

M. E (CMPN) SEM I (REV)
Sub: Elec: Service oriented
Date: 30/05/2013 Architecture

VT-F.H.Exam. May-13-88

Con. 9595-13.

BB-6850

(3 Hours)

[Total Marks : 80

N.B. : Attempt any **four** questions.

1. (a) Define Services and SOA correlate business system to IT system. State the advantages of taking business values while designing the system. 10
(b) Discuss in detail how a business services is implemented. 10
2. (a) What are the different topologies for EAI ? Detail the features of each of them. 10
(b) Write short notes on ESB services and architecture. 10
3. (a) Discuss in detail SOA life cycle, and the adoption of open standards in SOA. 10
(b) Give an example and explain choreography and orchestration. 10
4. (a) Explain the service level architecture of Web Service. Write a sample agent code if web service is implemented using agents. 10
(b) Discuss security in SOA. How web service security is taken care of ? 10
5. (a) Give an overview of WS-Coordination Differentiate atomic and business transaction. 10
(b) How would you integrate new web service with existing ones using BPEL ? 10
6. Write short notes on :- 20
(a) WSDL document structure
(b) UDDI data structure.

ME (Comp) SEM I (CGS)
N.D.M.

May 2013

2015/B

VT-F.H.Exam. May-13-18

Con. 8587-13.

BB-7078

(3 Hours)

[Total Marks : 80

N.B. : (1) Question No. 1 is **compulsory**.

(2) Solve any **three** questions out of the remaining **five** questions.

1. A new college being constructed needs to set up its CAMPUS LAN. The college has 5 Departments, library, office, and exam. section which needs to be interconnected via LAN, to the Internet. The library, office, and server room are on the 1st floor while every other department is housed on separate floors. Four servers are to be configured and installed in the server room. The same management has another Campus 15 kms. away which is already networked. Both the Campuses need to be connected. A mailserver cum web-server is to be hosted at the new campus.
 - (a) Identify the technical goals and list the different applications that would be needed.
 - (b) Design the complete Access layer, Backbone layer and Core layer of this network.

Note : You can make necessary assumption for number of laboratories in each department and number of PC's and other network resources needed.
2.
 - (a) What are the main phases of network design as per the PDIOO approach ? 10
 - (b) Give a detailed description of the various types of backbone architectures. 10
3.
 - (a) Explain SNMP protocol version I and II. Comment on the additional features in version II. 10
 - (b) What is ASN.1 notation ? What is its application in Network Management Standards ? Give examples. 10
4.
 - (a) Describe goals, organization and functions of network management with a neat labelled diagram. 10
 - (b) A network administrator needs to monitor his network for security and fault management. Explain how he can do this with the aid of specialised tools. 10
5.
 - (a) Compare RM on version I and II. 10
 - (b) Describe the functional architecture of TMN. 10
6.
 - (a) What is the significance of the queuing model ? Explain any one queuing model. 10
 - (b) Differentiate between :- 10
 - (i) MDB and MID
 - (ii) 10 Base2, 10 BaseT and 100 BaseT of IEEE 802.3.

8/5/13

ME COMPN SEM I (Rev)
Advanced Algorithms & Complexity

VT-F.H.Exam. April(1)-13-124

Con. 7869-13.

BB-6793

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question No. 1 is **compulsory**.
 (2) Solve any **three** questions from the remaining **five** questions.
 (3) Assume **suitable** data wherever **necessary**.

1. (a) Write merge sort algorithm and analyze it. 10
 (b) Define θ , Ω and big θ and solve the following recurrence relation using substitution 10
 method.

$$T(n) = 3T(n/2) + n$$

2. (a) Find the shortest path from the node A (source) to all the other nodes for the 10
 following weight matrix –

	A	B	C	D	E
A	0	5	8	∞	3
B	∞	0	∞	2	6
C	2	4	0	1	∞
D	2	∞	4	0	∞
E	1	2	∞	3	0

- (b) Use Kruskal's algorithm to find the minimum spanning tree for the following 10
 graph :-

	a	b	c	d	e	f	g
a	0	4	2	1	2	1	∞
b	4	0	2	∞	5	∞	1
c	2	2	0	4	3	8	8
d	1	∞	4	0	∞	3	2
e	2	5	3	∞	0	5	∞
f	1	∞	∞	3	5	0	6
g	∞	1	8	2	∞	6	0

3. (a) Solve the following linear program using simplex 15

$$\begin{aligned} \text{Maximize} \quad & 18x_1 + 12.5x_2 \\ \text{Subject to} \quad & x_1 + x_2 \leq 20 \\ & x_1 \leq 12 \\ & x_2 \leq 16 \\ & x_1, x_2 \geq 0 \end{aligned}$$

- (b) Give approximation algorithm for TSP. 5

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Con. 7869-BB-6793-13.

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4. (a) Explain Ford-Fulkerson method using example. **5**
(b) Find an optimal parenthesization of a matrix chain product whose sequence of **10** dimensions is $\langle 5, 10, 3, 15, 5, 30, 6 \rangle$.
5. (a) Explain vertex cover with example and prove that vertex cover is NP complete. **10**
(b) Explain Rabin-Karp string matching algorithm with an example. **10**
6. (a) Write short notes :- **10**
(i) Genetic Algorithm
(ii) K-server problem.
(b) Explain string matching algorithm using Finite Automaton with example. **10**
