M.SC. (IT) PART-II

SOFTWARE TESTING & INFORMATION SECURITY

(PAPER-I) (JUNE- 2018)

Q.P.Code:51030

(3Hours) **(Total Marks:75)**

Please check whether you have the right question paper.

N.B.: **1)** **All questions are compulsory.**

2) **Answers to the two sections must be written in same answer book and should be submitted together.**

3) **Write answers to same questions together.**

4) **Mixing of sub-questions is not allowed.**

Q1.	(A)	Compare the following: Dynamic and static testing, Manual and automated testing.	**6**
	(B)	How can the management help in supporting the test process for a company?	**7**
		OR	
Q1.	(A)	Write a note on Defects vs failures.	**6**
	(B)	Write a note on structural and functional tests.	**7**
Q2.	(A)	Write a note on Verification Testing.	**6**
	(B)	Write a note on Validation Testing.	**7**
		OR	
Q2.	(A)	Explain the PDCA strategy/concept used in the software development process.	**6**
	(B)	List and explain the criterion for testing policy,	**7**
Q3.	(A)	How will you test a client server system? Explain	**6**
	(B)	What are the advantages and dis advantages of COTS? How will you test it?	**7**
		OR	
Q3.	(A)	How will you build test data for validation testing? explain	**6**
	(B)	Write a note on acceptance and operational testing.	**7**
Q4.	(A)	Mention different types of computer criminals?	**6**
	(B)	What are malwares? Name a few.	**7**
		OR	
Q4.	(A)	What is a Virus, worm & Trojan horse?	**6**
	(B)	Write a note on “methods to defense computer system”	**7**
Q5.	(A)	How to secure a database? explain	**6**
	(B)	Explain concept of fragmentation & why it is used?	**7**
		OR	
Q5.	(A)	What is a salami slicing attack? explain	**6**
	(B)	Write a note on Backdoors. How they can be exploited.	**7**
Q6.	(A)	What is a copyright law? explain	**6**
	(B)	Write a note on Biometrics authentication.	**7**
		OR	
Q6.	(A)	Write a note on Patents. Can soft wares be patented?	**6**
	(B)	Explain Virtual Private networks.	**7**

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M.SC. (IT) PART-II

ARTIFICIAL INTELLIGENCE & ROBOTICS

(PAPER-II) (JUNE - 2018)

Q.P. Code :11078

[Time: Three Hours] **[Marks:75]**

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.
2. Answers to the two sections must be written in same answer book and should be submitted together
3. Write answers to same questions together.
4. Mixing of sub-questions is not allowed.

SECTION - I

Q.1	**(A)**	Write a short note on Logic Based intelligence.	**6**
	(B)	Explain the various Inference Rules of Predicate Calculus.	**7**
		OR	
Q.1	**(A)**	What is Internal Representation? State its characteristics.	**6**
	(B)	Explain DEFUN w.r.t. LISP.	**7**
Q.2	**(A)**	Explain how to define and use structures in LISP.	**6**
	(B)	Write a short note on SUBSETHOOD theorem.	**7**
		OR	
Q.2	**(A)**	Explain the various comparison functions of LISP.	**6**
	(B)	Explain the common signal functions in Neural Networks.	**7**
Q.3	**(A)**	Explain the working mechanism of a Genetic Algorithm.	**6**
	(B)	Explain the various stages of a KDD process.	**6**
		OR	
Q.3	**(A)**	Explain the concept of competing schemata.	**6**
	(B)	Discuss the various applications of Genetic Algorithms.	**6**

SECTION - II

Q.4	**(A)**	Explain the following specifications of the robot: i. Degrees of freedom ii. Precision and Resolution iii. Tool Orientation	**6**
	(B)	With the help of diagrams explain the different types of grippers.	**7**
		OR	
Q.4	**(A)**	Define Direct Kinematics .With the help of a block diagram explain the relation between the direct and inverse kinematics.	**6**
	(B)	Explain the joint parameters and link parameters with diagrams.	**7**
Q.5	**(A)**	Explain the following workspace fixtures : i. Conveyors ii. Carousels iii. Fixed tools	**6**

	(B)	Explain the Bounded Deviation Algorithm for a straight line motion and its basic principle.	**6**
		OR	
Q.5	**(A)**	Explain pick and place operation in trajectory planning.	**6**
	(B)	Write a short note on Template matching.	**6**
Q.6	**(A)**	How is digital image represented for robotic vision? Write the expression for the digital image.	**6**
	(B)	Define grasp planning. Explain safe, reachable and secured grasp planning.	**6**
		OR	
Q.6	**(A)**	Explain the merits of NC, CNC machines and robots used in industrial automation.	**6**
	(B)	Write a short note on Moment of Inertia and Arm Dynamics of robot arm.	**6**

M.SC. (IT) PART-II

INTELLIGENT SYSTEMS & NEURAL NETWORKS & FUZZY SYSTEMS

(PAPER-III) (JUNE - 2018)

Q.P. Code :11079

[Time: 3 Hours] **[Marks:75]**

Please check whether you have got the right question paper.

