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

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4th SEMESTER) 2022, 20-BATCH, B.S (IT)

SUBJECT: STATISTICS AND PROBABILITY

Dated: 22.11.2022 Maximum Marks: 20 Time Allowed: 01 Hour.

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

Q. No.		Question	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	(a)	Write one motivation to study Statistics.	1	C2	PLO-2	04
	(b)	Briefly explain Sampling in Statistics, and discuss why is conducting a sample survey preferable to conducting a census?	1	C2	PLO-2	06
Q. 02	(a)	The following data set belongs to a population: 5 -7 2 0 -9 16 10 7 Calculate the mean, median, and mode.	1	C2	PLO-2	05
	(b)	Briefly explain the meaning of an outlier. Is the mean or the median a better measures of central tendency for a data set that contains outliers. Illustrate with the help of an example.	1	C2	PLO-2	05
Q. 03	(a)	Write definition of Probability and use of probability in physical world	2	C3	PLO-3	04
	(b)	Briefly explain the difference between the marginal and conditional probabilities of events. Give one example of each.	2	C3	PLO-3	06

Probability.

Good Luck

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

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4TH SEMESTER) 2022, 20 BATCH, B.S (IT)

SUBJECT: COMPUTER NETWORKS

Dated: 24.11.2022 Maximum Marks: 20 Time Allowed: 01 Hour.

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

Q. No.	QUESTION	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	What do you know about modulations? Describe the modulation techniques. Write short note on standards of communications.	1	2	2	10
Q. 02	Why multiplexing is important in communications? Briefly describe the multiplexing techniques.	1	2	2	10
Q. 03	Differentiate between OSI and TCP/IP model. Briefly describe the role of each layer in computer networks for OSI model.	1	2	2	10

Good Luck

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

MID-SEMESTER EXAMINATION OF SECOND SEMESTER – SECOND YEAR (4TH SEMESTER) 2022, 20-BATCH, B.S (IT)

SUBJECT: INFORMATION SECURITY

Dated: 23.11.2022 Maximum Marks: 20 Time Allowed: 01 Hour

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

Q. No.		Question	CLOs	Taxonomy Level	PLOs	Marks
Q. 01	(a)	Given an environment containing servers that handle sensitive customer data, some of which are exposed to the internet, would you want to conduct a vulnerability assessment, a penetration test, or both? Why?	4	C4	3	05
	(b)	Explain some of the reactive tools/techniques that are used for accountability and auditing.	1	C2	2	05
Q. 02	(a)	Briefly explain different threats that can affect each factor of CIA Triad.	1	C2	2	05
	(b)	Name the components of an Information System, among those components briefly explain the main causes of security problems related with the software.	1	C2	2	05
Q. 03	(a)	Name and explain the approach used when the simpler access control models aren't considered robust enough to protect the information.	1	C2	2	05
	(b)	Name and explain the problem in which users could be allowed by the system to carry out activities for which they are not actually authorized.	4	C4	3	05

Good Luck!

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

MID-SEMESTER EXAMINATION OF 2ND SEMESTER – 2ND YEAR (4TH SEMESTER) 2022, 20-BATCH, B.S (IT)

SUBJECT: SOFTWARE ENGINEERING

ıted: 25.11.2022 Maximum Marks: 20 Time Allowed: 01 Hour.

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

No.	QUESTION	CLOs	Taxonomy Level	PLOs	Marks
01	Explain the need of Software Life Cycle Model?	1	2	1	10
02	Define the importance of SRS document (functional and non-functional requirements of the system)	1	2	1	10
03	Explain Modularization, Concurrency and Coupling and Cohesion?	2	2	2	10

Good Luck

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

FINAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER – SECOND YEAR, 2023 OF 20-BATCH, B.S (IT)

SUBJECT: **STATISTICS AND PROBABILITY**

Dated: 12.01.2023 | Maximum Marks: 60 | Time Allowed: 3 Hours

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

Q. No.		QUESTION	CLOs	Taxonomy Level	PLOs	Marks
Q. 01		From the following distribution table calculate mean, median and mode from the table: Weight: 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 Frequency: 6 | 8 | 12 | 14 | 7 | 3	2	C2	2	12
Q. 02	(a)	Differentiate between central tendency and measure of dispersion.	2	C2	2	06
	(b)	Find mean deviation and quartiles from the following data: Masses: 50-53 | 53-56 | 56-59 | 59-62 | 62-65 | 65-68 Frequency: 23 | 24 | 39 | 46 | 54 | 66 Where $\bar{x} = \sum \frac{fx}{\Sigma f}$	2	C2	2	06
Q. 03	(a)	Differentiate between percentile and decile.	2	C2	2	06
	(b)	Calculate mean deviation, variance and standard deviation for ungrouped data 51 52 53 56 61 60 63 62 62 60 59 51 40 41 43 34 35 30 38 36	2	C2	2	06
Q. 04		Explain the following terms: 1. Confusion and confusion matrix 2. Reliability and variability 3. Variance and standard deviation	3	C3	3	12
Q. 05		State and explain bias and write theorem with appropriate example.	3	C3	3	12

