

M.SC.(I.T.) PART – II
Software Testing
And Information Security
(DEC - 2017)

Q.P. Code :11075

[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) Explain the testing process of Rapid Application Development (RAD). 06
B) Write all the functions of test team. 07

OR

- Q.1 A) Explain the three step process for using a manager to manage the use of IT tools. 06
B) With the help of workbench explain the process of testing a client server system. 07

- Q.2 A) Explain the economics of testing with the help of "testing cost curve". 06
B) Explain in detail the Design Phase Testing step with workbench diagrams. 07

OR

- Q.2 A) Explain how to select the appropriate testing tools. 06
B) What are the test methodologies? Explain. 07

- Q.3 A) Explain the methods used to establish a testing policy. 06
B) How the testing department reports test results to the development team and management. 06

OR

- Q.3 A) Explain the PDCA strategy/concept used in the software development process. 06
B) What is the difference between defects and failures? 06

SECTION II

- Q.4 A) Explain the different method of defense in information security. 06
B) Explain the following: 07

1. Salami Slice Attack
2. Trap Doors

OR

- Q.4 A) What are the different types of flaws? Why we do not have techniques to eliminate or address program security flaws? 06
B) What is meant by vulnerabilities? Explain in details the various categories of vulnerabilities. 07

- Q.5 A) Explain in detail various memories and address protection technique. 06
B) What are the attacks on password? Explain password selection criteria. 06

OR

- Q.5 A) What is sensitive data? What are the factors that make a data sensitive? 06
B) What is Biometrics authentication? Explain advantages and problem with Biometrics authentication. 06

- Q.6 A) What is meant by Contingency planning? What are the various measures to be taken after the crisis occur? 06
B) Explain the aspect of computer security. 06

OR

- Q.6 A) How can we protect the program by copyright law? Explain the benefits and limitations of implementing copyright law. 06
B) Explain copyright for digital objects. 06

M.SC.(I.T.) PART – II
Artificial Intelligence
And Robotics
(DEC - 2017)

Q.P. Code : 11076

[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.
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SECTION - I

- Q.1** (A) Discuss Logic Based Intelligence vs Machine Based Intelligence. **06**
(B) Explain the following w.r.t. Predicate Calculus. **07**
- i. Predicates and Arguments
 - ii. Connectives
 - iii. Quantifiers

OR

- Q.1** (A) What is Internal Representation? State its characteristics. **06**
(B) Explain LIST, FIRST and LAST w.r.t. LISP. **07**

- Q.2** (A) Explain how strings can be used in LISP. **06**
(B) Explain Forward Chaining and Backward Chaining. **07**

OR

- Q.2** (A) Explain the difference between LET and LET* in LISP. **06**
(B) Explain the common signal functions in Neural Networks. **07**

- Q.3** (A) Explain the various crossover techniques giving examples. **06**
(B) Explain the various stages of a KDD process. **06**

OR

- (A) Explain the working mechanism of a Genetic Algorithm. **06**
(B) Write a short note on Competing Schemata. **06**

SECTION - II

- Q.4** (A) Explain the different applications of robots. **06**
(B) Define robotics and automation. Explain the following different types of automation : **07**
- i. Fixed automation
 - ii. Flexible automation
 - iii. Programmable automation

OR

- Q.4** (A) Explain the joint and link parameters involved in any robot arm. **06**
(B) What are homogenous co-ordinates? Define Homogenous Co-ordinate Transformation matrix. Explain the sub-matrices involved in this matrix. **07**

- Q.5** (A) Why Inverse kinematics is not unique? Explain the different methods to solve the inverse kinematics. **06**
(B) Explain the following types of work envelopes: **06**
- i. JSWE
 - ii. Dexterous

iii. TWE

OR

- Q.5** (A) Define the terms Path and trajectory. Explain the speed distribution function. **06**
(B) Explain line and area descriptors and why are they used in shape analysis? **06**

- Q.6** (A) Compare and contrast between configuration space method and the GVD gross motion planning methods. **06**
(B) What are moments? What are invariant moments? How are they made invariant to scaling, Translation and rotation? Illustrate with examples. **06**

OR

- Q.6** (A) Write a short note on control problems due to robot moments of inertia. **06**
(B) Explain the Computer Numerically Controlled Machines. **06**

M.SC.(I.T.) PART – II
Elective - I
Intelligent Systems and
Neural Networks & Fuzzy
(DEC - 2017)

Q.P. Code :11080

[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) Give overview of an intelligent agents? **06**
(B) State and explain 8 queen problem. **07**
- OR**
- Q.1** (A) Write a short note on AI. Mention its applications. **06**
(B) Differentiate Forward and Backward chaining. **07**
- Q.2** (A) Explain First order logic with examples **06**
(B) Explain Planning. Why it is necessary. **07**
- OR**
- Q.2** (A) Write a note on Dempster-shafers belief networks theory. **06**
(B) Differentiate Mutation and Crossover in genetic algorithm. **07**
- Q.3** (A) Write a note on multi-layered feed forward network. **06**
(B) Explain component steps of communications. **06**
- OR**
- Q.3** (A) Mention the application of Intelligent systems in ROBOTICS **06**
(B) Write a note on knowledge acquisition. **06**

SECTION-II

- Q.4** (A) Explain RBF network. **06**
(B) Explain error correction learning. **07**
- OR**
- Q.4** (A) What is supervised learning? Is it better than unsupervised learning? **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 perceptron convergence theorem. **06**
(B) State any 2 signal functions and explain. **06**
- Q.6** (A) Explain back-propagation algorithm. **06**
(B) Why do we used defuzzification? **06**
- OR**
- Q.6** (A) Explain any 2 architectures of neural networks. **06**
(B) Explain the least mean square method. **06**
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M.SC.(I.T.) PART – II
Elective - II
Multimedia Systems & Convergence of
Technologies and Java Technology
(DEC - 2017)

Q.P. Code :11883

[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) State any four applications of multimedia. **06**
Define the following terms:
- i. Multimedia
 - ii. Continuous media
 - iii. Interactive media
 - iv. Hypermedia
- (B) Write a short note on a frame work for multimedia systems. **07**
- OR**
- Q.1** (A) Define the following terms: **06**
- i. Jitter
 - ii. Orchestration
 - iii. Horizontal resolution
- (B) Explain digital representation of sound in general and give a brief survey of speech recognition and speech generation **07**
- Q.2** (A) Explain authoring system in brief with example **06**
(B) Explain compression techniques using block diagram. **07**
- OR**
- Q.2** (A) What is raster scanning? Compare it with Interlace scanning. **06**
(B) Write a short note on architecture for network based multimedia services **07**
- Q.3** (A) Write a short note on multimedia system service architecture. **06**
(B) Write a short note on abilities of an intelligent multimedia systems. **06**
- OR**
- Q.3** (A) Write a short note on Shared Application architectures and embedded distributed objects. **06**
(B) Write a short note on XIE. **06**

SECTION- II

- Q.4** (A) Explain ByteStream class. **06**
(B) Write a program to add popup menu to panel **07**
- OR**

- Q.4** (A) Explain any six String class methods. **06**
(B) Write an application to demonstrate how COM is integrated in Java. **07**
- Q.5** (A) Explain Applet lifecycle. **06**
(B) Write note on java beans. **06**
- OR**
- Q.5** (A) Write client/server socket program to sent message from server to client. **06**
(B) Explain MediaTracker class. **06**
- Q.6** (A) Explain any six Exception classes. **06**
(B) Write note on Simple Network Management Protocol. **06**
- OR**
- Q.6** (A) Explain the servlet life cycle and implementation phase. **06**
(B) Describe java interface to CORBA. **06**