

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question **one** is **compulsory**.
 (2) Attempt any **four** out of remaining.
 (3) Figures to the **right** indicate **full** marks.

1. (a) Compare and contrast the object and relational data models. 10
 (b) Describe the steps for mapping EER schema to an ODB schema. 10
 2. (a) What do you mean by data fragmentation, why is fragmentation useful in distributed databases ? Explain in brief different types of fragmentation. 10
 (b) Explain in brief Deductive database system. 10
 3. (a) Describe different architecture for parallel database. 10
 (b) Write a detailed note on Geographical Information System. 10
 4. (a) Explain design and implementation issues in mobile databases. Comment on limitations. 10
 (b) What are the software components in Client-server system ? Explain 2-tier and 3-tier client server architecture. 10
 5. (a) What is the difference between valid time, transaction time and bitemporal relations. 10
 (b) Explain SQL3 features with examples. 10
 6. (a) What is the difference between structured, semistructured and Unstructured data ? What do you understand by the term self-describing data. 10
 (b) Explain the following concept with the help of example :- 10
 (i) Object Identity
 (ii) Object Structure.
 7. Write short notes on (any **four**) :— 20
 (a) Spatial Databases
 (b) ODL
 (c) Persistent Programming Languages
 (d) X query and X path
 (e) Complex Objects.
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(OLD COURSE)

GS-4378

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

(2) Attempt any **four** from **remaining** questions.

(3) **Figures to right** indicate **full marks**.

(4) Assume data wherever **necessary**.

1. (a) Explain UMTS basic architecture and also explain frame structure for UMTS FDD Mode. 10
(b) Explain the security algorithm used in GSM. 10
 2. (a) Why is routing in adhoc complicated ? Where are special challenges ? 10
(b) Explain wireless transaction protocol. 10
 3. (a) Explain basic handover scenario for WATM. 10
(b) Explain digital video Broadcasting. 10
 4. (a) Explain Power management in IEEE 802.11 infrastructure network and adhoc network. 10
(b) Compare 802.11 a,b,g. 10
 5. (a) Explain architecture of GSM system. 10
(b) Explain DECT system architecture reference model and protocol architecture. 10
 6. (a) Explain what is mean by Tunneling and Encapsulation. How it work in IP-in-IP minimal and generic routing encapsulation ? Show schematic. 10
(b) What is need of spreading the spectrum ? Explain different types of spreading the spectrum. 10
 7. Write short notes on (any **four**) :- 20
 - (a) WTA Logical Architecture
 - (b) Indirect TCP and Mobile TCP
 - (c) QOS in mobile network
 - (d) IPV6 advantages offer for mobility
 - (e) Near and far terminals
 - (f) IHSS transmitter and receiver.
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