T-4. IT. Sem. VI R

mar - 2019

(2½ Hours)

[Total Marks: 75]

N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1.	**Attempt _any three_ of the following:**	15
a.	Define the term quality and elaborate different views on quality.	
b.	Explain the lifecycle of quality improvements	
c.	What are the quality principles of Total Quality Management (TQM)?	
d.	Explain the structure of quality management system.	
e.	How the quality and productivity are related with each other?	
f.	Write a short note on continual improvement cycle.	

2.	**Attempt _any three_ of the following:**	15
a.	Explain the lifecycle of software testing.	
b.	Write a note on requirement traceability matrix.	
c.	State and explain any 5 principles of software testing.	
d.	Explain the relationship between error, defect and failure with a proper example.	
e.	Discuss the challenges in software testing.	
f.	Describe the structure of a testing team.	

3.	**Attempt _any three_ of the following:**	15
a.	Explain boundary value testing and its guidelines.	
b.	Write a note on improved equivalence class testing.	
c.	Describe the decision table testing technique in detail.	
d.	Write a note on DD path testing.	
e.	Explain the concept and significance of cause and effect graphing technique.	
f.	Compare weak robust and strong robust equivalence class testing.	

4.	**Attempt _any three_ of the following:**	15
a	Explain different methods of verification.	
b	Explain the steps involved in management of verification and validation.	
c	Describe the benefits of review technique.	
d	List and explain how the formal review is carried out.	
e	Explain the VV model of testing.	
f	What are the roles and responsibilities of a reviewer	

5.	**Attempt _any three_ of the following:**	15
a.	What is integration testing? Explain the Big bang approach.	
b.	What is the need of a Security Testing?	
c.	What is performance testing? List different types of performance testing.	
d.	Explain the concept of inter system testing and its Importance.	
e.	Explain the significance of Usability testing.	
f.	Explain Commercial off-the-shelf software testing.	

09/05/19

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1. **Attempt *any three* of the following:**   15
a. What is business intelligence? Explain architecture of the business intelligence.
b. Explain different phases in development business intelligence system.
c. What is decision support system (DSS)? What are the factors that affect the degree of success of the DSS?
d. Explain classification of decisions according to their nature and scope.
e. Define system. Explain closed cycle and open cycle system with suitable example.
f. Describe different phases in the development of a decision support systems(DSS).

2. **Attempt *any three* of the following:**   15
a. What are the phases in the development of mathematical models for decision making?
b. Explain the divisions of mathematical models according to their characteristics, probabilistic nature, temporal dimension.
c. What is data mining? List the real life applications of data mining.
d. Explain categorical and numerical attributes with proper example.
e. Differentiate between supervised and unsupervised learning.
f. Explain the following normalization techniques:
    (i)   Decimal scaling
    (ii)   Min-max

3. **Attempt *any three* of the following:**   15
a. What are the criteria used to evaluate classification methods?
b. Explain top-down induction of decision tree. Examine the components of the top-down induction of decision trees procedure.
c. Write a short note on Naïve Bayesian classifiers.
d. Write k-means algorithm for clustering.
e. Explain the 'Rosenblatt perceptron' form of neural network with diagram.
f. Write a short note on confusion matrix.

4. **Attempt *any three* of the following:**   15
a. Write a short note on market basket analysis.
b. What is use of web mining methods? What are the different purposes of web mining?
c. Explain "tactical planning" optimization model for logistics planning.
d. Explain the Charnes–Cooper–Rhodes (CCR) model.
e. Write a short note on efficient frontier.
f. What is relational marketing? What are the data mining applications in the field of relational marketing?

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5. Attempt *any three* of the following: 15
a. Define knowledge management. What are data, information and knowledge?
b. Describe the knowledge management system (KMS) cycle.
c. Describe how AI and intelligent agents support knowledge management. Relate XML
    to knowledge management and knowledge portals.
d. List and explain characteristics of artificial intelligence.
e. What is knowledge engineering? Explain the process of knowledge engineering.
f. What are the areas for expert system applications?

