# SOFTWARE ENGINEERING

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. Explain the primary goal of software engineering.

2. How programmers spend their time in the entire life cycle of project development?

3. Give the format of a system definition.

4. Explain maintenance phase.

5. A large software product is more expensive to develop than a small one – justify.

6. Give the work break down structure of the process oriented project.

7. Explain HIPO charts.

8. How real time systems are designed?

9. Explain system testing.

10. Explain analysis phase of software maintenance.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Explain the factors to the considered in setting project goals.

12. Explain the evolution of the software project through successive versions.

13. How to estimate software maintenance cost?

14. Explain cohesion and its types.

15. Explain formal verification in testing.

16. Write short notes on :

    (a) Symbolic execution.

    (b) Debugging.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Explain different cost estimation techniques.

18. Explain PSL/PSA.

19. Explain Jackson structured programming.

# CLIENT/SERVER COMPUTING WITH ORACLE

Time : Three hours Maximum : 100 marks

## PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. What is a DBMS? List the feature of any one of a RDBMS.

2. What is a relation? Explain with a suitable example.

3. Explain about minicomputer computing model.

4. Explain the benefits of application development using OOP.

5. How to modify the structure of a table? Give example.

6. Write short notes on :

(a) mod( ) (b) length( ) (c) count( ) (d) next_day( )

7. Write a PL/SQL program to select the rows from the student table.

8. Explain about implicit cursors.

9. How to create table space in Oracle database? Explain.

10. Explain the user management in Oracle.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Explain the characteristics of a database approach.

12. Explain any two OS that supports for GUI.

13. Explain the various oracle data types.

14. Discuss about database triggers.

15. Explain the process of turing Oracle database server.

16. (a) Explain in detail about SELECT command.

(b) What do you understand about sub query? Explain.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. (a) Explain about database recovery. (8)

(b) Explain about Client/Server computing model. (7)



18. Explain the various data manipulation commands with suitable example.

19. Discuss the configuration of Oracle for user connections.

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# COMPUTER NETWORKS

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. What is a WAN?

2. What is meant by network standardization?

3. What is a frame relay?

4. List the use of a MODEM.

5. Define Token bus.

6. What is meant by pulse code modulation?

7. What is luit stuffing? Give examples.

8. What are the uses of a bit map protocol?

9. What is a URL?

10. Define WWW.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Discuss the uses of computer networks.

12. Give a detailed note on Novell NetWare reference model.

13. Describe the structure of telephone system.

14. Explain any two guided transmission media.

15. Describe any one routing algorithm.

16. Explain the facility of e-mail in detail.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Explain in detail, the structure and functions of OSI reference model.

18. Discuss in detail, the pure ALOHA and slotted ALOHA system.

19. Explain the various security measures used to protect the networks.

# MULTIMEDIA – TECHNOLOGY AND APPLICATIONS

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. Briefly describe five applications where multimedia could be useful.

2. Describe any two communications devices used as peripherals in a Multimedia systems.

3. What is 3-D Modeling? How is it done?

4. What is a Word Processor? What are its capabilities?

5. What is hypertext? How it is useful to Multimedia?

6. Describe the red book standard of professional sound.

7. How are color images created? What are their advantages in multimedia?

8. Describe how and why video is edited.

9. How is the cost of Multimedia project estimated?

10. How is the multimedia product test?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Explain the various multimedia skills. What type of training is required to under take a Multimedia Project?

12. Describe in detail the Macintosh plat form for Multimedia production and justify its suitability.

13. Describe in detail any three images editing tools used in Multimedia.

14. What are object – oriented authoring tools? Explain any two in detail.

15. Describe the different types of sound systems used in multimedia.

16. How are Computers and Television Integrated? What problems are faced in this Integration and how are they overcome?



PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. (a) Describe the steps involved in designing and producing a Multimedia System.

(b) Describe the steps involved in delivering a Multimedia system on a CD_ROM.

18. (a) Explain the editing features in digital recording of sound.

(b) Enumerate the features and tools for capturing and editing images.

19. (a) Discuss the different video recording formats.

(b) Explain the various stages in project planning.

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# JAVA PROGRAMMING

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. What is encapsulation? Explain.

