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10IS81

Eighth Semester B.E. Degree Examination, Feb./Mar.2022
Software Architectures

Time: 3 hrs. Max. Marks:100

Note: ***Answer FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. Explain the architecture business cycle in detail. (10 Marks)
b. Explain the different architectural activities in detail. (10 Marks)

2 a. Define software architecture. Explain the different architectural styles. (10 Marks)
b. State the problem of KWIC. Propose implicit invocation and pipes to implement solution for the same. (10 Marks)

3 a. Explain the quality attribute general scenario in detail. (10 Marks)
b. Explain the security tactics with the help of neat diagram. (10 Marks)

4 a. Explain the dynamic behavior of pipes and filters. (10 Marks)
b. Explain structure of slack board with CRC card. (06 Marks)
c. What are the benefits of layered pattern? (04 Marks)

PART – B

5 a. Explain the variants of broker architecture. (10 Marks)
b. Define pattern for software architecture and explain MVC pattern. (10 Marks)

6 a. State and explain the properties of reflection pattern. (10 Marks)
b. Explain the components of microkernel pattern. (10 Marks)

7 a. What are the applications areas of Master Slave pattern? (10 Marks)
b. Define proxy design pattern. Discuss the benefits and liabilities of the same. (10 Marks)

8 a. Explain with diagram, architecture life cycle. (10 Marks)
b. Write short notes on :
(i) Forming team structures.
(ii) Documenting across views. (10 Marks)

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10CS82

Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
System Modeling and Simulation

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO full questions from each part.***

PART – A

1 a. List out atleast 5 circumstances, when simulation is appropriate tool and when it is not appropriate. (05 Marks)

b. With a flow chart, explain the steps in simulation study. (12 Marks)

c. Compare discrete and continuous system. (03 Marks)

2 a. Explain the concepts in discrete event simulation. (07 Marks)

b. Write an Algorithm for event scheduling. (05 Marks)

c. How world views are helpful in developing models? (04 Marks)

d. Explain list processing. (04 Marks)

3 a. Discuss the following concepts:
i) Discuss Random variables
ii) Continuous Random variables
iii) Cumulative distribution function
iv) Expectation. (08 Marks)

b. Explain the following statistical models:
i) Inventory and supply chain systems.
ii) Reliability and maintainability. (06 Marks)

c. Explain the following distributions: i) Uniform ii) Exponential. (06 Marks)

4 a. What are the key elements of the Queuing system? Explain the characteristics of Queuing systems. (07 Marks)

b. List out the primary performance measures of Queuing systems with their meaning. (08 Marks)

c. What is M/G/1 queues? List out the steady state parameters of M/G/1 queue. (05 Marks)

PART – B

5 a. Explain different techniques used for generating Random numbers. (06 Marks)

b. The sequence of number 0.44, 0.81, 0.14, 0.05, 0.93 has been generated. Use the Kolmogorov Smirnovtest with $\alpha = 0.05$ to determine if the hyperthesis that the numbers are uniformly distributed at the interval [0, 1] can be rejected. (08 Marks)

c. Explain different tests for random numbers. (06 Marks)

6 a. List and explain the suggestions that may enhance and facilitate data collection. (07 Marks)

b. Explain Goodness-of-fit test by considering chi-square test. (07 Marks)

c. Explain multivariate and time series input models. (06 Marks)

7 a. Compare Terminating v/s non-terminating simulations. (04 Marks)

b. Explain confidence-Interval estimation. (06 Marks)

c. Explain about analysis for terminating simulations and output analysis for steady-state simulations. (10 Marks)

8 a. With a neat diagram, explain verification of simulation model. (07 Marks)

b. Write a short notes on optimization v/s simulation. (03 Marks)

c. Describe with a neat diagram Iterative process of calibration model. Which are the 3 steps that aid in the validation process? (10 Marks)

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10CS/IS835

Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
Information and Network Security

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Discuss various stages in Incident response planning strategy. (10 Marks)
b. Write and explain the components of sample issue specific policy. (10 Marks)

2 a. Define firewall and describe rules of firewalls in brief. (10 Marks)
b. What are different ways to implement virtual private N/W. explain in detail. (10 Marks)

3 a. Describe the different IDPS detection methods. (08 Marks)
b. List out strength and weakness of IDPS. (05 Marks)
c. What are the strategies need to be considered in deploying IDPS? Explain. (07 Marks)

4 a. Explain different attacks on cryptosystem. (10 Marks)
b. Explain types of cryptographic tools in short. (10 Marks)

PART – B

5 a. Differentiate between Kerbores version 4 and 5. (06 Marks)
b. Explain different security attacks. (08 Marks)
c. Explain the model for network security. (06 Marks)

6 a. List and explain different services of PGP. (05 Marks)
b. Describe 2 forms of MIME and explain the functionality of S/MIME. (08 Marks)
c. Explain the different approaches for public key management. (07 Marks)

7 a. With a neat diagram, explain IP security documents and what are the benefits of IP security. (08 Marks)
b. Describe the IP Sec Authentication header. (05 Marks)
c. Explain two modes of ESP in detail. (07 Marks)

8 a. Explain Alert and Handshake protocols in detail. (10 Marks)
b. List out the key features of SET. (04 Marks)
c. Briefly describe the sequence of events in SET. (06 Marks)

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10CS/IS841

Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
Adhoc Networks

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO full questions from each part.***

PART – A

1 a. Explain any 8 issues need to be considered when designing adhoc wireless networks. (08 Marks)

b. List out any 8 differences between cellular networks and adhoc networks. (08 Marks)

c. Discuss following applications of adhoc wireless networks:
i) Military ii) Emergency operations. (04 Marks)

2 a. Explain hidden and exposed terminal problems with a neat diagram. (05 Marks)

b. Explain Collision Avoidance Time Allocation protocol (CATA) frame format with a diagram. (07 Marks)

c. Explain working principle of Five Phase Reservation Protocol (FPRP) in detail. (08 Marks)

3 a. Brief out factors to be considered while making scheduling decisions. (04 Marks)

b. Explain the operation of Distributed Priority Scheduling (DPS) protocol. (06 Marks)

c. Discuss Multichannel MAC (MMAC) protocol in detail. (10 Marks)

4 a. Explain classification of routing protocols. (08 Marks)

b. List any 4 characteristics of an Ideal routing protocol for adhoc wireless networks. (04 Marks)

c. Explain route establishment and route maintenance in Adhoc On-Demand Distance Vector routing protocol (AODV). (08 Marks)

PART – B

5 a. Explain Core Extraction Distributed Adhoc Routing (CEDAR) protocol by mentioning its advantages and disadvantages. (10 Marks)

b. Explain the operation of Fisheye State Routing Protocol (FSRP). (10 Marks)

6 a. Explain any five issues in designing transport layer protocols for adhoc wireless network. (10 Marks)

b. With a neat diagram, explain the operation of Adhoc-TCP (ATCP) protocol along with advantages and disadvantages. (10 Marks)

7 a. Briefly discuss any 5 network layer attacks. (10 Marks)

b. Discuss any 4 requirements of secure routing protocol for adhoc networks. (04 Marks)

c. Explain security aware adhoc routing protocol with diagram. (06 Marks)

8 a. Discuss any 2 design choices for providing QoS support in adhoc networks. (06 Marks)

b. List the QoS parameters in adhoc wireless networks. (04 Marks)

c. Explain the issues and challenges in providing QoS in Adhoc wireless networks. (10 Marks)

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