The End

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

FINAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER – SECOND YEAR, 2023 OF 20-BATCH, B.S (IT)

SUBJECT: COMPUTER NETWORKS

d: 16.01.2023 Maximum Marks: 60 Time Allowed: 3 Hours

E: ATTEMPT ALL QUESTIONS.

No.		QUESTION	CLOs	Taxonomy Level	PLOs	Marks
1	(a)	Differentiate between IPV4 and IPV6. What are the uses of Internet protocol?	3	C4	2	08
	(b)	Briefly describe the functionality of SFTP.	3	C4	2	04
2	(a)	Differentiate between TCP/IP suit and OSI suit. Describe the function of physical layer in computer networks.	2	C2	2	08
	(b)	What is the role of routers in computer network?	3	C4	3	04
3	(a)	What are famous protocols of transport layer? Explain the service provided by transport layer.	2	C2	2	08
	(b)	Write short note on password authentication protocol.	3	C4	3	04
4	(a)	Consider star topology and you are required to build the LAN; what kind of hardware and software you needed to design the infrastructure with 100 numbers of computers.	5	P3	4	08
	(b)	Write short note on Ethernet cabling	3	C4	3	04
05	(a)	Explain the role of following protocols in networking: 1. Real Time transport control protocol 2. NFS 3. DNS	3	C4	3	09
	(b)	Describe the Bluetooth technology with possible examples.	4	C4	3	03

The End

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

INAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER – SECOND YEAR 2023 OF 20-BATCH, B.S (IT)

SUBJECT: INFORMATION SECURITY

d: 19.01.2023 Maximum Marks: 60 Time Allowed: 3 Hours.

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

. No.		QUESTION	CLOs	Taxonomy Level	PLOs	Marks
01	(a)	Which the type of Intrusion Detection System (IDS) should be applied if a malware is sent in an encrypted form? Which type of firewall should be used to handle such security issue? Justify your answer.	3	3	2	06
	(b)	Demonstrate how the open source intelligence is carried out with the help of an example.	3	3	2	06
Q. 02	(a)	Outline some techniques for social engineering attacks. Also determine some practices to avoid or prevent the social engineering attacks.	4	4	3	06
	(b)	Describe the technique(s) to analyze and filter out traffic that might indicate the presence of malware.	4	4	3	06
Q. 03	(a)	Briefly explain any four tools and techniques that are used to reduce the attack surface of an operating system.	3	3	2	06
	(b)	How the security issues related with protocols like FTP, POP and Telnet should be addressed?	3	3	2	06
Q. 04	(a)	Using the given one-time pad translate the following message into cipher text. "ATTACKRIGHTNOW"	1	2	2	06
	(b)	Explain how the process of "Steganography" is used to hide a message into an image.	1	2	2	06
Q. 05	(a)	Describe the information security issues pertaining to emerging technologies like self-driving cars and Internet of Things (IoT).	2	2	2	06
	(b)	Discuss any four types of cyber-crimes.	2	2	2	06

One-time pad

4	5	13	1	13
2	14	19	9	23
8	2	26	5	2
16	24	1	25	3
6	14	6	10	20

Best of luck!

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

FINAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER – SECOND YEAR 2023 OF 20-BATCH, B.S (IT)

SUBJECT: OPERATING SYSTEMS

: 09.01.2023 Maximum Marks: 60 Time Allowed: 3 Hours.

