Enrolment No......................................

Faculty of Engineering

End Sem (Even) Examination May-2018

CS2CO07 Software Engineering

Programme: Diploma   Branch/Specialisation: CSE

Duration: 3 Hrs.   **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i.   Software consists of _____   **1**
           (a) Set of instructions + operating procedures
           (b) Programs + documentation + operating procedures
           (c) Programs + hardware manuals
           (d) Set of programs

     ii.   _____ is a piece of programming code which performs a well-   **1**
           defined task.
           (a) Computer Program   (b) Computer software
           (c) Both (a) and (b)   (d) None of these

     iii. The project planner examines the statement of scope and extracts all   **1**
           important software functions which is known as
           (a) Association   (b) Decomposition
           (c) Planning process   (d) All of these

     iv.   The process each manager follows during the life of a project is known as   **1**
           (a) Project Management
           (b) Manager lifecycle
           (c) Project Management Life Cycle
           (d) All of these

     v.   Which of the following is not defined in a good Software Requirement   **1**
           Specification (SRS) document?
           (a) Functional Requirement
           (b) Non-functional Requirement
           (c) Goals of implementation
           (d) Algorithm for software implementation

vi. Requirement engineering process includes which of these steps? **1**
(a) Feasibility study
(b) Requirement Gathering
(c) Software Requirement specification & Validation
(d) All mentioned above

vii. What encapsulates both data and data manipulation functions? **1**
(a) Object   (b) Class   (c) Super Class   (d) Sub Class

viii. Why the design principles are considered unique? **1**
(a) They are characteristic of well-constructed programs
(b) They are robust
(c) All of the mentioned
(d) None of the mentioned

ix. What is principle of feasibility? **1**
(a) A Design is acceptable only when it is realized
(b) Designs that make easier to change are better
(c) Designs that can be built for less money, in less time with less risk are better
(d) Designs that can meet more stakeholder needs and desired subject to constraints are better

x. Which of the following is non-functional testing? **1**
(a) Black box testing   (b) Performance testing
(c) Unit testing   (d) None of these

Q.2 i. Define software engineering with its characteristics. **2**
ii. What is waterfall model, explain with architecture? **3**
iii. Explain the following terms- **5**
(a) Rapid application development   (b) Spiral model.
OR iv. Give the detailed description of incremental and prototype model. **5**

Q.3 i. What do you mean by risk management, explain its types? **2**
ii. Explain estimation with its techniques. **8**
OR iii. Define decomposition with example. **8**

Q.4 i. What do you mean by SRS? Explain E-R diagram with example? **3**
ii. What is UML? Explain use case diagram, class diagram, sequence diagram and state chart diagram. **7**

OR iii. Differentiate between data flow diagram, data dictionary and functional specification. **7**

Q.5 i. Define the following terms- **4**
(a) Design Process   (b) Design Principles   (c) Design Concepts.
ii. Differentiate between modular and architectural design. **6**
OR iii. What do you mean by optimization and procedural design? **6**

Q.6 Attempt any two:
i. Define V-Model. Also draw suitable diagram for V-Model. **5**
ii. Explain black and white box testing. **5**
iii. Write down merit and demerit of unit and integration testing? **5**

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Marking Scheme
CS2CO07 Software Engineering Scheme

Q.1   i.   Software consists of _____   **1**
(b) Programs + documentation + operating procedures

     ii.   _____ is a piece of programming code which performs a well-   **1**
defined task.
(a) Computer Program

     iii.   The project planner examines the statement of scope and extracts all   **1**
important software functions which is known as
(b) Decomposition

     iv.   The process each manager follows during the life of a project is known   **1**
as
(c) Project Management Life Cycle

     v.   Which of the following is not defined in a good Software   **1**
Requirement Specification (SRS) document?
(d) Algorithm for software implementation

     vi.   Requirement engineering process includes which of these steps?   **1**
(d) All mentioned above

     vii.   What encapsulates both data and data manipulation functions?   **1**
(a) Object

     viii.   Why the design principles are considered unique?   **1**
(a) They are characteristic of well-constructed programs

     ix.   What is principle of feasibility?   **1**
(a) A Design is acceptable only when it is realized

     x.   Which of the following is non-functional testing?   **1**
(b) Performance testing

Q.2   i.   Define software engineering with it characteristics.   **2**
Definition of software engineering   1 Mark.
Characteristics   1 Mark.

     ii.   Explain waterfall model, with architecture.   **3**
Waterfall model definition   1 Mark
Explanation   1 Mark
Architecture   1 Mark.

     iii.   Explain rapid application development and spiral model.   **5**
RAD   2.5 Marks
Spiral   2.5 Marks.

OR   iv.   Explain incremental and prototype model   **5**
Incremental model   2.5 Marks
Prototype model   2.5 Marks.

Q.3   i.   Explain risk management.   **2**
Definition of risk management   1 Mark
Types   1 Mark.

     ii.   Explain estimation with its techniques.   **8**
Definition   1 Mark
Types   2 Marks
Explanation anyone   5 Marks.

OR   iii.   Define decomposition with example.   **8**
Definition of decomposition   2 Marks
Example   6 Marks.

Q.4   i.   What do you mean by SRS. Explain E-R diagram with example?   **3**
SRS   1 Mark
ER diagram   2 Marks.

     ii.   Explain UML (use case, class, sequence, state chart diagram).   **7**
UML   1 Mark
use case   2 Marks
class   1 Mark
sequence   1 Mark
state chart   2 Marks.

OR   iii.   Explain data flow diagram, data dictionary and functional   **7**
specification.
DFD   3 Marks
Data dictionary   2 Marks
Functional specification   2 Marks.

Q.5   i.   Explain design process, principles and concepts   **4**
Design process   2 Marks
Principles   1 Mark
Concepts   1 Mark.

     ii.   Explain modular and architectural design.   **6**
Modular design   3 Marks
Architectural design   3 Marks.

OR iii. Explain optimization and procedural design. **6**

Optimization design   3 Marks

Procedural design   3 Marks.

Q.6   Attempt any two:

i.   Explain V-Model with architecture. **5**

V-model explanation   3 Marks

Architecture   2 Marks.

ii. Explain black and white box testing. **5**

Black box testing   2.5 Marks

White box testing   2.5 Marks.

iii. Explain unit and integration testing. **5**

Unit testing   2.5 Marks

Integration testing   2.5 Marks.

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