)	18		
	Section - C				5-(08)		4-(04)		12		
Application based	Section - A					1(7)(01)			01	15	20%
	Section - B			2(iv)(03)		2(viii)(03)			06		
	Section - C	3-(04)					4-(04)		08		
Total marks		08	10	13	12	11	13	8		75	100%

* **Unit 7: Major content will examine in Practical paper. 10% covered in Theory paper and remaining will cover in Practical paper.**
Hence weightage distributed to other units.

KEY: **1(1)(01)**
Question No (Part No.) (Allocated Marks)