: ATTEMPT ALL QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

io.		Questions	CLO	Tax: Level	PLO
	(a)	Define the term "Scheduling". Differentiate preemptive and non preemptive scheduling. What is dispatcher? With the help of a diagram, explain how context switching can be performed?	1	2	2
	(b)	Consider the following processes with CPU Burst Time shown against each of them: P1 – 12 P2 – 3 P3 – 29 P4 – 7 Using FCFS, SJF and RR (time quantum = 10 miliseconds) scheduling policies, draw the respective Gantt Charts and calculate average waiting time for all the processes.	2	4	3
	(a)	Explain the function of Memory Management Unit (MMU)? What is internal and external fragmentation? Explain different methods that can be used to avoid external fragmentation.	2	5	3
	(b)	Suppose that at a particular instance of time the available holes in main memory are of size 100KB, 500KB, 200KB, 300KB and 600 KB (in given order). Illustrate how an operating allocates these free holes to the processes having size 212KB, 417KB, 112KB and 426KB (in given order) using First – Fit, Best – Fit and Worst – Fit memory placement methods?	3	3	5
	(a)	What is a deadlock? What are the four necessary conditions which can lead a system towards deadlock? What is deadlock prevention?			
	(b)	If the system has 1 instance of resource type R1, two instances of resource type R2 and one instance of resource type R3, draw the resource allocation graph for the following processes and determine whether there exists a deadlock or not? P2 ⟶ R3 ⟶ P 3 ⟶ R2 ⟶ P2	3	3	5
		Consider the following snapshot of a system at a particular time:	3	3	7

Process	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P_0	0	0	1	2	0	0	1	2	1	5	2	0
P_1	1	0	0	0	1	7	5	0				
P_2	1	3	5	4	2	3	5	6				
P_3	0	6	3	2	0	6	5	2				
P_4	0	0	1	4	0	6	5	6				

	Using Banker's Algorithm, determine the safe sequence of execution of all the processes and state whether the system is in a safe or unsafe state?				
)	What is a file? Define different attributes associated with a file. What are the different operations that can be performed on a file?	1	2	2	
)	With the help of diagrams, discuss different directory structures along with their advantages and disadvantages. With the help of diagrams, explain how an operating system allocates disk space to a file using contiguous, linked and indexed file allocation methods?	2	5	3	

The End

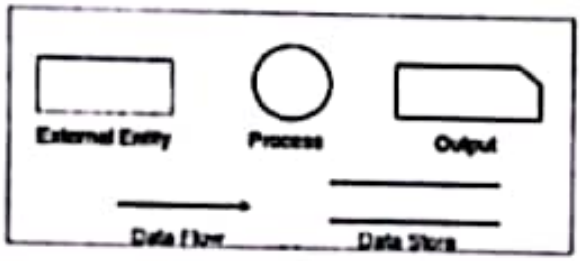
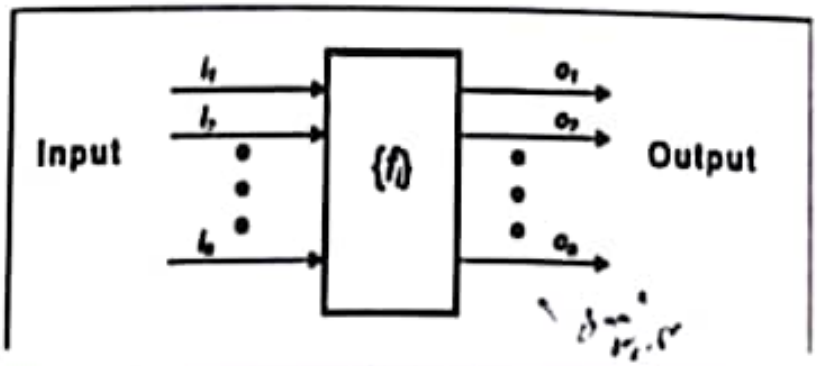
QUAID-E-AWAM UNIVERSITY OF ENGINEERING, SCIENCE & TECHNOLOGY, NAWABSHAH

FINAL SEMESTER REGULAR EXAMINATION OF SECOND SEMESTER – SECOND YEAR 2023 OF 20-BATCH, B.S (IT)

SUBJECT: SOFTWARE ENGINEERING

Dated: 23.01.2023 Maximum Marks: 60 Time Allowed: 3 Hours.

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

Q. No.	QUESTION	CLO	Taxonomy Level	PLO	Marks
. 01	Explain Software Engineering and its characteristic focusing on Transitional, Operational and Maintenance grounds?	1	C1	1	12
. 02	There are multiple variants of software design process, briefly define at least three of them?	2	C1, C2	2	12
. 03	Explain DFD and its types? also describe the following Components of DFD with examples? 	2	C2	2	12
. 04	A formal specification language consists of two sets explain both of them also describe Model-oriented vs. property-oriented approaches with example?	3	C3	3	12
05	The important parts of SRS document are Functional and Non-function requirements, describe both with example also define the following image? 	2, 3	C3	3	12

The End