

AMIETE – CS/IT (Current Scheme)

Time: 3 Hours

JUNE 2015

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions, answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. _____ shows the dependencies between activities, the estimated time required to reach each milestone and the allocation of people to activities.
- (A) Project organization (B) Project schedule
(C) Work breakdown (D) Project monitoring
- b. Which of the following testing methods is white-box testing?
- (A) Equivalence partitioning (B) Boundary value analysis
(C) Basis path testing (D) All of these
- c. _____ is an observational technique that can be used to understand social and organization requirements.
- (A) Prototyping (B) Verifiability
(C) Ethnography (D) Reviews
- d. Name the protocol that defines an organization for structured data exchange between web services?
- (A) CORBA (B) UDDI
(C) WSDL (D) SOAP
- e. Name the system where producer process puts the data into a circular buffer and is consumed by the consumer process?
- (A) Data acquisition systems (B) Monitoring and control systems
(C) Real time operating systems (D) All of these

Code: AC63/ AT63

Subject: SOFTWARE ENGINEERING

- f. Which model shows how individual objects change their state in response to events?
- (A) Sequence models (B) State machine models
(C) Subsystem models (D) Object interface models
- g. Project risks are the risks that-----
- (A) Affect the project schedule or resources
(B) Affect the quality or performance of the software being developed
(C) Affect the organization developing or procuring the software
(D) All of the above
- h. Which stage of “automated static analysis” identifies and highlights loops with multiple exit or entry points and unreachable code?
- (A) Information flow analysis (B) Control flow analysis
(C) Path analysis (D) Data use analysis
- i. Name the testing where the test teams have access to the source code of the system?
- (A) Integration testing (B) Release testing
(C) Beta testing (D) Functional testing
- j. Who is responsible for inspection process improvements, checklist updating, standards development, etc?
- (A) Chairman (B) Chief moderator
(C) Inspector (D) Author or owner

**Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.**

- Q.2** a. What is project plan? Discuss the purpose of each of the sections in a software project plan. (5)
- b. Describe the different activities involved in the system design process. (4)
- c. With the help of suitable figure, discuss the four main phases in the requirements engineering process. (7)
- Q.3** a. What is requirement validation? What are the different checks should be carried out on the requirements in the requirement document during the requirements validation process? What are the requirements validations techniques that can be used in conjunction or individually? (2+4+4)
- b. Give example of the type of system models that you might create during the analysis process. (6)

- Q.4** a. In respect of the sub-system interface specification, give the structure of an object specification and discuss the different components of the body of the specification. (6)
- b. What is Pair Programming? What are the advantages of pair programming? (5)
- c. Differentiate between evolutionary and throw-away prototyping. (5)
- Q.5** a. What is client-server model? What are the major components of this model?(5)
- b. Draw the structure of a CORBA-based distributed application based on OMG's vision of a distributed application and discuss the various components proposed in the distributed application. (6)
- c. Write the advantages and disadvantages of broadcast model approach. (5)
- Q.6** a. What do you mean by component composition? What are the different types of component composition? What are the different situations of incompatibility occurred when components are developed independently? (2+3+3)
- b. What are the key factors that one should consider while planning for software reuse? (8)
- Q.7** a. Define dependable process. What are the characteristics of dependable process? (2+4)
- b. What do you mean by user integration? What are the different styles in which forms of interaction can be classified? Give one advantage, disadvantage and an example of each style. (2+4+4)
- Q.8** a. What do you mean by test case design? What approaches can be taken for test case design? (5)
- b. What is software testing workbench? With the help of suitable figure, discuss some of the tools that might be included in such a testing workbench? (6)
- c. What is a configuration management plan? Briefly describe its sections. (5)
- Q.9** a. Describe the key stages of software measurement process that may be part of a quality control process. (8)
- b. What are the types of standards that may be established as part of the quality assurance process? Why these standards are important? Give some examples of standards that may be included in standards handbook prepared by quality assurance team. (3+3+2)