Maharashtra Education society's
Institute of Management and Career Courses (IMCC), Pune

TERM END ASSESSMENT (A.Y.2022-23)
MCA I Year (Sem I)
IT34: Object Oriented Software Engineering

Time: 2hrs 30 min.   **Date: 25/02/2023**   **Marks: 50**

Note: -
1. **All questions are compulsory.**
2. **Figures to the right indicate full marks.**
3. **State your assumptions clearly.**

Q.1	20 MCQ Questions (0.5M * 20)	(10)
	i) What is the core objective of a Software Process Model? 1. To define software 2. To give a specific roadmap for software engineering work 3. To prepare modules 4. None of the mentioned above **ii) The waterfall model suggests a systematic ____.** 1. Iterative approach 2. Spiral approach 3. Sequential approach 4. None of the mentioned above **iii) The functionality of software models its users to quickly and then refines and expands on that functionality in later software releases.** 1. Incremental Process Model 2. Waterfall Model 3. Spiral Model 4. All of the mentioned above	

iv) A spiral model is an evolutionary ___ that combines the iterative aspect of prototyping with the iterative nature of development.

1. Software process model
2. Mechanical designing process
3. Identify supplementary activities
4. All of the mentioned above

v) Planning activity of a project development describes about the ____.

1. Size and resource estimates
2. Planning and designing
3. System requirement and design
4. None of the mentioned above

vi) Which of the following represents the life-cycle of software development?

1. Analysis -> Design ->Code -> Testing -> Operation and Maintenance
2. Analysis -> Design -> Operation and Maintenance -> Testing
3. Design -> Analysis -> Coding -> Testing -> Operation and Maintenance
4. Design -> Analysis -> Coding -> Operation and Maintenance -> Testing

vii) Choose the correct option from the given below?

1. Prototyping Model facilitates reusability of components
2. RAD Model facilitates reusability of components
3. Both RAD & Prototyping Model facilitates reusability of components
4. None

viii) Which one of the following is not a software process quality?

1. Productivity
2. Portability
3. Timeliness
4. Visibility

ix) Which two models don't allow defining requirements early in the cycle?

1. Waterfall & RAD
2. Prototyping & Spiral
3. Prototyping & RAD
4. Waterfall & Spiral

x) If you were a lead developer of a software company and you were asked to submit a project/product within a stipulated time-frame with no cost barriers, which model would you select ?

1. Waterfall
2. Spiral
3. RAD
4. Incremental

xi) Which of the following is not defined in a good Software Requirement Specification (SRS) document?

1. Goals of implementation
2. Software implementation algorithm
3. Functional Requirement
4. Nonfunctional Requirement

xii) If requirement does not conflict with other requirements in the requirement specification, then the SRS is _____

1. Consistent
2. Complete
3. Traceable
4. Modifiable

xiii) Which of the following is not a type of user interface?

1. Command language based
2. Menu based
3. Efficiency based
4. Direct manipulation based

xiv) Which of the following devices are mainly responsible for the user interface?

1. Input and output devices
2. Memory devices
3. Processor
4. None of the above

xv) The main function of user-interface is to

1. Convert program/ programs into machine language
2. Transmit data to a remote location
3. Connect users with an application through graphical options like icon, menu, text etc
4. None of these above

xvi) A software might allow a user to interact -

1. Via Keyboard
2. Via Mouse movement
3. Via Voice recognition
4. All of these

xvii) Extreme Programming (XP) is an approach of,

1. Agile software development
2. Iterative process of software development
3. Prototype of software development
4. None of the mentioned above

xviii) Agile Software Development is based on

1. Linear Development
2. Iterative Development
3. Incremental Development
4. Both Iterative & Incremental Development

	xix) How many phases are there in Scrum ? 1. Two 2. Three 3. Four 4. Scrum is an agile method which means it does not have phases **xx) The Agile model has been primarily designed to develop a project to adapt to ___ quickly.** 1. Development quickly 2. Implement quickly 3. Change requests 4. None of the mentioned above	
Q.2	Prepare **SRS in IEEE format** for the placement agency website that provides a facility for candidates to register for their academic details, personal details and skill set. Site also gives provision to update their profiles. Organizations can also register with their requirements. Search facility is provided to search for jobs and suitable candidates. **OR** A Library Management System (LMS) needs to be developed to manage libraries efficiently. the system should keep track of the following - ● Issue/Return of books ● Purchasing and recording of the book in the accession register. ● collection of fine on late return of books. **Prepare SRS in IEEE format for the LMS**	**(08)**
Q.3	The examination controller need to manage different activities (paper setting schedule for a term in which he will specify date, venue for paper setter). Teachers need to submit their details along with subject expertise. Based on subject expertise, exam controller will generate appointment orders for paper setting. Each paper setting panel will consist of a chairman and members (min-3& max - 7). Each panel need to set 3 papers for a subject and submit it to the exam section. A paper setter can be there in many panels. Chairman needs to set the paper online and upload it on the paper setting portal of the university through authentic login. **Draw Usecase and Class Diagram for the above case** OR	**(20)**

1.	Draw **state transition diagram** for Biometric (Finger print) system having following functionalities : 1) Storing fingerprints 2) Generating ID 3) Recording In-time/Out time by matching the finger prints 4) Showing Valid/ Invalid Messages 5) Calculating working hours.	(10)
2.	Soft Tools Pvt. Ltd. has issued an advertisement calling applications for various posts. After receiving applications scrutiny will be made and interview letters will be sent. Deserving candidates will be selected through interviews and will be appointed as regular employees. **Draw Activity diagram for the above case.**	(10)
Q.4	A system needs to be designed for a departmental store dealing in consumer items. Members enjoy credit facility and can purchase items as and when he or she needs them. Store has several counters and one can almost get all kinds of consumer items after visiting these counters. He becomes a member by paying the initial membership amount and get the credit cards. He has to pay his outstanding on quarterly basis. System generates alerts to these members. Defaulters are not allowed to purchase items until the default amount is cleared. Consider the different aspects of the above problem and model them appropriately. **Draw Bill and Membership Form and also state input validations.** **OR** Front office of Orchid hotel is responsible for room reservations, room allocations, and final settlement of bills. Any company or person can reserve rooms for their future stay. They have to indicate the period of which they need the room and the number of rooms required. Sometimes reservations could be canceled or the dates or numbers of rooms changed. **Design a GUI for room booking and also state input validations.**	(04)
Q.5	How is Agile Methodology different from the Traditional Waterfall process? **OR** i) What are the pros of Agile Methodology? ii) Differentiate in between Extreme Programming and scrum?	(08) (04) (04)