T. E. (Comp) C.B.G.S.
MCC 28/05/15
Sem VI

QP Code : 5070

(3 Hours) [Total Marks : 80

N.B.: (1) Question 1 is **compulsory**.
(2) Attempt **any 3** questions out of the rest.

1. (a) Draw and Explain Electromagnetic Spectrum for communication. 5
(b) Explain Hidden station and exposed station problems in WLAN 5
(c) Explain various types of handoffs in GSM network 5
(d) Explain GSM Frame Hierarchy 5

2. (a) Explain synchronization in 802.11 MAC management layer for both Infrastructure as well Ad-hoc WLANs. 10

(b) Explain GPRS architecture in detail. Compare it with GSM architecture 10

3. (a) Compare HIPERLAN-1, HIPERLAN-2 and 802.11 W-LAN 10

(b) Explain the functioning of I-TCP and SNOOP-TCP , giving advantages and disadvantages of both. 10

4. (a) Why is Mobile IP packet required to be forwarded through a tunnel. Explain minimal techniques of encapsulation of Mobile IP packet 10

(b) Explain functioning of Bluetooth Baseband layer 10

5. (a) Explain UMTS architecture. Explain UTRA -FDD and TDD modes 10

(b) Explain how Mobile Terminated Call works detailing the role of HLR and VLR 10

6. Short Notes on **any 2** 20
(a) Wireless Local Loop
(b) Privacy and Authentication in GSM
(c) Android framework

TE-SEM VI (CBSGS) - Comp D.D.

May 2018

(3 Hours)

QP Code : 5067

[Total Marks: 80]

N.B. : (1) Question **No. 1** is **compulsory**.
(2) Answer any **three** out of the **remaining** questions.

Q.1 Consider following global schema of an company database who keep track of company's employees , department and projects.

EMP

ENO	ENAME	TITLE
E1	JOHN	Elect Eng
E2	SAM	Syst. Anal.
E3	TOM	Mech Eng
E4	SMITH	Programmer
E5	DAVID	Syst. Anal.
E6	GAYLE	Elect Eng.
E7	JACK	Mech Eng.
E8	HARRY	Sys Anal

ASG

ENO	PNO	RESP	DUR
E1	P1	Manage	12
E2	P1	Analyst	24
E2	P2	Analyst	6
E3	P3	Consultant	10
E3	P4	Engineer	48
E4	P2	Programmer	18
E5	P2	Manager	24
E6	P4	Manager	48
E7	P3	Engineer	36
E8	P3	Manager	40

PROJ

PNO	PNAME	BUDGET	LOC
P1	e-commerce	150000	Delhi
P2	Database	135000	Mumbai
P3	ERP	250000	Mumbai
P4	CAD/CAM	310000	Pune

PAY

TITLE	SAL
Elect Eng.	40000
Syst. Anal	34000
Mech Eng	27000
Programmer	24000

[a] Perform Primary Horizontal Fragmentation (PHF) of relation PROJ with pname and budget of projects given their number issued at three sites and access project information according to budget one site accesses ≤200000 other accesses >200000. [06]

[b] Explain how the above resulting PHF fulfill the correctness rules of fragmentation. [04]

[c] Perform Derived Horizontal Fragmentation (DHF) of relation EMP with respect to PAY *{p_1:sal>30000 and p_2:sal≤30000}* [06]

[d] Explain how the above resulting DHF fulfill the correctness rules of fragmentation. [04]

Q.2 [a] Draw and Explain model of transaction management in DDB. [10]

[b] Explain Following transparency for distributed database. [10]
(i) Network Transparency (ii) Replication Transparency (iii) Fragmentation Transparency

[TURN OVER

JP-Con. : 10230-15.

