QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

FINAL SEMESTER REGULAR EXAMINATION OF FIRST SEMESTER – THIRD YEAR, 2023 OF 20-BATCH, B.E (SW)

SUBJECT: SOFTWARE CONSTRUCTION

Dated: 01.06.2023   Maximum Marks: 30   Time Allowed: 02 Hours.

NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	QUESTION	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	Discuss abstract data types with example. Also discuss the concepts of Assertions and Exceptions.	2	C3	5	10
Q. 02	Define software quality. Discuss following techniques of improving software quality. i. Formal technical reviews ii. External audits iii. Prototyping	1	C2		10
Q. 03	What is Collaborative construction? Discuss the following Collaborative development practices. i. Pair programming ii. Walkthroughs iii. Code reading	2	C3	5	10

Good Luck

SUBJECT: **INFORMATION SECURITY**

Dated: **29.05.2023**　　　　　　　Maximum Marks: 60　　　　　　　Time Allowed: 3 H

NOTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		QUESTION	CLO	Level	PLO	M
Q. 01	(a)	Draw and explain the DIKW pyramid. What is quality information? Brief three levels at which information can be used.	1	C2	1	
	(b)	Define information security? Discuss the importance of planning a security policy for an organization.	1	C2	1	
Q. 02		Outline merits and demerits of symmetric and asymmetric encryption schemes. What are the essential ingredients that form an encryption scheme? Sketch out the basic attacks that can occur on an information system.	2	C3	2	
Q. 03		Discuss the characteristics, history, strength, and limitations of DES algorithm. Draw the main blocks of different steps/processes to show the working of DES cipher. How does the working of DES algorithm differ from that of the AES algorithm?	2	C3	2	1
Q. 04	(a)	Explain different methods of perimeter defense. Detail the working and types of firewall and IDS.	3	C4	4	0
	(b)	Explain SSL and ACL.	3	C4	4	0
Q. 05		Explain any THREE of the following: 1. Malicious software　　2. Social Engineering 3. Digital Forensics　　　4. Cloud Security 5. Cyber Laws in Pakistan	3	C4	4	1

The End

NOTE: ATTEMPT ALL QUESTIONS. ASSUME SUITABLE DATA WHEREVER NECESSARY.

Q. No.	QUESTION	CLO	Taxonomy Level	
Q. 01 (a)	What is android? Describe its main features. Discuss the layered architecture of an android operating system.	1	C1	
(b)	Explain the role of any two of the following files in android application development. i) AndroidManifest.xml ii) R.java iii) String.xml	1	C1	
Q. 02 (a)	What are the different layout views are available to android developers for designing an application? When Frame and linear layouts are used? Explain any five attributes of Linear layout. How different types of views are positioned when you are using Frame layout?	2	C2	3
(b)	Enlist different types of views. Explain check box view. How to setup click handler in XML for check box? How to receive an event when android check box check gets changed?	2	C2	3
Q. 03	What is a fragment in android? Explain its types. Which type of fragment supports the transition from one fragment to another at run time? Draw the diagram which describes the different states of life cycle of a fragment. Also describe service and its types.	2	C2	3
Q. 04	What is intent and what are its main uses? Describe the difference between implicit and explicit intents. What are the different ways to pass data between activities? Demonstrate with code snippet and indicate type of intent to be used for each of the following cases. i) When source activity pass data to the destination activity and destination activity receives data sent by source activity. ii) When you will perform google search looking for QUEST Nawabshah.	3	C3	4
05 (a)	What is SQLite Database? How Data is Being Stored in the SQLite Database? How you will create and add data to SQLite database in android? Describe the procedure for Developing a simple android application in which you will be able to add data to the SQLite database.	3	C3	4
(b)	Develop an android application (only java code) which displays three buttons on main activity named RED, Green and Blue. The background color of the activity should be changed to appropriate color when user clicks on any of these buttons.	3	C3	4

The End

OTE: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		QUESTION	CLO	Tax Level	PLO
.01	(a)	Define Probability and its types.	3	C2	6
	(b)	If a card is drawn form an ordinary deck of 52 playing cards, find the probability that: (i) The card is red card. (ii) The card is diamond card. (iii) The card is a 10.	3	C2	6
.02	(a)	Define conditional probability.	3	C2	6
	(b)	Two coins are tossed. What is the conditional probability that two heads result given that there is at least one head?	3	C2	6
.03	(a)	What are the independent and dependent events?	3	C2	6
	(b)	Two events A and B are such that $P(A) = \frac{1}{4}, P(A|B) = \frac{1}{2}$ and $P(B|A) = \frac{2}{3}$. (i) Are A and B independent events?: (ii) Are A and B mutually exclusive events? (iii) Find $P(A \cap B)$ and $P(B)$.	3	C2	6
.04		Explain counting principles with examples.	2	C6	6
.05	(a)	A club consists of 4 members. How many sample points are in the sample space when 3 officers president, secretary and treasurer are to be chosen	2	C6	6
	(b)	A three person committee is to be formed from a list of four persons. How many samples points are associated with the experiment?	2	C6	6