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1. **Attempt** *any three* **of the following:**   15
a. Explain in detail Architectures for the enterprise.
b. Discuss the PPDIOO phases in detail.
c. Explain different layers of hierarchical Network design.
d. What are different redundancy techniques ? Discuss in detail.
e. Explain HSRP, VRRP and GLBP
f. Explain in details different Network Audit Tools.

2. **Attempt** *any three* **of the following:**   15
a. Compare and Contrast between Switches, Routers and Layer 3 switches
b. What are data center foundation components?
c. What are different types of Virtualization?
d. Explain Spanning Tree Protocol.
e. What is Campus LAN Design? What are the Best Practices for the same?
f. Discuss different strategies for Load Balancing in the Data Center.

3. **Attempt** *any three* **of the following:**   15
a. Write a short note on different WLAN Standards.
b. Explain in detail WLAN Controller Components.
c. Write Short notes on i) Frame Relay   ii) Metro Ethernet
d. Discuss WAN and Edge Design Methodologies
e. What are the different methodologies for Optimizing Bandwidth Using QoS? Explain.
f. Explain various DMZ Connectivity implementation techniques.

4. **Attempt** *any three* **of the following:**   15
a Explain IPV4 Header structure.
b Write short notes on i) BOOTP ii) DHCP
c Explain IPV6 Unicast Address, Anycast Address and Multicast Address
d Discuss IPv6 Address-Assignment Strategies.
e What are the techniques for IPv4-to-IPv6 Transition Mechanisms?
f What are Routing Protocol Metrics and Loop Prevention techniques?

5. **Attempt** *any three* **of the following:**   15
a. What are different Network security threats?
b. Explain Security Risks.
c. Write short note on Risk assessment.
d. Write short notes on i) RMON   ii) NetFlow
e. What are the techniques for Detecting and Mitigating Threats?
f. Compare and contrast IPS and IDS .

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11/05/2019

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1.   **Attempt _any three_ of the following:**   15
a.   Explain the principles of Service Management.
b.   Differentiate between Business and Service units.
c.   Explain Operational Risk.
d.   What is Closed loop control system? Summarize the functions of closed loop control system.
e.   Explain the building blocks of high performance service providers.
f.   Write a short note on IT Service Management.

2.   **Attempt _any three_ of the following:**   15
a.   Explain the objectives of Service Design.
b.   State the two aspects of Service Catalogue. Explain in detail.
c.   Explain the risks factors which are directly associated with the Service Design phase.
d.   Write a short note on IT Service Continuity Management.
e.   Discuss the challenges faced during the Service Design Process.
f.   Explain how Business Service Management enables IT components to be linked to the goals of the business.

3.   **Attempt _any three_ of the following:**   15
a.   Explain the objectives of Service Transition.
b.   Discuss the challenges faced for successful Service Transition.
c.   Write a short note on Change Management.
d.   State the principles for implementing a formal policy for Service Transition.
e.   What is Service Validation and Testing? List its objectives.
f.   Explain the difficult conditions under which Service Transition is implemented.

4.   **Attempt _any three_ of the following:**   15
a   What is Service Operation? Explain the various processes of Service Operations.
b   Differentiate between Internal IT and External business view.
c   State the risks factors in Service Operations.
d   What is Service Management Training? Explain its objectives.
e   Explain the three levels in which Capacity Management should operate.
f   Write a short note on Access Management.

5.   **Attempt _any three_ of the following:**   15
a.   Explain the Deming Cycle.
b.   Discuss the factors to be considered while making a Communication Plan.
c.   State and explain the responsibilities of Service Owner.
d.   Explain the Seven-Step Improvement Process.
e.   Write a short note on Benchmarking.
f.   Justify the need of Tools to support CSI activities.

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