**Total No. of Questions : 5]** **SEAT No. :**

**PA-2553** **[Total No. of Pages : 6**

# [5948]-103
# M.C.A. - I (Management)
# IT - 13 : OBJECT ORIENTED SOFTWARE ENGINEERING
# (2020 Pattern) (Semester - I)

***Time : 2½ Hours]*** ***[Max. Marks : 50***

***Instructions to the candidates:***

1) ***All questions are compulsory.***
2) ***For MCQ select appropriate choice from the given options.***
3) ***Figures to right indicates full marks.***
4) ***Draw neat diagrams and quote examples the wherever necessary.***
5) ***Use of any type of calculator is not allowed.***

***Q1)*** Attempt the following Multiple Choice Questions. Each question carries half mark. **[10]**

a) If you were a lead developer of a software company and you are asked to submit a project within a stipulated time frame with no cost barriers, which model your select.

i) Waterfall ii) Spiral

iii) RAD iv) Incremental

b) From the following, which software has been characterized by 'Number Crunching' Algorithms?

i) System Software

ii) Artificial Intelligence software

iii) Embedded Software

iv) Engineering and Scientific Software

c) Project risk factor is considered in which model?

i) Water fall ii) Spiral

iii) RAD iv) RUP

d) Which phase of the RUP is used to establish a business case for the system?

i) Transition ii) Construction

iii) Elaboration iv) Inception

***P.T.O.***

e) The _____ model is preferred for development when the requirements are not clear

i) RAD ii) RUP

iii) Evolutionary iv) Water fall

f) Software Engineering primarily aim's on building

i) reliable software

ii) cost-effective software

iii) reliable and cost-effective software

iv) Sustainable software

g) The _____ approach involves building a small version of the intended system proor to building the proposed completed system

i) Water fall ii) Spiral

iii) RAD iv) Prototyping

h) What does the RAD process stand for?

i) Rapid Application Development

ii) Recent Application Design

iii) Recent Application Development

iv) Rapid Application Design

i) What is the major advantage of using Incremental model?

i) Customer can respond to each increment

ii) Easier to test and debug

iii) Get a product to the market early

iv) Easier to test and debug and get a product to the market early

j) Choose an internal software quality

i) scalability ii) usability

iii) resuabilitiy iv) rehability

k) The SRS is said to be _____ if and only if no subset of individual requirements described in it conflict with each other

i) correct ii) consistent

iii) unambignous iv) veritiable

l) Consider a system where, “a heat sensor detects an intrusion and alerts the security company”. What kind of a requirement the system is providing?

i) Functional

ii) Non-functional

iii) User Interface

iv) Internal Software Quality

m) _____ is the understanding of software product limitations, learning system related problems or changes to be done in the existing system before hand, identifying and addressing impact of project on organisation and personnel

i) Software Design

ii) Software Analysis

iii) Feasibility study

iv) Requirement Gathering

n) When a company plans to develop a generic product, who among the following is usually the source of the requirement?

i) Development Team Members

ii) Project Manager

iii) Marketing Personnel

iv) Personnel from Finance Management

o) In user Interface Design, tools are used to,

i) make a prototype and implement the design model

ii) get qualitative results

iii) get quantitative results

iv) make a prototype and implement the design model and get qualitative results

p) What does Designing consistent interfaces means?

i) using the same design patterns

ii) using the same sequence of actions

iii) using the same design patterns and sequence of actions

iv) using excisting designs of similar applications

q) Who is responsible for ensuring that the scrum values and pillars are adhered to all times?

i) Product Owner ii) Scrum Master

iii) Development Team iv) Each Member

r) DSDM originally sought to provide some discipline to the _____ method

i) Scrum ii) Spiral

iii) RAD iv) RUP

s) Which method is used for prioritizing product features in DSDM methodology?

i) MoSCoW ii) PaRiS

iii) LoNDoN iv) BeRLiN

t) During which scrum ceremony does the team inspects it's processes to adapt during subsequent sprints?

i) Sprint Retrospective ii) Daily standup

iii) Story Grooming iv) Sprint closure

***Q2)*** Write a Software Requirement Specification as per SRS IEEE temptate for the scenario. **[8]**

A system is to be developed for scheduling the courses in MCA programme, based on the input about classrooms, lecture times, and time preferences of the different instructors.

OR

A web based application is to be developed for e-administration of computer labs of an institution which eases the tasks of the administrator, instructors, HoDs of various departments, technical staff and students The computing facilities includes computers, Printers, LCDS, Digital Boards etc. on a 24×7 basis to carry out academic experiments with all the necessary software installed and configured. The software should also help the administrator and instructors to maintain proper documentation of the computing systems.

***Q3)*** Institute of Management studies (IMS) has organised an International conference with various subject tracks. The conference details are uploaded on the web site developed by the institute. A participant has to register online under category student, Faculty member, Research scholar and corporate. He/She has to upload an abstract of his/her paper. If It gets selected he/she has to upload final paper along with the registration fee. The registration fee varies according to the category of the participants. The payment should be done online. The paper presentation schedule will be displayed on the website under the defined tracks. After the conference, the presented papers get published in online journal and particapants can give his/her feedback on line.

Draw the following diagrams for the above case:

a) Use Case Diagram **[10]**

b) Class Diagram **[10]**

OR

a) Draw Activity diagram for registering a billing complaint to MSEB. **[10]**

b) Draw State Transition Diagram for a toy Robot, with following functionalities. **[10]**

i) When the Robot is SWITCHED ON, it should greet as per the time (Morning, Afternoon etc)

ii) It should behave as per your order - "Walk Straight" 'Run", and "Stop".

iii) Set time for the robot

iv) After 6pm, it SWITCHES ON it own lights.

v) When the battery is down it gives an indication for charging it by saying "Battery Down?" Similarily, after the charging is complete it says "Battery Full".

***Q4)*** a) Elaborate on the artefacts in Scrum. **[4]**

b) Enumerate the attributes of web-based systems and Applications. **[4]**

OR

a) Explain the four values of Agile Manifesto with its meaning. **[4]**

b) Elaborate on any four Extreme Programming Practices. **[4]**

***Q5)*** Draw the User Interface Screen to lodge a grievence against noise pollution in your neighbourhood on the government noise pollution grievance redressal and monitoring system. **[4]**

OR

Draw the user Interface Screen to generate vistors Gate pass. **[4]**