

Examination: November-December 2018
Branch: Computer Engineering
Class/SEM: TE/VI

Date:
Subject: OS
Paper Code: 22651

Examination: November-December 2018
Branch: Computer Engineering
Class/SEM: TE/VI

Date: 16-11-18
Subject: SPCC
Paper Code: 54761

Examination: November-December 2018
Branch: Computer Engineering
Class/SEM: TE/VI

Date: 26-11-18
Subject: SE
Paper Code: 36619

Examination: November-December 2018
Branch: Computer Engineering
Class/SEM: TE/VI

Date: 30-11-18
Subject: DD
Paper Code: 13539

Examination: November-December 2018
Branch: Computer Engineering
Class/SEM: TE/VI

Date: 7/12/2018
Subject: MCC
Paper Code: 22991

(3 Hours)

[Total Marks: 80]



- N.B. 1. Q.no.1 is compulsory
2. Attempt any three out of the remaining five questions
- Q.1. (a) Explain the critical section problem in brief 5
(b) What do you mean by virtual memory? 5
(c) Explain the system components in Windows Architecture 5
(d) State any five system calls 5
- Q.2. (a) Given the following queue - 95, 180, 34, 119, 11, 123, 62, 64, in FIFO order with Read-write head initially at the track 50 and the tail track being at 199, discuss the following disk scheduling algorithms- 10
i. FCFS ii. SSTF iii. SCAN iii. LOOK
(b) Explain the readers/writers problem. Suggest a solution for the same 10
- Q.3. (a) Explain file management in UNIX 10
(b) What is deadlock? Explain the deadlock avoidance in detail 10
- Q. 4. (a) Explain different page replacement policies with a suitable example 10
(b) Differentiate the following: 10
(i) Paging vs segmentation (ii) Monolithic vs Microkernel Operating System.
- Q.5. (a) Consider the following set of processes, with the length of CPU burst in milliseconds 10

Process	Burst time	Priority
P1	8	4
P2	6	1
P3	1	2
P4	9	2
P5	3	3

The processes are assumed to have arrived in the order P1, P2, P3, P4, P5 all at time 0. Draw Gantt charts for the following scheduling algorithms- FCFS, SJF, Non-preemptive priority and RR(quantum=1) and also calculate the turnaround time, average waiting time.

(b) Explain the hardware support for paging 10

Q.6. Write notes on the following: 20

- (a) Thrashing and working set model
(b) State transition in UNIX
(c) I/O buffering techniques
(d) Semaphores.

(3 Hours)

Total Marks: 80

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

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

- Q1. (a) What is system software & application software? (05)
(b) Explain different features of macros. (05)
(c) Compare Compiler and Interpreter. (05)
(d) Write a note on: Java Compiler environment. (05)
- Q2. (a) With reference to macroprocessor, explain the following tables with suitable example. (10)
(i) MNT (ii) MDT (iii) ALA
(b) Explain the different code optimization techniques in compiler design. (10)
- Q3. (a) Draw flowchart and explain with databases the working pass 2 of assembler. (10)
(b) Explain various functions of loader. Compare linking loader and linkage editor. (10)
- Q4. (a) Consider the following grammar (10)
 $S \rightarrow (A) | 0$
 $A \rightarrow SB$
 $B \rightarrow ,SB | \epsilon$
Is the above grammar LL (1)? Justify your answer.
(b) Explain different types of Intermediate code representations. (10)
- Q5. (a) Explain the different types of garbage collection and compaction in compilers. (10)
(b) Differentiate Top-down and Bottom-up parsing techniques. Explain recursive descent parser with an example. (10)
- Q6. (a) Explain the different phases of compiler. Illustrate all the output after each phase for the following statement:
 $a = b + c - d * 5$
(b) Write short note on: (10)
(i) Synthesized and Inherited attributes.
(ii) Debug monitor.



