

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2024

B.Tech-I Semester (CSE/IT/ECE/CE/BT/BI)

COURSE CODE (CREDITS): 24B11CI111 (3)

MAX. MARKS: 25

COURSE NAME: **Problem Solving and Programming**

COURSE INSTRUCTORS: RKB, KLK, GVS, JTY,NSG, FSL

MAX. TIME: 1 Hour 30 Minutes

Note: (a) All questions are compulsory. (b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

| Q.No | Question | CO | Marks |
|------|---|------|-------|
| Q1 | Read an integer N and print pattern as shown on the right. For the pattern on right N is 4. If a user enters a zero or negative number program should display the message "Not an appropriate number". | CO-2 | 4 |
| | <pre> XXXXXXXX XXXXXX XXX X XXX XXXXX XXXXXXXX </pre> | | |
| Q2 | Write a program using switch-case and while-loop where the user is displayed with a menu of 5 items, <i>namely</i> , sum, difference, multiply, square, and exit. Users should be able to perform chosen operations as many times s/he like and exit on choosing exit option. | CO-5 | 3 |
| Q3 | Write a program to read two integers M and N from the user. The program will print all X's (numbers) in the range [M, N] such that the sum of digits of X is prime. Sum of digits and primality testing should be done via user defined functions. | CO-2 | 5 |
| Q4 | Write a program to find the second highest element in an array of integers. Assume that all values are unique in the array. | CO-7 | 3 |
| Q5 | Write a program to toggle an input string. Toggle: lower case is converted to upper case and vice-versa. | CO-3 | 3 |

Q6. Predict Output or Mention Compilation Error.

[CO-4]

[4]

| Code Snippet A | Code Snippet B |
|---|--|
| <pre> int main() { int arr[4] = {10, 1e1, 30}; int *p = arr; printf("%d\n", *(3 + p)); return 0; } </pre> | <pre> int main() { int a = 10; int *p = &a; *p *= *p *2; printf("%d\n", a); return 0; } </pre> |

| Code Snippet C | Code Snippet D |
|---|---|
| <pre>int main() { int *p1 = 0; int *p2 = NULL; if (p1 == p2) printf("Equal\n"); else printf("Not Equal"); return 0; }</pre> | <pre>int main() { int a = 10; void *ptr = &a; printf("%d\n", *ptr); return 0; }</pre> |

Q7. Predict Output or Mention Compilation Error.

[CO-4] [0.5 X 6 = 3]

| Code Snippet A | Code Snippet B |
|---|---|
| <pre>int main() { //Assume address of A is 100 int a=10; int *b=&a; printf("%d", b/2); return 0; }</pre> | <pre>int main() { //Assume address of A is 0x75fa213 int a[10]; printf("%p %p %p\n", a, &a, &a[0]); return 0; }</pre> |
| Code Snippet C | Code Snippet D |
| <pre>int main() { if(-1) if(+1) printf("J"); else printf("U"); else printf("IT"); return 0; }</pre> | <pre>int main() { if(-1) if(+1) printf("J"); else printf("U"); else; printf("IT"); return 0; }</pre> |
| Code Snippet E | Code Snippet F |
| <pre>int main() { int a[7]={0,0,0,7}; printf("%d %d\n", a[3], 3[a]); printf("%d %d", *(a+4), *(4+a)); return 0; }</pre> | <pre>int main() { if(-1) if(+1) printf("J"); else; printf("U"); else printf("IT"); return 0; }</pre> |