2. Write short notes on polymorphism.

3. Explain the relational operators in Java.

4. Describe if .. else statement with an example.

5. What is the use of throw and throws keyword in Java?

6. Explain Thread priorities.

7. How will you define and derive a subclass?

8. Describe Random Access File class.

9. Explain any two types of layouts.

10. What are Buffered Streams?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. What are literals? Explain

12. Discuss the methods in vector class.

13. Explain interface with an example.

14. What are input and output streams? Explain them with illustrations.

15. Explain Border Layout and Card Layout with examples.

16. Discuss in detail about Panels and Layouts.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Discuss in detail about packages in Java with examples.

18. Explain the types of inheritance with examples.

19. Explain the various controls in AWT package.

18. Five workers are available to work with the machines and the respective costs (in rupees) associated with each worker-machine assignment is given below. A sixth machine is available to replace one of the existing machines and the associated costs are also given below.

| | | Machines | | | | | |
|---|---|---|---|---|---|---|---|
| | | $M_1$ | $M_2$ | $M_3$ | $M_4$ | $M_5$ | $M_6$ |
| Workers | $W_1$ | 12 | 3 | 6 | – | 5 | 8 |
| | $W_2$ | 4 | 11 | – | 5 | – | 3 |
| | $W_3$ | 8 | 2 | 10 | 9 | 7 | 5 |
| | $W_4$ | – | 7 | 8 | 6 | 12 | 10 |
| | $W_5$ | 5 | 8 | 9 | 4 | 6 | – |

Determine optimal assignment and the associated saving cost.

19. Solve the transportation problem

| | | To | | | | | |
|---|---|---|---|---|---|---|---|
| | | *A* | *B* | *C* | *D* | *E* | Available |
| From | *I* | 4 | 1 | 2 | 6 | 9 | 100 |
| | *II* | 6 | 4 | 3 | 5 | 7 | 120 |
| | *III* | 5 | 2 | 6 | 4 | 8 | 120 |
| Demand | | 40 | 50 | 70 | 90 | 90 | |



# 9225/A36 OCTOBER 2009

## OPERATION RESEARCH

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. What are the applications of O.R.?

2. Explain the general methods of solving O.R. models.

3. Explain the mathematical formulation of LPP.

4. State the limitations of the graphical method of solving a LPP.

5. Explain the following in LPP

   (a) Basic solution

   (b) Basic feasible solution

   (c) Optimal solution.

6. Explain the term 'Artificial Variables'.

7. What are assignment problems? Describe mathematical formulation of an assignment problem?

8. What is travelling salesman problem?

9. Explain column minima method to find initial basic feasible solution to a transportation problem.

10. What do you mean by balanced and unbalanced transportation problems? Explain how would you convert the unbalanced problem into a balanced one?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Discuss main phases of O.R.

12. Solve the following L.P.P. by graphical method

Max. $Z = 3x + 2y$

subject to

$-2x + y \leq 1$

$x \leq 2$

$x + y \leq 3$ and

$x, y \geq 0$.

13. Use Simplex method to solve the LPP

Max. $Z = 4x + 10y$

subject to

$2x + y \leq 50$

$2x + 5y \leq 100$

$2x + 3y \leq 90$

and $x, y \geq 0$.



14. Solve the assignment problem

| | *I* | *II* | *III* | *IV* |
|---|---|---|---|---|
| *A* | 5 | 7 | 11 | 6 |
| *B* | 8 | 5 | 9 | 6 |
| *C* | 4 | 7 | 10 | 7 |
| *D* | 10 | 4 | 8 | 3 |

15. Find the initial basic feasible solution of the following transportation problem using (a) North west corner rule (b) Least cost method.

| | To | | | Supply |
|---|---|---|---|---|
| | 1 | 2 | 6 | 7 |
| From | 0 | 4 | 2 | 12 |
| | 3 | 1 | 5 | 11 |
| Demand | 10 | 10 | 10 | |

16. Explain an algorithm for solving a transportation problem.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Use duality to the solve the following LPP

Minimize $Z = 2x_1 + 2x_2$

subject to

$2x_1 + 4x_2 \geq 1$

$-x_1 - x_2 \leq -1$

$2x_1 + x_2 \geq 1$

and $x_1, x_2 \geq 0$.