Q. 3 [a] Draw and explain Layers of Query Processing in distributed database. [10]
[b] What is query optimization? List distributed query optimization alogorithims and explain any one from that. [10]

Q.4 [a] University databse contains information about the course and the Prfiessors who teach the courses in each semster. Each course must also have information about the number of student enrolled, room no. data and time (when and where the cousre is conducted) [10]
i) Write DTD rules for above XML documents.
ii) Create an XML schma for above XML documets.
[b] Describe any two method for deadlock detection in distributed database? [10]

Q.5 [a] Explain Timestamp-based councurrency control mechanisms in DDB. [10]
[b] State the purpose of 2PC protocol. Explin 2PC in detail. [10]

Q.6 Write Short notes on(Any Two) [20]
a) Architecture of Heterogeneous database
b) Affinity Matrix
b) Design issue of Distributed Database.
c) Distributed Database Architecture

1 T.E. Sem VI (CBGS)(Computer). 18/5/15
Software Engg

QP Code : 5065

(3 Hours) **[Total Marks :80**

N.B. : (1) Question No. 1 is compulsory.
(2) Attempt any three questions out of remaining five.

1. (a) Write suitable applications of different software models. 10
(b) Compare Verification and Validation Testing. 10
(c) Explain COCOMO Model.
(d) Explain the different types of software Maintenance.

2. (a) What is Agile methodology? Explain it with the principles used and give example of any One such software model. 10
(b) Explain Change Control and Version Control in SCM. 10

3. (a) Explain size oriented software engineering metrics. 10
Find function points for an e-commerce application with following data,

Number of user Inputs	50
Number of user Outputs	40
Number of user Inquiries	35
Number of user Files	06
Number of External Interfaces	04

Assume suitable complexity adjustment factors and weighting factors.

(b) What Is Coupling and Cohesion? Explain different forms of it. 10

4. (a) What are the features of a good user Interface? Design and interface for Online Air Ticket Reservation System. 10
(b) Explain different metrics used for maintaining Software Quality. 10

5. (a) What is SRS document? Build an SRS document for Online Student Feedback System. 10
(b) What are Software Risks? Write a note on RMMM for delayed projects. 10

6. (a) Compare Black box and White Box Testing. Find cyclomatic complexity of following code 10

```
IF A = 10 THEN
IF B > C THEN
        A=B
        ELSE A= C
END IF
END IF
        PRINT A
        PRINT B
        PRINT C
```

(b) Explain software Reverse Engineering In detail. 10

T.E. (Computer) - VI
S.P.C.C.

12/5/2015

QP Code : 5061

(3 Hours) **[Total Marks : 80**

N.B. 1. Q.1 is Compulsory.
2. Solve any THREE from Q.2 to Q.6
3. Assume suitable data whenever necessary, with justification.

Q.1 A) Differentiate between application program and system program. 5
B) State the reason for assembler to be multipass program. 5
C) Explain Functions of loader. 5
D) What is flow graph? State its significance in code generation. 5

Q.2 (A) For following code what will be output generated by Pass-I and Pass-II for two pass assembler. Explain with database. 10

```
ABC     Start   0
        USING   *,15
        L       1,FIVE
        A       1,FOUR
        ST      1,TEMP
FOUR    DC      F'4'
FIVE    DC      F'5'
TEMP    DS      1F
        END
```

(B) Explain operator precedence parser along with example. 10

Q.3 (A) Generate three address code for following code. 10

```
While (a<b)  do
  If  (c<d)   then
        x=y+2
  else
        x=y-2
```

(B) Discus with example quadruple, triple and indirect triple. 10

Q.4 (A) Construct predictive parsing table for following grammar. 10

S→ A
A→ aB | Ad
B→ bBC | f
C→ g

(B) Explain loop optimization with example. 10

Q.5 (A) What are different issues in code Generation, expalin in detail. 10
(B) Explain run time storage organization in details. 10

Q. 6 Write short notes 20
(A) Code motion
(B) LEX and YACC
(C) Software tools
(D) Left recursion and left factoring removal technique