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]