KarMic Embedded Technical Test Instructions

- This question paper carries 19 questions.
- You've 45 minutes to answer the questions.
- Write your answers on the A4 sheet along with your name.
- If you want to change any answer simply scratch previous answer and rewrite it.
- For multiple choice questions, correct answer shall fetch 3 marks and 1 mark shall be deducted for every wrong answer.
- Test is for the total of 60 marks.

1. What will be the output of the following C code and Justify?

```
#include <stdio.h>
struct student
{
   int no = 5;
   char name[20];
};
void main()
{
   struct student s;
   s.no = 8;
   printf("hello");
}
```

(a) hello
(b) 8ello
(c) hell8
(d) Compile time error

Answer:

2. What will be the output of the following C code and Justify?

```
#include<stdio.h>
#include<stdlib.h>
#include<string.h>
void main()
{
   char *str = "hello, world";
   char str1[15] = "hello wo 9";
   strcpy(str, str1);
   printf("%s", str);
   system("pause");
}
```

(a) hello, world hello wo 9
(b) hello wo 9
(c) Segmentation error
(d) Compile time error

Answer:

3. Write down the answer with justification.

```
#include<stdio.h>
#include<stdlib.h>
char function1();

char function()
```

```
{
        int a = 10, b = 100, c = 200, d = 0;
        d = a + b + c;
        return (int)d;
}

void main()
{
        int a;
        a = function();
        printf("%d\n",a);
        system("pause");
}
```

Answer :

4. What will be the output of the following C code?

```
#include <stdio.h>
int x = 5;
void main()
{
   int x = 3;
   m();
   printf(" %d ", x);
}
void m()
{
   x = 8;
   n();
}
void n()
{
   printf(" %d ", x);
}
```

(a) 3 8 (b) 8 3 (c) 5 3 (d) Compile time error

Answer :

5. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
        char a = 'A', b = 0x02;
        a += b;
        switch(a)
        {
                case 'A'+0 : printf("A selected\n");
```

```
                                    break;
                case 'B'+1 : printf("B selected\n");
                                    break;
                case 'C'+2 : printf("C selected\n");
                                    break;
                default : printf("Nothing selected\n");
                }
}
```

(a) A selected
(b) B selected
(c) C selected
(d) Compile time error

Answer :

6. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
    int k;
    for (k = -3; k < -5; k++)
       printf("Hello");
 }
```

(a) Hello (b) Infinite Hello (c) Compile time error (d) Nothing

Answer:

7. What will be the output of the following C code?

```
#include <stdio.h>
   int main()
   {
      int i = 0;
      for (i++; i == 1; i = 2)
         printf("NGX embedded");
         printf("Embedded Karmic\n");
}
```

(a) Embedded Karmic
(b) Compile time error
(c) NGX embedded Embedded Karmic
(d) Nothing

Answer :

8. What will be the output of the following C code?

```
#include <stdio.h>
   void main()
   {
      int a = 5, b = -7, c = 0, d;
      d = ++a && ++b || ++c;
      printf("\n%d%d%d%d", a, b, c, d);
  }
```

(a) 6 -6 0 0

(b) 6 -6 0 1
(c) 6 -7 1 0
(d) 6 -6 1 1

Answer :

9. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
        char a = 5, b = 2, c = 3, d;
        d = (a & b)+(b>>1)+(c<<1)+b*c;
        printf("value of d = %d\n",d);
        }
```

(a) 15 (b) 0 (c)13 (d) 20

10. Write a program to output how a single precision floating point number is stored in computer.

Microcontroller

11. MCQ: System Tick Timer in LPC1768 is a

(a) 8 bit timer
(b) 16 bit timer
(c) 24 bit timer
(d) 32 bit timer

12. What is the range of the bitfield for the declaration?

signed int THREEBIT :3;

Answer:

13. On a little endian microcontroller, the value 0x13F4258E is stored at address 0X8080. The value

(a) At address 0x8079 is
(b) 0x13F4
(c) 0x258E
(d) None of the above

14. What will be the effect on code size, if an inline function is used?

(a) Code will be larger
(b) Code will be small
(c) Code would be less predictable
(d) None of the above

15. In 8-bit signed number representation, if

1000 0000 is –128, then 1000 0010 is: _____.

16. What is the output of the following function of a 32-bit microcontroller?

```
void Test_Complements(void)
{
        unsigned int zero =0;
        unsigned int compzero = 0xFFFF;
        if(~0== compzero)
        {
                printf('Correct');
        }
        else
        {
                printf('Incorrect');
        }
}
```

A. Correct
B. Incorrect
C. Compiler error

17. In a UART communication, ODD parity means,

A. Number of 1’s in the Data is ODD.
B. Number of 0’s in the Data is ODD.
C. Number of 1’s in the Frame is ODD.
D. Number of 0’s in the Frame is ODD.

18. What is false about WatchDog timer?

A. A WatchDog is a counter that is set to a certain value and then enabled to count down/up
B. CPU has to be running for a WatchDog timer to tick
C. If WatchDog reaches the limit, it is assumed that the software has failed in some manner and the CPU is reset
D. It is the responsibility of the software to set the count to its original value often enough to ensure that it never reaches the limit

19. Configure PLL with the following Assumptions:

• The USB interface will be used in the application and will be clocked from PLL0.
• The desired CPU rate is 38 MHz.
• An external 4 MHz crystal or clock source will be used as the system clock source.