

AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department: Computer Science and Engineering

Program: B.Sc. in Computer Science and Engineering

Semester Final Examination: Fall 2020

Year: 3rd

Semester: 2nd

Course Number: CSE3223

Course Name: Information System Design and Software Engineering

Time: 2 (Two) Hours

Full Marks: 50

Use separate answer script for each part

Instructions:	i)	Answer script should be hand written and should be written in A4 white paper. You must submit the hard copy of this answer script to the Department when the university reopens.								
	ii)	<p>You must write the following information at the top page of each answer script:</p> <p style="text-align: center;">Part A/Part B</p> <table><tr><td>Department:</td><td>Program:</td></tr><tr><td>Course no:</td><td>Course Title:</td></tr><tr><td>Examination:</td><td>Semester (Session):</td></tr><tr><td>Student ID:</td><td>Signature and Date:</td></tr></table>	Department:	Program:	Course no:	Course Title:	Examination:	Semester (Session):	Student ID:	Signature and Date:
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Course no:	Course Title:									
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Student ID:	Signature and Date:									
	iii)	Write down Student ID, Course number and put your signature on top of every single page of the answer script.								
	iv)	Write down page number at the bottom of every page of the answer script.								
	v)	Upload the scan copy of your answer script in PDF format through provided google form at the respective course site (i.e., google classroom) using institutional email within the allocated time. Uploading clear and readable scan copy (uncorrupted) is your responsibility and must cover the full page of your answer script. However, for clear and readable scan copy of the answer script student should use only one side of a page for answering the questions.								
	vi)	You must avoid plagiarism , maintain academic integrity, and ethics . You are not allowed to take any help from another individual and if taken so can result in stern disciplinary actions from the university authority.								
	vii)	Marks allotted are indicated in the right margin .								
	viii)	Necessary charts/tables are attached at the end of the question paper. You may use graph papers where necessary.								
	ix)	Assume any reasonable data if needed.								
	x)	Symbols and characters have their usual meaning.								
	xi)	<p>Before uploading rename the PDF file as CourseNo_StudentID_PartNo.pdf</p> <p>For example, CSE 3223_180104001_PartA.pdf</p> <p style="text-align: center;">CSE 3223_180104001_PartB.pdf</p>								

PART A

The answer script (**one single pdf file**) of this part (**Part A**) must be uploaded at designated location in the provided **google form link** available in the google classroom.

There are 3 (Three) Questions. Answer any 2 (Two).

Question 1. [Marks: 12.5]		
a)	<p><i>Leads Software Company</i> has a <i>Calendar</i> software project under development which has a class called <i>Date</i>. The <i>Date</i> class is working with several methods. Among them, two methods are called <i>isLeapYear(year)</i> and <i>daysInMonth(month, year)</i>.</p> <p>i) Prepare the test conditions for <i>daysInMonth(month, year)</i> method to analyze the boundary value and equivalence partitioning. ii) Show the path coverage for <i>isLeapYear(year)</i> method.</p>	[6]
b)	What is meant by project feasibility?	[2]
c)	Describe all types of project feasibilities with examples.	[4.5]
Question 2. [Marks: 12.5]		
a)	<p>Examine the interview structure presented in the sequencing of the following questions:</p> <ul style="list-style-type: none">i. <i>What kind of documents do I require to open a bank account?</i>ii. <i>How can I add a nominee to my account?</i>iii. <i>How long will it take to get my cheque book?</i>iv. <i>What are the charges of the debit card?</i>v. <i>How can I operate my account?</i>vi. <i>What loan am I eligible for?</i>vii. <i>How can I apply for a loan?</i>viii. <i>How do I repay the loan?</i>ix. <i>Could you please explain your online banking system?</i>x. <i>Can I send money overseas through your bank?</i> <ul style="list-style-type: none">● What structure is being used? Justify your answer.● Rearrange the interview by changing the sequence of the questions (you may omit some if necessary). Label the reordered questions with the name of the structure you have used.	[6.5]
b)	Explain the concept of <i>Regression</i> and <i>Smoke</i> testing with an example.	[6]
Question 3. [Marks: 12.5]		
a)	<p>Identify and explain the tangible and intangible costs from each of the following scenarios.</p> <p>i) <i>Let's examine the costs associated with a customer who has received broken merchandise, and the company refunds the value of the product to the customer.</i></p> <p>ii) <i>If a medicine company produces a medicine that ends up injuring a portion of the children who takes it, that company damages their reputation.</i></p> <p>iii) <i>If a company buys a new server system and asks staff to connect their workstation to the new server system.</i></p> <p>iv) <i>A startup company pays their employee paychecks and also purchases some office components.</i></p>	[6]

b)	What is <i>verification</i> and <i>validation</i> in software testing?	[1.5]
c)	Distinguish between <i>Extreme Programming (XP)</i> and <i>Adaptive Software Development (ASD)</i> .	[5]

PART B

The answer script (**one single pdf file**) of this part (**Part B**) must be uploaded at designated location in the provided **google form link** available in the google classroom.

There are 3 (Three) Questions. Answer any 2 (Two).

Question 4. [Marks: 12.5]																																						
a)	Define PERT and CPM?	[3]																																				
b)	Draw the CPM NETWORK of the following activity table. Calculate and find the critical path in the network. Activity Table for your E-Commerce Project: <table border="1"> <thead> <tr> <th>Activity</th><th>Predecessor (s)</th><th>Duration in weeks</th></tr> </thead> <tbody> <tr><td>A</td><td>---</td><td>5</td></tr> <tr><td>B</td><td>---</td><td>6</td></tr> <tr><td>C</td><td>A</td><td>4</td></tr> <tr><td>D</td><td>C</td><td>4</td></tr> <tr><td>E</td><td>D</td><td>3</td></tr> <tr><td>F</td><td>D</td><td>3</td></tr> <tr><td>G</td><td>C</td><td>8</td></tr> <tr><td>H</td><td>E,G</td><td>7</td></tr> <tr><td>I</td><td>B</td><td>8</td></tr> <tr><td>J</td><td>F,I</td><td>9</td></tr> <tr><td>K</td><td>H,J</td><td>7</td></tr> </tbody> </table>	Activity	Predecessor (s)	Duration in weeks	A	---	5	B	---	6	C	A	4	D	C	4	E	D	3	F	D	3	G	C	8	H	E,G	7	I	B	8	J	F,I	9	K	H,J	7	[9.5]
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Question 5. [Marks: 12.5]																																						
a)	What is DFD? For whom do we draw the DFD at the organization?	[2]																																				
b)	What are User case narratives, CRC, PSPEC, and CSPEC?	[4]																																				
c)	Draw the context level & Level 1 DFD of IUMS (AUST Integrated University Management System).	[6.5]																																				
Question 6. [Marks: 12.5]																																						
a)	What do you understand by software estimation?	[3]																																				
b)	What is man-month?	[2]																																				
c)	What are the different types of software estimation?	[3]																																				
d)	Show the process-based estimation of IUMS (AUST Integrated University Management System) project.	[4.5]																																				