AIKTC/KRRC/SoET/ACKN/QUES/2017-18/ **Date:** _____

School: SoET-CBSGS **Branch:** COMP. ENGG. **SEM:** VI

To,
Exam Controller,
AIKTC, New Panvel.

Dear Sir/Madam,

Received with thanks the following **Semester/Unit Test-I/Unit Test-II (Reg./ATKT)** question papers from your exam cell:

Sr. No.	Subject Name	Subject Code	Format		No. of Copies
			SC	HC	
1	SYSTEM PROGRAMMING & COMPILER CONSTRUCTION	CPC601		✓	
2	SOFTWARE ENGG.	CPC62		✓	
3	DISTRIBUTED DATABASE	CPC603		✓	
4	MOBILE COMMUNICATION & COMPUTING	CPC604		✓	
5	ELECTIVE I:			×	
6					

Note: SC – Softcopy, HC - Hardcopy

(Shaheen Ansari)
Librarian, AIKTC

TE-sem-VI-CBSGS-comps-SPCC 14/5/18

Q.P.Code:11587

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

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

Q1. (a) Differentiate between system software & application software? [05]
(b) Explain the role of finite automata in compiler theory. [05]
(c) Explain the various functions of a loader. [05]
(d) Compare compilers and interpreters. [05]

Q2. (a) With reference to assembler, explain the following tables with suitable example.
(i) POT (ii) MOT (iii) ST (iv) LT [10]
(b) Explain the different code optimization techniques in compiler design. [10]

Q3. (a) Explain the different issues in code genetrations. [10]
(b) Explain working of direct linking loader with example, showing entries in different databases built by DLL. [10]

Q4. (a) Construct a predictive parsing table for the grammar : - [10]

$E \rightarrow TE'$
$E' \rightarrow +TE' / E$
$T \rightarrow FT'$
$T' \rightarrow *FT' / \epsilon$
$F \rightarrow (E) / id$

(b) Explain the different error recovery techniques [10]

Q5. (a) Explain the different storage allocation strategies in detail. [10]
(b) Differentiate Top-down and Bottom-up parsing techniques. Explain shift reduce parser in detail. [10]

Q6. (a) Explain the different phases of compiler. Illustrate all these phases for the following statement:
a = b + c * 5 [10]
(b) Write short note on: [10]
(i) Parameterized Macros
(ii) YACC

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University of Mumbai

DASHBOARD

Notices

1 Correction in Program Code : T2826 - T.E.(COMPUTER)(Rev-2012)(CBSGS)(SEM VI) / T0868 - **SYSTEM PROGRAMMING AND COMPILER CONSTRUCTION Q.P Code : 11587**

Read As,

Changes:
Q4 a) second expression should be

$E' \rightarrow +TE' / \varepsilon$

Instead of

$E' \rightarrow +TE' / E$

(75)

TE-sem-VI - CBSGS-comps - SE

18/5/18

Q.P. Code :11614

[Time: 3 Hours] **[Marks:80]**

Please check whether you have got the right question paper.

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

Q.1 Develop the SRS for Hospital Management System. 20

Hospital Management System is a process of implementing all the activities of the hospital in a computerized automated way to fasten the performance.

This system is to maintain the patient details, lab reports and to calculate the bill of the patient. You can also manually edit any patient details and issue bill receipt to patient within few seconds.

