

M.E. SEM I (Choice Base) (IT)
IT Infrastructure Design
Q.P. Code : 862802

P.Code. 862802
May 2017.

(3 Hours)

[Total Marks : 80]

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

1. A new college being constructed needs to setup its CAMPUS LAN. The college has 5 departments. Library, Office, Sports, Security and exam section which needs to be interconnected via LAN to the Internet. The library, office and the server room are on the 1st floor while every other department is on separate floors. Four servers are to be configured and installed in server room. The same management has another campus 15kms away which is already networked. Both campuses need to be connected. A mail server cum web server is to be hosted at the new campus. 20

Questions :

1. Identify the technical goals and list different applications that would be needed.
2. Design the complete access layer, backbone layer and core layer of this network.
2. (a) What are the different steps of top-down network design? List typical technical goals. 10
(b) Explain hierarchical network design model with the help of an example. 10
3. (a) Differentiate between design rule of Fast Ethernet, Gigabyte Ethernet & 10G Ethernet. 10
(b) What are the key features of the distribution layer? What is the advantage of using a layer-3 switch in the core of campus network? Can layer-2 switch be used instead? Why or why not? 10
4. (a) What are the different data center topologies? Explain any one in detail. 10
(b) Explain intra controller and inter controller roaming process in WLAN controller. 10

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5. (a) Explain FC protocol stack and types of ports used by FC-SAN. 10
(b) What do you mean by Software Defined Networks? Explain Open Flow architecture. 10
6. Write short notes on (any four) : 20
- (i) PPDIOO Network Life cycle
 - (ii) Controller redundancy design in WLAN
 - (iii) General design consideration for all Data Center
 - (iv) WLAN Security Standards
 - (v) Cloud data center building blocks
 - (vi) NOX and POX
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ME / INFT / Sem - I - [Choice Base] / MAY - 2017

Q. P. Code : 855300

(3 Hours)

[Total Marks : 80

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

- (2) Attempt any 3 questions out of rest.
- (3) Figure to the right indicate full marks.
- (4) All questions carry equal marks.

1. A Company wants to design database for sales with respect to the four dimensions, namely time, item, branch, and location.
 - a) Design tables with assuming suitable attributes and normalize the database. 5
 - b) Define primary key, foreign key with its importance in database design. List Primary and foreign key in each table of above tables. 5
 - c) Draw Star schema and Snowflake schema for above design. 5
 - d) Explain difference between star schema and snowflake schema with purpose of normalization. 5
2.
 - a) Explain Computer based Information System with its types. 10
 - b) Explain ERP system with its functions, benefits and limitations. 10
3.
 - a) Define relational database. Explain its advantages and disadvantages in detail. 10
 - b) Differentiate between B2B, B2C, C2C AND B2E electronic commerce. 10
4.
 - a) Explain customer relationship management with various types. 10
 - b) What is Social Commerce? Briefly describe the benefits and risks of social commerce to business. 10
5.
 - a) Explain various threats to information system. 10
 - b) Explain Traditional System Development life cycle. 10
6. Write short notes on any two 20
 - a) Big data
 - b) Cloud Computing Model
 - c) E-Commerce

QP Code : 64291

(3 Hours)

[Total Marks : 80

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

(2) Attempt any **three** questions out of remaining questions.

(3) Assume suitable data if required.

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| 1. (a) What is UX engineering? | 5 |
| (b) Explain different UX goals. | 5 |
| (c) What is the need for UXE? | 5 |
| (d) What do you mean by roots of usability? | 5 |
| 2. (a) Explain with an example why UX needs a business case. | 10 |
| (b) Explain UX process lifecycle template. | 10 |
| 3. (a) What is prototyping? Why it is needed? Discuss different types of Prototypes. | 10 |
| (b) Explain different usage models with examples. | 10 |
| 4. (a) Explain UX evaluation techniques. | 10 |
| (b) Describe UX design guidelines. | 10 |
| 5. (a) Explain interaction cycle and user action framework content categories. | 10 |
| (b) Create a UX design of your choice with respect to | 10 |
| • Conceptual Design-Site maps | |
| • Wire frame | |
| • Prototype | |
| 6. Write short notes on (any two) | 20 |
| (a) Usability paradigms and principles | |
| (b) User requirement analysis for UXE project | |
| (c) Types of Affordances | |
| (d) Practical value of User Action Framework. | |