VIT

Vellore Institute of Technology

School of Information Technology and Engineering

Fall Semester 2022-2023 - Fresher

Continuous Assessment Test – I

Programme Name & Branch: MCA

Course Name & code: ITA5001- Software Project Management

Class Number (s): VL2022230105089, VL2022230105085, VL2022230105081

Slot: A2

Faculty: Dr. J. Karthikeyan, Dr. J. Prabhu, Dr. Parvathi. R

Exam Duration: 90 Min. Maximum Marks: 50

General instruction(s): Answer All the Questions.

Q.No.	Question	Max. Marks
1.	a) The Passport office of India decides to extend their services to their customers through an enhanced online portal. Identify the different stakeholders in the project and specify the objectives of the project. (5 marks) b) Identify the important characteristics of software development project which make these harder to manage compared to other types of projects. (5 marks)	10
2.	Assume yourself to be a project manager. List some of the problems faced during the development of software projects.	10
3.	Illustrate in detail the ISO 12207 SDLC with neat diagram.	10
4.	Explain the major activities carried out by a software project manager and the order in which these are carried out based on Stepwise project planning.	10
5.	The table below gives the estimated cash flow for two different projects.	10

Estimated Project Cash Flows

Year	Project (A)	Project (B)
0	-2,00,000	-1,50,000
1	60,000	60,000
2	75,000	50,000
3	35,000	40,000
4	40,000	25,000
5	20,000	15,000

Specify which project can be undertaken for the development based on

a) Net Profit **(2 marks),**

b) Payback Period **(2 marks),**

c) ROI **(2 marks),**

d) Net Present Value (NPV) for each of the project's A and B using the discount rate 7%. **(4 marks)**

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Fall Semester 2022-2023 - Fresher

Continuous Assessment Test – II

Programme Name & Branch: MCA

Course Name & code: ITA5001- Software Project Management

Class Number (s):VL2022230105089, VL2022230105085, VL2022230105081

Slot: A2

Faculty : Dr. J. Karthikeyan, Dr. J. Prabhu, Dr. Parvathi. R

Exam Duration: 90 Min. **Maximum Marks: 60**

General instruction(s):

Use scale and pencil to draw diagrams.

1. Design the Network model using precedence network conventions for the project specified from the following table

	Activities	Duration	Precedence
A	Hardware selection	7	-
B	Software design	4	A
C	Install hardware	8	-
D	Code and test software	4	B
E	File take-on	6	G
F	Write user manuals	12	E
G	User training	3	-
H	Install and test system	2	C,D,F

i. Identify Forward Pass, Backward Pass, and the critical paths (10 marks)

ii. Determine Total float, Free Float and Interfering float. (5 marks).

2. A Furniture maker is going to produce a new wooden framed Settee with foam cushions. These are the tasks that must be done by the furniture maker and his assistants and the times they will take:

Activity	Duration	Precedence
A	6	-
B	5	-
C	4	-
D	4	A
E	3	B
F	4	B
G	7	C
H	3	D,E
I	6	D,E
J	8	F,G
K	2	H

Find the earliest date, latest date, slack, and critical path using Activity on Arrow (AoA) method to complete this furniture work.

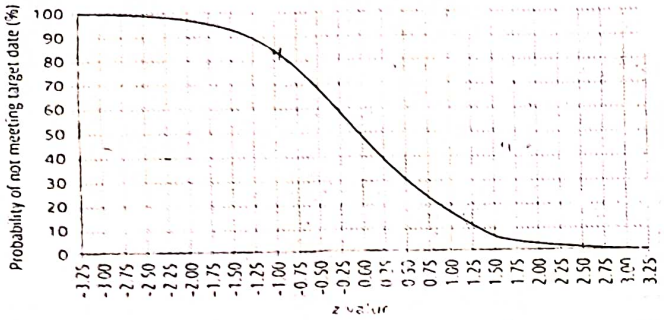
3.

a. