

**M.Sc (IT) [Part – II]**  
**Software Testing**  
**& Information Security**  
**(May-2017)**

**QP Code : 76169**

(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 note on: (i) failure (ii) defects (iii) workbench 6  
 (B) With the help of workbench explain the process of testing a client server system. 7

**OR**

- Q.1** (A) List and explain the concept of application fit. 6  
 (B) What are the objectives of appointing a tool manager? List the three steps used by manager to manage the use of IT tools. 7

- Q.2** (A) What is the difference between testing techniques and tools? 6  
 (B) Explain in detail the test analysis document. 7

**OR**

- Q.2** (A) How to select the software development project team? 6  
 (B) Explain the tasks involved in testing system security. 7

- Q.3** (A) List and explain any four test factors. 6  
 (B) Write a short note on V-concept of testing. 6

**OR**

- Q.3** (A) List and explain the criteria for testing policy. 6  
 (B) Write a short note on Economics of testing. 6

**SECTION – II**

- Q.4** (A) Explain the various types of computer criminals. 6  
 (B) Write a note on: (i) Worm (ii) Logic Bomb (iii) Trojan Horse 7

**OR**

- Q.4** (A) How can we provide user authentication? Give example. 6  
 (B) Explain the different designs for multilevel secure databases. 7

- Q.5** (A) Describe any three types of threats with an example. 6  
 (B) Define the following terms: (i) Copyright (ii) Tort Law 6

**OR**

- Q.5** (A) Explain the concept of segmentation in OS memory management. 6  
 (B) What makes a network vulnerable? Explain the architecture of network security control. 6

- Q.6** (A) What are the various steps involved with risk analysis? Explain each step in detail. 6

- (B) Explain boot sector virus and memory resident virus with their effects of infection. 6

**OR**

- Q.6** (A) Write a note on : (i) IP Spoofing (ii) DDOS 6  
 (B) Explain the concept of VPN (virtual private network). 6

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**M.Sc (IT) [Part – II]**  
**Artificial Intelligence**  
**And Robotics**  
**(May-2017)**

**Q.P. Code :11077**

**[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. What is Internal Representation? State its characteristics. 6  
b. Explain SETQ and LET w.r.t. LISP. 7

**OR**

- Q.1. a. Explain the various Inference Rules of Predicate Calculus. 6  
b. Explain LAMBDA functions in LISP giving examples. 7

- Q.2. a. Give the basic classification of Neural Network Models. 6  
b. Explain how to define and use recursive functions in LISP. 7

**OR**

- Q.2. a. Explain how to define and use structures in LISP. 6  
b. Explain the common signal functions in Neural Networks. 7

- Q.3. a. Write a short note on Roulette Wheel Selection. 6  
b. Explain the working of a Genetic Algorithm. 6

**OR**

- Q.3. a. State the various applications if Genetic Algorithms. 6  
b. Explain the various stages of a KDD process. 6

**SECTION - II**

- Q.4. a. How are robots classified? Explain the following classification based on Motion control. 6  
i) Pick and place robots  
ii) Point to point robots  
iii) Continuous Path  
b. Differentiate between Hard automation and Soft automation. 7

**OR**

- Q.4. a. Explain the Screw Transformation matrix. What is a screw pitch. 6  
b. What is a D-H algorithm? Explain the Pass 1 and Pass 2 of a 4-axis planar articulated robot. 7

- Q.5. a. Explain the role of Tool Configuration vector in inverse kinematics of robots. 6  
b. "Dexterous work envelope is smaller than total work envelope". Justify. 6

**OR**

- Q.5. a. Define path planning and trajectory planning with examples. 6  
b. Describe in brief the different types of workspace fixtures used in the robot manipulation 6 task.

(P.T.O)

- Q.6. a. Explain the edge Detection algorithm. 6
- b. Write a short note on joint interpolation trajectory planning method. 6
- OR**
- Q.6. a. Explain numerically controlled machine. 6
- b. Write a short note on Robot dynamics. 6

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# M.Sc (IT) [Part – II]

(Elective - I)

## Intelligent Systems & Neural Networks & Fuzzy

(May-2017)

Q.P. Code :11081

[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 "First order Logic" **07**
- OR**
- Q.1** (A) Define Artificial intelligent. Mention its applications in academics. **06**  
(B) Explain the structure of an intelligent agent? **07**
- Q.2** (A) What is an expert system shell? **06**  
(B) What are quantifiers in Predicate calculus? Explain with example. **07**
- OR**
- Q.2** (A) Explain 8 queen problem with its possible solution diagram. **06**  
(B) Write a note on Best first Search in context to A\* algorithm. **07**
- Q.3** (A) Write a short note on "The Wumpus World environment". **06**  
(B) State and explain unsupervised learning with examples. **06**
- OR**
- Q.3** (A) Explain knowledge acquisition in brief. **06**  
(B) Write a note on Thinking Humanly – a cognitive model approach. **06**

### SECTION-II

- Q.4** (A) Explain RBF network. **06**  
(B) What is a Perceptron? Mention about perceptron convergence theorem. **07**
- OR**
- Q.4** (A) Write a note on Knowledge representation. **06**  
(B) Write a note on McCulloch and Pitts neuron. **07**
- Q.5** (A) Explain XOR problem in Neural networks. **06**  
(B) Explain Fuzzy Logic with one examples. **06**
- OR**
- Q.5** (A) Write a note on Feature detection in neural network **06**  
(B) State any 2 signal functions and explain. **06**
- Q.6** (A) Explain Baye's theorem. **06**  
(B) Why do we use diffuzzification? **06**
- OR**
- Q.6** (A) Explain any 2 architectures of neural networks. **06**  
(B) Explain the least mean square method. **06**

# M.Sc (IT) [Part – II]

(Elective - II)

## Multimedia Systems & Convergence of Technologies & Java Technology

(May-2017)

Q.P. Code :11881

[Time: 3 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)** What is multimedia? Explain application in the field of entertainment. **06**  
**(B)** Write a short note on QOS. **07**

**OR**

- Q.1 (A)** Define the following terms: **06**  
i. Synchronization  
ii. Noise  
iii. Jitter  
**(B)** Explain with the interaction between Multimedia services framework objects and client with the help of a diagram. **07**

- Q.2 (A)** Explain the following terms: **06**  
i. Snap back time  
ii. Frame rate  
iii. Aspect ratio  
**(B)** List and explain barriers to the widespread use and success of authoring and presentation system. **07**

**OR**

- Q.2 (A)** Write a short note on QMF format. **06**  
**(B)** Write a short note on the BISDN reference model. **07**

- Q.3 (A)** What is XIE? Explain with diagram. **06**  
**(B)** Write a short note on abilities of an intelligent multimedia systems. **06**

**OR**

- Q.3 (A)** Explain the difference between additive and subtractive color mixing. **06**  
**(B)** Write a short note on MIDI. **06**

### SECTION-II

- Q.4 (A)** What is interface? Compare interface and class. **06**  
**(B)** Explain how Vectors are different from Array. **07**

**OR**

- Q.4 (A)** Write note on object oriented middleware. **06**  
**(B)** Explain MIB in detail. **07**

- Q.5 (A)** State and explain different RPC paradigms. **06**  
**(B)** Write short note on Serialization. **06**

**OR**

- Q.5 (A)** Explain TCP/IP protocol suite. **06**  
**(B)** Write note on MVC system. **06**

- Q.6 (A) Explain form object in JavaScript.
- (B) Explain thread lifecycle.

OR

- Q.6 (A) What is Cassette? Explain instrument cassette.
- (B) What are different types of borders in JFC?

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