

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

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

COURSE CODE (CREDITS): **25B11CII12 (3)**

MAX. MARKS: 25

COURSE NAME: Software Development Fundamentals – I

COURSE INSTRUCTORS: PKG, AKJ, KSL, AMN, MNK, MGD, FSL, PLK

MAX. TIME: 1.5 Hour

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	Write the code for checking if the sum of the diagonal of a 3 by 3 matrix is even or odd.	5	3																
Q2	Write a program that swaps two numbers using a function named swap(), which is called from main() to exchange the values of the variables defined in main().	5	3																
Q3.	For the array ARR[7] beginning at address 100 with content 4,1,2,3,6,7,4. Draw the memory map of the array assuming integers occupy 2 Bytes. What will be the output of the following: printf(“%p %p %p”, 0[ARR], &ARR[0], &ARR+1);	5	4																
Q4.	Give the pseudocode for Bubble Sort. Mention the maximum number of steps required to sort an array of size n. Identify the best and worst permutations of data for Bubble Sort. Apply Bubble Sort on ARR[7] (as mentioned in Q3) and show the contents of ARR after each pass.	5	5																
Q5	Give two integers pointers A and B (int *A, *B, a=10; A=&a;) stored at memory location 202 and 200 respectively. Given sizeof(int) evaluates to 2. Fill in the entries of the table below. Write NA if not valid operation.	5	2																
<table><tr><td>A+B</td><td>A-B</td><td>A%B</td><td>A/B</td><td>A+1</td><td>1-B</td><td>A++</td><td>*A</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		A+B	A-B	A%B	A/B	A+1	1-B	A++	*A										
A+B	A-B	A%B	A/B	A+1	1-B	A++	*A												
Q6.	Apply Binary search procedure to the following array. Item to be searched is (CASE 1: Binary Search) 27 (CASE 2: Linear Search) 13.	4	4																
<table><tr><td>10</td><td>11</td><td>12</td><td>15</td><td>17</td><td>18</td><td>19</td><td>21</td><td>27</td><td>35</td></tr></table> Report the value of <i>lower</i>, <i>upper</i> and <i>mid</i> variables for both case CASE 1 and CASE 2 till the search reaches conclusion.		10	11	12	15	17	18	19	21	27	35								
10	11	12	15	17	18	19	21	27	35										

Q7.	Predict the output of the following code snippets, or write the name of the error if they don't compile. Assume that the code will work fine without the return 0 statement and int prefixed to main(). Assume the values wherever required and mentioned before the answer.	5	4
A) main() { int arr[5]={1,2,3,4,5,6}; int *ptr1=arr+3-2; int *ptr2=arr+3; printf("%d",ptr2-ptr1); }	B) main() { int arr[]={1,2,3}; arr[0,1,2]=(1,2,3); printf("%d %d",arr[1],arr[2]); }		
C) main() { int arr []={1,2,3,4,5,6,7}; int i; for(i=0;i<6;i++) printf("%d ",arr[i]); }	D)main() { int *ptr=10; printf("%p",*ptr); }		
E) main() { const int *p1,p2; printf("%d %d",sizeof(p1),sizeof(p2)); }	F) main() { int a=10; int *ptr=&a; printf("%d %d",*ptr++,++*ptr); }		
G)int fun(int a) { return printf("fun is %d\n",a); } main() { int a=10,b; b=fun(a); printf("b after call to fun is %d",b); }	H) main() { int a=10,b=20,c; c=add(a,b); printf("addition is %d",c); } int add(int a, int b) { b+=return a; }		