MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : CS-701

PUID : 07001 (To be mentioned in the main answer script)

SOFTWARE ENGINEERING

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : $10 \times 1 = 10$

i) Expanded form of the term HIPO is
   a) Hierarchical Input Process Output
   b) High-level Input Process Output
   c) Huge Input Process Output
   d) none of these.

ii) Software consists of
   a) Set of instructions + operating procedures
   b) Programs + documentation + operating procedures
   c) Programs + hardware manuals
   d) Set of programs.

iii) SRD stands for
   a) Software Requirements Definition
   b) Structured Requirements Definition
   c) Software Requirements Diagram
   d) Structured Requirements Diagram

iv) Which is *not* true in context of Decision Tree ?
   a) Used in white box model
   b) Perform well with large data
   c) Handles both categorical and numerical data
   d) Random forest tree is used for regression type problem.

v) In software metrics which metrics evaluate the track budget, schedule and human resource ?
   a) Requirement metrics
   b) Product metrics
   c) Process metrics
   d) None of these.

vi) From the following which quality deals with maintaining the quality of the software product ?
   a) Quality assurance b) Quality control
   c) Quality efficiency d) None of these

vii) A COCOMO model is
   a) Common Cost Estimation Model
   b) Constructive Cost Estimation Model
   c) Complete Cost Estimation Model
   d) Comprehensive Cost Estimation Model

viii) Which depicts flow of control in program modules ?

a) Flowchart b) DFD

c) Both (a) and (b) d) None of these.

ix) Which quality deals with the maintaining the quality of the software product ?

a) Quality assurance b) Quality control

c) Quality efficiency d) None of these.

x) Alpha and Beta testing are forms of

a) Acceptance testing b) Integration testing

c) System testing d) Unit testing.

xi) If every requirement stated in the Software Requirement Specification (SRS) has only one interpretation, SRS is said to be correct

a) Unambiguous b) Consistent

c) Verifiable d) None of these.

xii) Which of the following primary objectives have to be achieved for the requirement model ?

a) To describe what the customer requires

b) To establish a basis for the creation of a software design

c) To define a set of requirements that can be validated once the software

d) All of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. Draw a diagram for spiral life cycle.
3. What are software validation and verification ?
4. Explain about software quality assurance.
5. What are white box and black box testing ?
6. What is formal technical review (FTR) ? What are the differences among fault, failure and error ?

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) Explain when and why you will use PERT charts and when and why you will use Gantt charts while you are project manager. 4

b) Consider a software project with 5 activities T_1 to T_5. Duration of 5 activities in weeks are 3, 2, 3, 5, 2 respectively. T_2 and T_4 can start when T_1 is complete. T_3 can start when T_2 is complete. T_5 can start when both T_3 and T_4 are complete.

Draw activity network for the project. When is the latest start date of the activity T_3 ? What is the float of the activity T_4 ? Which activities are on the critical path ? Draw the Gantt chart also.

 3 + 1 + 1 + 3 + 3