The End

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	(b)	Define information security? Discuss the importance of planning a security policy for an organization.	1	C2	1
Q. 02		Outline merits and demerits of symmetric and asymmetric encryption schemes. What are the essential ingredients that form an encryption scheme? Sketch out the basic attacks that can occur on an information system.	2	C3	2
Q. 03		Discuss the characteristics, history, strength, and limitations of DES algorithm. Draw the main blocks of different steps/processes to show the working of DES cipher. How does the working of DES algorithm differ from that of the AES algorithm?	2	C3	2
Q. 04	(a)	Explain different methods of perimeter defense. Detail the working and types of firewall and IDS.	3	C4	4
	(b)	Explain SSL and ACL.	3	C4	4
Q. 05		Explain any THREE of the following: 1. Malicious software 2. Social Engineering 3. Digital Forensics 4. Cloud Security 5. Cyber Laws in Pakistan	3	C4	4

The End

Dated: 10.03.2023   **Maximum Marks: 10**   **Time Allowed: 45 Minutes.**

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	QUESTIONS	CLO	Taxonomy Level	PLO	Marks
01	Summarize the following: I. Engineering economics II. Engineering economic study III. Branches of economics	1	C2	1	[05]
02	Express the importance of decision-making steps to achieve a goal along with software technologies and tools that involved.	1	C2	1	[05]
03	Describe the following: I. Interest rates II. Rate of returns III. Simple and Compound interest. Also solve the following problem. A student borrows $3000 from his uncle in order to finish school. His uncle agrees to charge him simple interest at the rate of **5.5%** per year. Suppose the student waits two years and then repays the entire loan. How much will he have to repay?	1	C2	1	[05]

The End

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	Question	CLO	Taxonomy Level	Marks
Q. 01	Define statistics, what are the characteristics and limitations of statistics?	1	C2	10
Q. 02	Compute the Geometric and Harmonic means for the following distribution of annual death rates:	1	C2	10
Q. 03	Find the median and quartiles for the distribution of examination marks given below:	1	C1	10

For Q. 02:

x	3.95	4.95	5.95	6.95	7.95	8.95	9.95	10.95	11.95	12.95	13.95
f	1	4	5	13	12	19	13	10	6	4	1

For Q. 03:

Marks	30-39	40-49	50-59	60-69	70-79	80-89	90-99
No. of Students	8	87	190	304	211	85	20

The End

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.		Question	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	(a)	What is mobile computing? Define and explain the main components of mobile computing system.	1	C3	1	06
	(b)	When and when not to use native and cross platform mobile applications?	1	C3	1	04
Q. 02		Discuss briefly current trends of mobile application platforms by giving their pros, cons and development technology used. What factors are to be considered when choosing type of mobile application development?	1	C3	1	10
Q. 03	(a)	Elaborate the concept of Context Awareness. Why context awareness computing is important for mobiles? How mobiles sense the different types of contexts and what people issues are involved in these contexts?	1	C3	1	0?
	(b)	Enlist main features of JAVA. How you will create and run java applications using Android Studio?	1	C3	1	0

The End

Dated: 14.03.2023   Maximum Marks: 20   Time Allowed: 01 H

NOTE: ATTEMPT ANY TWO (02) QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	QUESTION	CLOs	Taxonomy Level	PLO:
Q. 01	Define the terms 'Human', 'Computer' and 'Interaction' in perspective of HCI. How HCI is different from UX?	1	C2	6
Q. 02	Enlist the consideration of qualities included during evolution of HCI also Draw a chart of Human Memory classification	1	C2	6
Q. 03	Define Paradigms of Cognitive Science	1	C2	6

Good Luck

Dated: 08.03.2023   Maximum Marks: 10   Time Allowed: 45 Min

NOTE: ATTEMPT ANY TWO (02) QUESTIONS.   ALL QUESTIONS CARRY EQUAL MARKS.

Q. No.	QUESTION	CLOs	Taxonomy Level	PLOs	M
Q#01	What is Software Construction? What activities are not part of Software Construction?	01	C2	1	
Q#02	What prerequisites are necessary for Software Construction? Briefly describe each.	01	C2	1	
Q#03	Differentiate between programming in a language and programming into the language. Name the levels of design.	01	C2	1	

Good Luck