Hall Ticket No | | | | | | | | | | | Question Paper Code: AITB26

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal-500043, Hyderabad

B.Tech VII SEMESTER END EXAMINATIONS (REGULAR/SUPPLEMENTARY) - DECEMBER 2022
Regulation: R18
SOFTWARE ENGINEERING

Time: 3 Hours **(Common to CSE | IT)** **Max Marks: 70**

Answer FIVE Questions choosing ONE question from each module
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

MODULE – I

1. (a) How does system engineering differ from software engineering? Write brief notes on computer based system and system engineering hierarchy. [BL: Understand| CO: 1|Marks: 7]

   (b) What is software process? Appraise the need of software process improvement? Discuss about capability maturity models. [BL: Understand| CO: 1|Marks: 7]

2. (a) Summarize the five process framework activities for software engineering. Write about evaluation of software engineering methodologies. [BL: Understand| CO: 1|Marks: 7]

   (b) A software company needs to develop an estimated 1000 function points and is planning to use JAVA as the programming language whose approximate lines of code per function point are accepted as 50. Considering a = 1.4 as the multiplicative factor, b = 1.0 as the exponential factor for the basic COCOMO effort equation, and c = 3.0 as the multiplicative factor, d = 0.33 as the exponential factor for the basic COCOMO duration equation, approximately how long does the project take to complete? [BL: Apply| CO: 1|Marks: 7]

MODULE – II

3. (a) Identify the need for change in requirements planning. How does this affect projects? [BL: Understand| CO: 2|Marks: 7]

   (b) Consider you are developing an e-shopping website (like Amazon, Flipkart, etc.) Mention the various functional and non-functional requirements that need to be taken care of. [BL: Apply| CO: 2|Marks: 7]

4. (a) Write about the requirements validation process. Differentiate between user requirement and system requirement. [BL: Understand| CO: 2|Marks: 7]

   (b) "The functional requirements specification of a system should be both complete and consistent". Substantiate this statement with relevant examples. [BL: Apply| CO: 2|Marks: 7]

MODULE – III

5. (a) Write the taxonomy of architectural styles and give a brief description of each style. Mention its advantages and disadvantages. [BL: Understand| CO: 3|Marks: 7]

   (b) Demonstrate the architecture of a house or building as a metaphor, Draw comparison with software architecture. How are the disciplines of classical architecture and software architecture similar? How do they differ? [BL: Apply| CO: 3|Marks: 7]

6. (a) With an example explain the task set for component-level design for an object-oriented system. [BL: Understand| CO: 4|Marks: 7]

   (b) List the rules that must be followed during the interface design. Outline the tasks that are performed in user interface design. [BL: Understand| CO: 4|Marks: 7]

MODULE – IV

7. (a) Describe in detail blackbox and whitebox testing. List out the differences between these testing methods. [BL: Understand| CO: 5|Marks: 7]

   (b) Use equivalence partitioning in the below case-Let us consider an example of an online shopping site. On this site, each product has a specific product ID and product name. We can search for products either by using the name of the product or by product ID. Here, we consider a search field that accepts only valid product IDs or product names. [BL: Apply| CO: 5|Marks: 7]

8. (a) What is debugging? Identify the need and challenges of debugging. Explain the debugging strategies [BL: Understand| CO: 5|Marks: 7]

   (b) Explain the strategic approaches to software testing. Why testing is difficult? Elaborate on how to overcome. [BL: Understand| CO: 5|Marks: 7]

MODULE – V

9. (a) Summarize the COCOMO II model. Mention the differences between COCOMO I and II model. [BL: Understand| CO: 6|Marks: 7]

   (b) Explain how the risk management can be organized into a separate RMMM plan with an example risk information sheet? [BL: Understand| CO: 6|Marks: 7]

10. (a) Enlist the various activities of software quality assurance group to assist the software team in achieving high quality. [BL: Understand| CO: 6|Marks: 7]

    (b) List the various risks associated with software. Discuss steps to mitigate monitor and manage risks. [BL: Understand| CO: 6|Marks: 7]