Code: 100204

B.Tech 2nd Semester Exam., 2022

(New Course)

PROGRAMMING FOR PROBLEM SOLVING

Time: 3 hours Full Marks: 70

Instructions:

- (i) The marks are indicated in the right-hand margin.
- (ii) There are **NINE** questions in this paper.
- (iii) Attempt FIVE questions in all.
- (iv) Question No. 1 is compulsory.
 - 1. Choose the correct option from any seven of the following: 2×7=14
 - (a) What is the maximum range of unsigned char data type?
 - (i) 128
 - (ii) 127 *
 - (iii) 255
 - (iv) 256
 - (b) How many times AKU is printed?

 int main()
 {

 int a = 0;

 while(a++);

```
printf("AKU");
   return 0:
    (i) 0
   Chip 1
    (iii) Infinite times
    (iv) Compiling error
   What is the output of the following
(c)
   C code?
    #include<stdio.h>
    int main()
         int i = 5/2;
         printf("%d", i==2);
    return 0;
     (i) 2
    Lii 1
    (iii) Garbage value
    (iv) 2.5
    A C variable cannot start with
(d)
    (i) number
    (ii) underscore
    (iii) character
    (iv) None of the above
```

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(Continued)

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What will be the output of the following
 (e)
                          return 0;}
     program?
     int main() {
     printf("\nAKU");
     printf("\bGAYA");
     return 0;
                 (iii) Compiled error
     AT AKGAYA ent la enell (ui)
prival (ii) AKUGAYA man set at indiv
     (iii) GAYA
                           int maint
     (iv) None of the above
     Which one is not a keyword in C?
(f)
      (i) gotoo
     (ii) typedefine rollelly (iii)
     (iii) void
     (iv) short
    What is the output of the the following
(g)
    C code?
    int main()
        the pullottes anylowers the
    int i,j;

for(i = 1, j = 1;i<3;i++)
     printf("%d%d--",i,j);
```

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solved all with a frames one of there is the ter
                            Afmiripping.
     return 0; }
                        Atriam Ini
       (i) 11--21--
                       PERSONAL PROPERTY
      (ii) 1221
                      CAMBINATION OF THE
      (iii) Compiled error
      (iv) None of the above
 (h)
      What is the output of the following
      program?
                   A 80 (td)
      int main()
                  ing Name of the acc
      printf("%d", 3/2);
      return 0;
       (i) Compilation error
                            bio z gira
       (ii) Run time error
                             paritie for
      (iii) 1
      (iv) None of the above
      Which of you allocate a memory?
       (i) remove(var-name);
      (ii) free(var-name);
     (iii) malloc(var-name);
      (iv) None of the above
```

Which of the following is invalid header file in C? (a) Suplain motement

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- operators in Ciangu d.dilbta (i) help of
 - (ii) ctype.h
 - (iii) string.h
 - (iv) mathe.h

Attempt all parts: 1830 1830 18 18 7×2=14

- Write a program in C to print the sum of (a) all even numbers from 0 to 50.
- (b) Explain logical AND and OR operators with suitable examples.
- tire minimum and meximum values of Attempt all parts:

 $7 \times 2 = 14$

- Can you dynamically allocate arrays in expanded memory? Explain it with an example.
- (b) What is the similarity between structure, union and enumeration?
- Twenty-five numbers are entered from the keyboard into an array. Write a C program to find out how many of them are positive, how many are negative, how many are even and how many are odd.

5. Attempt all parts:

 $7 \times 2 = 14$

- Explain increment and decrement (a) operators in C language with the help of suitable example. n born let
- (b) Write a program in C to print the sum of the following series:

2+4+6+8+10.....

6. What is linear search? Draw a working flowchart and write a program in C using function for the linear search.

7. Attempt all parts: 7×2=14

- Write a program in C to find and display the minimum and maximum values of an array of integers.
- Explain the concept of file handling with an example.

8 Attempt all parts:

Write a C program using the nesting of loops to print the following pattern:

AAAA-

AAAA-

AAAA.

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(b) Define a macro called AREA which will calculate area of cylinder in terms of radius. Use the constant PI in the calculation.

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9. Explain the generation of programming languages. Mention the types of applications which can be developed using C. List any three C compilers.

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