

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION- 2025

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

COURSE CODE (CREDITS): **25B11CI112 (3)**

MAX. MARKS: 15

COURSE NAME: Software Development Fundamentals – I

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

MAX. TIME: 1 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	List only the names of all phases of SDLC in the waterfall model and write the outcome of each phase.	1	2																				
Q2	Draw the table below in your answer book and fill in the missing entries. Show the calculations below the table. The shortcut method is allowed for conversion. <table><tr><td>$(137)_{10}$</td><td>$()_2$</td><td>$()_{16}$</td></tr><tr><td>$(11010110)_2$</td><td>$()_{10}$</td><td>$()_8$</td></tr><tr><td>$(FFA)_{16}$</td><td>$()_8$</td><td>$()_2$</td></tr></table>	$(137)_{10}$	$()_2$	$()_{16}$	$(11010110)_2$	$()_{10}$	$()_8$	$(FFA)_{16}$	$()_8$	$()_2$	2	3											
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Q3.	Draw the table in your answer book and complete it. Show the calculation below the table. One complete correct row = 0.5 Marks. <table><tr><td>A</td><td>B</td><td>$A \wedge B$</td><td>$\neg A - \neg B$</td></tr><tr><td>13</td><td>4</td><td></td><td></td></tr><tr><td>17</td><td>0</td><td></td><td></td></tr><tr><td>12</td><td>99</td><td></td><td></td></tr><tr><td>-9</td><td>-7</td><td></td><td></td></tr></table>	A	B	$A \wedge B$	$\neg A - \neg B$	13	4			17	0			12	99			-9	-7			2	2
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Q4.	Assume that an integer will be stored in signed 2's complement form in 16 bits. Show how 175 will be stored and how 1111 1011 1101 1110 will be converted into an integer.	2	1																				
Q5	Assume that an integer is stored in 16 bits. Given $x = 78$ and $y = 21$. Compute the value of z where $z = \sim x \wedge y$.	2	1																				
Q6	Write a program to check if a number is a prime number or not using a while loop	3	2																				

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().	4	2								
	<table><tr><td>A) main() { int x; printf("%.4f", 6.25); }</td><td>B) main() { ; ; ; ; ; /* 11 */ printf("%d", 2<3<1); }</td></tr><tr><td>C) main() { printf("%d-%d", printf("1 "), printf("2 ")); printf("%d", (1,2,3)); }</td><td>D) main() { printf("%f", 6%2.0); printf("%d", 6%-5); }</td></tr><tr><td>E) main() { int x=1, y=2, z=3, p; p=++x y++ && ++z; printf("%d", p+z); }</td><td>F) main() { int x=7/2; printf("%d", x<<1+1); }</td></tr><tr><td>G) main() { int x=1,2,3; printf("%d %o %X", 012, 0x12, 12); printf("\nx=%d", x); }</td><td>H) main() { if(0) if(-1) printf("yes"); }</td></tr></table>	A) main() { int x; printf("%.4f", 6.25); }	B) main() { ; ; ; ; ; /* 11 */ printf("%d", 2<3<1); }	C) main() { printf("%d-%d", printf("1 "), printf("2 ")); printf("%d", (1,2,3)); }	D) main() { printf("%f", 6%2.0); printf("%d", 6%-5); }	E) main() { int x=1, y=2, z=3, p; p=++x y++ && ++z; printf("%d", p+z); }	F) main() { int x=7/2; printf("%d", x<<1+1); }	G) main() { int x=1,2,3; printf("%d %o %X", 012, 0x12, 12); printf("\nx=%d", x); }	H) main() { if(0) if(-1) printf("yes"); }		
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Q8	Write a program to print the following pattern with the help of nested loops. 16 15 14 13 12 11 10 9 8 7 You are allowed to use only two loops and two printf statements.	4	2								