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Camp | VI | CBSE | SE | 26/11/2018

Paper / Subject Code: 36802 / SOFTWARE ENGINEERING

Q.P code : 36619

(3 Hours)

Total Marks: 80

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

1. (a) When should one use Prototype model? Discuss the advantages and disadvantages of the prototype model. 8
(b) Discuss Abstraction, Information Hiding and Functional Independence. 6
(c) Explain the features of repository required to support SCM. 6
2. (a) Explain with suitable diagram Scrum-Agile model. 10
(b) Why Integration testing is needed to test a software? Explain the different incremental integration strategies. 10
3. (a) List different metrics used for software measurement. Explain function point based estimation technique in detail. 10
(b) What do you understand by software maintenance? Also explain the different types of maintenance. 10
4. (a) Explain in detail the Software Configuration Management process with suitable diagram. 10
(b) What is white box testing? Explain the basis path testing method in detail. 10
5. (a) What are the different categories of Risks? Explain the steps in developing RMMM plan. 10
(b) What is FTR in SQA? What are its objectives? Explain the steps in FTR. 10
6. Write short notes on any two (any 2) 20
 - (a) Black Box Testing
 - (b) COCOMO II estimation models
 - (c) Test Driven Development
 - (d) Service Oriented Software Engineering



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Please check whether you have got the right question paper.
 N.B: (1) Question No. 1 is Compulsory.

(2) Attempt any three question out of remaining five.

1. (a) Consider the following two relations: EMP and PAY

10

Emp ID	Emp Name	Title
11	John	Developer
12	Alexey	Tester
13	Smith	System analyst
14	David	Developer
15	Johny	Maintenance
16	Jack	System analyst
17	Harry	Maintenance
18	Tom	Developer

Title	Salary
System analyst	50000
Maintenance	40000
Tester	30000
Developer	25000

Assume that P_1 : Salary \leq 30000 and P_2 : Salary $>$ 30000 are two simple predicates. Perform a horizontal fragmentation of PAY with respect to predicates P_1 and P_2 to obtain two fragments PAY1 and PAY2. Using these fragments, perform derived fragmentation for EMP and prove completeness, reconstruction and disjointness rules for fragmentation of EMP relation are satisfied.

- (b) Discuss the algorithms used for distributed Deadlock preventions.

10

2. (a) What is transparent System? List out the transparencies of DDSS.

10

- (b) Explain SDC: Semi joined-based algorithm in detail with example.

10

3. (a) Explain in detail the phases of Distributed Query processing with diagram.

10

- (b) Draw and Explain architecture for Distributed Transaction Execution.

10

4. (a) Describe any two methods for Deadlock Detection in distributed database.

10

- (b) What is XML schema? Define X-Path and X-Query with an example.

10

5. (a) Explain Two phase commit protocol in detail with diagram.

10

- (b) Explain Locking based of the Optimistic concurrency control algorithm in detail.

10

6. Write a short notes on (Any Four)

20

- (a) Features of DDSS

- (b) Architecture of Heterogeneous Database

- (c) Anomalies for concurrency control

- (d) Applications of Distributed Databases

- (e) Cost factors effects in query optimization



Comp / Sem VI / CBCRS / MCC / 7/12/18

Paper / Subject Code: 36804 / MOBILE COMMUNICATION AND COMPUTING

Q. P. Code:-22991

(3 hours)

[Total Marks: 80]

- 1) Question No.1 is compulsory.
- 2) Attempt any three questions out of the remaining questions.
- 3) Make suitable assumptions wherever necessary.



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|------|--|----|
| 1 A | What is GPRS ? Describe its architecture in detail | 10 |
| B | What are various issues in signal propagation ? | 10 |
| 2 A | Describe GSM in detail. | 10 |
| B | Explain GEO and LEO satellite systems. | 10 |
| Q3 A | What is goal of Mobile IP ? How is packet delivery achieved to and from mobile node? | 10 |
| B | Discuss various types of Handoffs in cellular networks. | 10 |
| Q4 A | Explain HIPERLAN 2 data link control layer. | 10 |
| B | What are android SDK features | 10 |
| Q5 A | Describe Bluetooth protocol stack. | 10 |
| B | What are security issues in mobile computing? | 10 |
| Q6 | Write short notes on any 02. | 20 |
| | a). Antennae. | |
| | b). Authentication and privacy in GSM. | |
| | c). TETRA | |
| | d). 4G architecture. Comparison of 3G and 4G networks | |
