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

Q1 Answer *any two* of the following: 12

A Discuss the common characteristics of distance vector routing protocol.

B Explain the SPF algorithm.

C Explain the following:

i) Equal cost load sharing

ii) Non-equal load sharing

iii) Recursive table lookup

D What are sequence numbers? Explain Linear, Circular and Lollipop shaped sequence number spaces.

Q2 Answer *any two* of the following: 12

A What are the states of OSPF enabled interfaces? Explain OSPF state machine.

B What are the different types of OSPF routers? Explain.

C Enumerate the differences between OSPFv2 and OSPFv3.

D What are the different challenges when OSPF uses multipoint Frame relay subinterfaces?

Q3 Answer *any two* of the following: 12

A Explain in detail the requirements for forming eBGP neighbourships.

B Explain the different BGP path attributes that affect the best path algorithm.

c Explain the functions used by neighbour discovery protocol.

d Explain the concept of IPv6 tunnelling encapsulation and decapsulation.

Q4 Answer *any two* of the following: 12

a What is the need for implementing spanning tree protocol? What are the features of spanning tree protocol?

b What is Etherchannel? What are the protocols involved in it? Explain.

c Explain:

i) NAT in an Enterprise

ii) NAT with external partners

d Enumerate the characteristics of multiprotocol label switching at Layer 2 and Layer 3. What are the considerations that must be taken into account when designing customer multiprotocol label switching virtual private networks?

Q5 Answer *any two* of the following: 12

a With the help of a neat diagram explain the architecture of data center.

b What are blade servers? What challenges need to be considered while designing and supporting the data center network?

c Explain the different storage topologies.

d Explain the following SAN technologies:

i) Fabric Shortest path first

ii) Zoning

ADBMS

(REVISED COURSE)

(2 ½ Hours)

Total Marks: 60

N. B.: (1) All questions are compulsory.
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(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

Q1	**Attempt any two questions**	12
a	What are the different relationship types? Quote an example of degree greater than two with valid examples?	6
b	What is a disjoint constraint? What is an overlapping constraint? Explain each with example.	6
c	Explain user defined abstract data types and Structured types. Discuss the constraints and characteristics of specialization and generalization.	6
d	What are the difference and similarities of the EXTENDS and interface of inheritance?	6
Q2	**Attempt any two questions**	12
a	Discuss the functionality issues and efficiency issues in processing queries in an object relational database system.	6
b	Explain the following with respect to object query language: i. Views and Named Queries ii. Collection Operators iii. Grouping Operators.	6
c	Explain the concept of nested relation in ORDBMS with example.	6
d	Consider a *photo album application* where the user profiles and photo albums needs to be mapped to a distributed data structure with each person in the photo is linked to their user profile with its creation date , photo classification , number of likes / hits and location details. Design Object Oriented Database Schema for same.	6
Q3	**Attempt any two questions**	12
a	What are the two joining methods used in query processing. Explain the differences between them.	6
b	Explain the concept of dataflow network of operators for parallel join	6
c	How is a vertical partitioning of a relation specified? How can a relation be put back together from a complete vertical partitioning?	6
d	Explain the benefits and drawbacks of pipelined parallelism.	6
Q4	**Attempt any two questions**	12
a	Difference between XML, DTD and XML Schema with an example.	6
b	What are three main types of XML documents? What is the use of XML DTD?	6
c	Explain entities and attributes in XML. What are character entity references? Explain the anatomy of XML document.	6
d	Explain the structure of an XML document .What are entity references? Enumerate the five predefined entity reference in XML.	6

[TURN OVER]

Q5	Attempt any two questions	12
a	Explain with a suitable example the ECA model of active database	6
b	What is Geographic Information System (GIS)? What are its components? How does GIS work? What are the applications of GIS?	6
c	What is the difference between structured, semi-structured and unstructured data?	6
d	What is the deductive database? Compare active and deductive databases? Explain the different terminologies used in datalog	6

(REVISED COURSE) QP Code :13992

CC (2 ½ hrs) Max Marks: 60

N. B.: (1) All questions are compulsory.
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(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.

Q1 Answer *any two* of the following: 12
a. Discuss the platform of evolutionary trends with their developments?
b. How distributed systems emphasize both resource distribution and concurrency or high degree of Parallelism.Justify your answer with examples?
c. Enumerate differences between Amdahl's law and Gustafson's law?
d. Illustrate on various dimensions of scalability and performance laws?

Q2 Answer *any two* of the following: 12
a. Explain six orthogonal attributes on which computer clusters are classified?
b. OS-Level virtualization is preferred as compared to hardware level virtualization- Justify?
c. How cloud computing platform differ from conventional computing?
d. Explain the challenges in cloud architecture development?

Q3 Answer *any two* of the following: 12
a. What are extended cloud computing services?
b. How is distributed defense provided against Distributed Denial of Service flooding attacks?
c. List and brief the various system issues for running a typical parallel program in either a parallel or distributed network?
d. Explain Map reduce actual data and control flow?

Q4 Answer *any two* of the following: 12
a. With the help of diagram, explain the features of programming azure cloud platform? 6
b. Explain sector/sphere system architecture? 6
c. Explain the architecture and components of Aneka? 6
d. What is Open Stack? Explain Nova architecture and Open Stack storage? 6

Q5 Answer *any two* of the following: 12
a. What is Data-Intensive Scalable Computing? Compare it with Supercomputer?
b. What is Twitter? With the help of a neat diagram explain the architecture of twitter and access control?
c. How is QoS calculated in Cloud Computing?
d. List and explain properties of social network group?

VS-Con.:7290-14.

(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

Q1		**Attempt any two questions**	12
	a.	Explain the concept of modulation and discuss its verious types.	
	b.	Discuss the concept of Hidden and Exposed terminal. How it can be resolved.	
	c.	Explain the concept of multiplexing. Discuss code division multiple access (CDMA) technique in detail.	
	d.	Discuss different advantages and limitation of celluiar system.	
Q2		**Attempt any two questions**	12
	a.	Discuss different types of handover in GSM system.	
	b.	Discuss various security services define in GSM system.	
	c.	Differentiate among GEO, LEO, and MEO.	
	d.	Why GPRS services are needed. Discuss its technical specifications in detail.	
Q3		**Attempt any two questions**	12
	a.	Discuss the general architecture of Digital Audio Broadcasting (DAB) and explain each block in detail.	
	b.	List the advantages and disadvantages of infrared and radio transmission	
	c.	Discuss the specification and structure of Multimedia object transfer protocol.	
	d.	Discuss various features of HiperLAN2 standard.	
Q4		**Attempt any two questions**	12
	a.	Discuss basic reference architecture of WATM. Discuss its services.	
	b.	Discuss the process of IP packet delivery over mobile network.	
	c.	List various specifications and features of IPv6.	
	d.	Discuss about Dynamic host configuration protocol (DHCP) in detail.	
Q5		**Attempt any two questions**	12
	a.	Discuss various advantages and limitation of Mobile TCP.	
	b.	Discuss different implecations of Traditional TCP on Mobility.	
	c.	Compare between I-TCP and Snooping TCP in detail.	
	d.	What are the primary goals of the WAP forum efforts and how are they reflected in the initial WAP protocol architecture?	