SRS for the hospital Management system should include the following:

a) Product perspective
b) Scope and objective
c) Functional requirements
d) Non-functional requirements

Q.2 a) Explain cohesion and Coupling. Explain different types with detailed example. 10

b) Explain in detail Service-Oriented Software Engineering. 10

Q.3 a) Explain what is cyclomatic complexity and different methods to calculate it. Find the cyclomatic complexity of following code 10

```
int x, y, power;
float z;
input (x, y );
if (y<0)
  power = - y;
else
power = y;
z = 1;
while (power ! = 0 ){
z =z * x;
power = power – 1;
}
if (y<0)
    z = 1/z;
output (z);
end
```

b) Explain Risk and its types? Explain the steps involved in setting up or generating RMMM plan. 10

Q.4. a) Consider a software project using Semi-detached mode with 30,000 lines of code. Obtain effort estimation, Duration estimation and person estimation. 10

b) Explain steps in version and change control. 10

(P.T.O)

Q.5. a) Explain software reverse engineering in detail. 10
b) What is FTR? Explain the Review guidelines considered during FTR. 10

Q.6. Write short notes on any two:- 20
(a) Software Configuration Management
(b) Test Driven Development
(c) Agile Process Models
(d) User interface design

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(75) TE-sem-VI - OBSCS - Comps - DD 24/5/18

Q. P. Code: 38884

(3 Hours) Total marks : 80

Note:

- Question No. 1 is compulsory.
- Attempt any Three questions out of remaining questions.
- Make suitable assumptions whenever necessary.

Q 1: [5 X 4]

a) What do you mean by Distributed Serializability?
b) What are the objectives of distributed query processing ?
c) Explain state transition diagram for 3PC.
d) What are the different types of Fragmentation in distributed databases?

Q 2:

a) Explain Two-phase Commit Protocol.. [10]
b) Explain the reference Architecture of tightly coupled Federated MDBS. [10]

Q 3:

a) Explain locking-based concurrency control protocols. [10]
b) Explain the following transparencies in distributed database design. Data distribution transparency, transaction transparency performance transparency, DBMS transparency [10]

Q 4:

Consider the global schema: [20]
BOOKS(Book#, Primary_author, Topic, Total_stock, $price)
BOOKSTORE(Store#, City, State, Zip, Inventory_value)
STOCK(Store#, Book#, Qty)
1) Show 2 example of horizontal fragmentation.
2) Show 2 example of Vertical fragmentation.
3) Show 2 example of Derived fragmentation.

Q 5:

a) Explain distributed Deadlock Prevention.. [10]
b) Give the DTD or XML schema for an xml representation of the following nested-relational schema: [05]
Emp = (ename, ChildrenSet **setof**(Children), SkillSet **setof**(Skills))
Children = (name, Birthday)
Birthday = (day, month, year)
Skills = (type, ExamsSet setoff(Exams))
Exams = (year, city).
c) Write a query in XPath on the schema of (Q5 b) to list all skill types in Emp. [05]

Q 6:

Write notes on the following. **(any two)** [10 X 2]

a) Component Architecture of Distributed DBMS.
b) Phases of query processing.
c) 2PC recovery protocols.
d) Querying and transformation of XML data.

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Q.P. Code: 36774

[Time: Three Hours] **[Marks:80]**

N.B: Please check whether you have got the right question paper.
1. **Question No. 1 is compulsory.**
2. **Attempt any three questions out of the remaining questions.**
3. **Make suitable assumptions wherever necessary.**

Q.1.	**A)**	Discuss multiplexing in wireless communication.	**10**
	B)	Explain the need of specialized MAC in wireless communication.	**10**
Q.2.	**A)**	Explain in detail Bluetooth protocol architecture.	**10**
	B)	Explain HIPERLAN 1 MAC sublayer.	**10**
Q.3.	**A)**	Explain agent advertisement and discovery registration in mobile networks.	**10**
	B)	Why and how can optimization in mobile IP be achieved.	**10**
Q.4.	**A)**	Explain GSM architecture in detail.	**10**
	B)	Explain types of handoffs in mobility management.	**10**
Q.5.	**A)**	Explain any two TCP for mobile communication.	**10**
	B)	Explain wireless local loop architecture	**10**
Q.6.		Write short notes on (any 02) a) Cryptographic tools for Security in mobile computing. b) GPRS network nodes. c) Android layers. d) Satellites (GEO and LEO)	**20**

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