N.B:
1. **All** questions are **compulsory**
2. **Answer to the two sections must be written in same answer book and should be submitted together**
3. **Write answer to same questions together**
4. **Mixing of sub-questions is not allowed.**

SECTION-I

Q.1 (A) Write a short note on agents that are artificially intelligent. **06**
(B) Write a short note on "Predicate calculus". **07**

OR

Q.1 (A) Define Artificial intelligent. Mention its uses. **06**
(B) Explain the structure of an intelligent agents? **07**

Q.2 (A) What is an expert system shell? **06**
(B) State and explain the A* algorithm in brief. **07**

OR

Q.2 (A) Write a note on Best first Search. **06**
(B) Differentiate between Depth First Search and Breadth First search. **07**

Q.3 (A) Write a short note on "The Wumpus World environment". **06**
(B) Discuss various real world implementations of intelligent systems. **06**

OR

Q.3 (A) Explain knowledge acquisition in brief. **06**
(B) Explain forward and backward chaining. **06**

SECTION-II

Q.4 (A) Explain single layered feed-forward neural network. **06**
(B) Write a short note on Natural language processing. **07**

OR

Q.4 (A) Differentiate between single-layer and multi-layered network. **06**
(B) Write a note on "Methods of steepest descend-LMS". **07**

Q.5 (A) Differentiate Supervised and unsupervised learning. **06**
(B) Compare biological neuron with artificial neuron. **06**

OR

Q.5 (A) Write a note on fuzzification and defuzzification. **06**
(B) State and explain Boltzmann learning mechanism. **06**

Q.6 (A) Write a note on Generalized RBF networks. **06**
(B) Explain back propagation in context to neural network. **06**

OR

Q.6 (A) What is perceptron and mention perceptron convergence theorem **06**
(B) Explain membership functions in fuzzy logic. **06**

M.SC. (IT) PART-II

MULTIMEDIA SYSTEMS & CONVERGENCE OF TECHNOLOGIES & JAVA TECHNOLOGY

(PAPER-IV) (JUNE - 2018)

Q.P. Code: 50733

(3 Hours) **[Total Marks: 75]**

N.B: (1) All questions are compulsory.
(2) Answers to the two sections must be written in same answer book and should be submitted together
(3) Write answers to same questions together
(4) Mixing of sub-questions is not allowed.

SECTION - I

Q.1	(A)	Write a short note on QOS architecture.	6
	(B)	Write a short note on Multimedia communication for healthcare.	7
		OR	
Q.1	(A)	List all the objectives of JPEG.	6
	(B)	Explain with suitable diagram Raster scanning principle. Define aspect ratio, synchronization, horizontal and vertical resolution.	7
Q.2	(A)	What is XIE? Explain with diagram.	6
	(B)	Explain with the interaction between multimedia services framework objects and client with the help of a diagram.	7
		OR	
Q.2	(A)	Write a short note on Quick Media File (QMF) format.	6
	(B)	List and explain barriers to the widespread use and success of authoring and presentation system.	7
Q.3	(A)	Write a short note on additive and subtractive color mixing.	6
	(B)	Explain the concept of HDTV. What are the problems faced to put it into practice?	6
		OR	
Q.3	(A)	Write a short note on the BISDN reference model.	6
	(B)	Explain the speech generation and perception.	6

SECTION - II

Q.4	(A)	Java is portable and scalable. Comment	6
	(B)	Explain left shift and right shift operators	7
		OR	
Q.4	(A)	What is exception? Explain any 6 Exception classes.	6
	(B)	Explain how Vectors are different from Arrays.	7
Q.5	(A)	Explain the functioning of JavaScript. Write a program to show an alert box saying hello	6
	(B)	Explain RPC paradigm.	6
		OR	
Q.5	(A)	Write a note on middleware and object-oriented middleware.	6
	(B)	Explain fetch-store paradigm.	6
Q.6	(A)	What is the necessity of double buffering?	6
	(B)	Write a note on Enterprise Java Beams	6
		OR	
Q.6	(A)	Explain life-cycle of a servlet.	6
	(B)	Explain Sessions in servlet	6

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