Code: AC63/AT63/AC114/AT114   Subject: SOFTWARE ENGINEERING

AMIETE – CS/IT (Current & New Scheme)

Time: 3 Hours | **June 2019** | **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. SRS stands for Technical computer based System that includes
     (A) Software Requirement Specification   **(B)** Software Requirement Solution
     (C) System Requirement Specification   **(D)** None of these

   b. Waterfall model is not suitable for
     (A) Small Projects   **(B)** Complex Projects
     (C) Accommodating Charges   **(D)** None of these

   c. Which one of the following is not a step of requirement engineering?
     (A) Requirements Elicitation   **(B)** Requirements Analysis
     (C) Requirements Design   **(D)** Requirements Documentation.

   d. QFD in Requirement Engineering stands for
     (A) Quality Function Design   **(B)** Quality Factor Design
     (C) Quality Function Development   **(D)** Quality Function Deployment

   e. What are the four framework activities found in the Extreme Programming process model?
     (A) Analysis, Design, Coding, Testing
     (B) Planning, Analysis, Design, Coding
     (C) Planning, Analysis, Coding, Testing
     (D) Planning, Design, Coding, Testing

   f. Which of the following is not included in Architectural Design Decisions?
     (A) Type of Application   **(B)** Distribution of the System
     (C) Architectural Styles   **(D)** Testing the system.

   g. A design description of an object is known as a class
     (A) Instance   **(B)** Object
     (C) Case   **(D)** Both instance and object

h. Select the statement which is true about User Interface design.
   (A) User Interface design is not so critical for system dependability
   (B) User Interface design need not consider the capabilities of the users
   (C) Good design should match the skills, experience and expectation of users
   (D) Need not take into account the physical and mental capabilities of user.

i. Software testing is
   (A) The process of demonstration that errors are not present
   (B) The process of executing a program with the intention of finding errors.
   (C) The process of executing a program with the show it is working as per specification
   (D) The process of testing the developed software.

j. Software quality management for large systems can be structured into _____ activities
   (A) Quality Assurance   **(B)** Quality Planning
   (C) Quality Control   **(D)** All of these

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

Q.2	a. Write short note on Risk Management.	**(10)**
	b. Explain Legacy systems with neat diagram.	**(6)**
Q.3	a. List out the users of requirement document and the role played by them.	**(4)**
	b. Explain Semantic Data Model with necessary diagram in detail.	**(6)**
	c. Explain behavioral Model with suitable diagram.	**(6)**
Q.4	a. Explain Software Prototyping model.	**(10)**
	b. Suggest why architectural design of a system should precede the development of a formal specification	**(6)**
Q.5	a. Explain Function Oriented Pipelining style of modular decomposition and its Advantages.	**(4)**
	b. Explain in detail about CORBA.	**(12)**
Q.6	a. Using suitable examples, explain the difference between an object and an object class.	**(4)**
	b. Give four circumstances where you might recommend against software reuse	**(6)**
	c. Explain the Component Based Software Engineering process.	**(6)**

Q.7 a. Explain the User Interface Evaluation. **(8)**

b. Give four reasons why it is hardly ever cost-effective for companies to ensure that their software is free of faults. **(8)**

Q.8 a. Discuss the differences between verification and validation, and explain why validation is a difficult process? **(6)**

b. Explain why testing can only detect the presence of errors and not their absence? **(4)**

c. Describe two metrics that have been used to measure programmer productivity. Comment briefly on the advantages and disadvantages of each of these metrics. **(6)**

Q.9 a. Explain, how standards may be used to capture organizational wisdom about effective methods of software development? Suggest four types of knowledge that might be captured in organizational standards. **(8)**

b. Suggest process models for the following processes: **(4)**
  (i). Writing small (50 line program)
  (ii). Lighting a wood fire

c. Briefly explain System Building. **(4)**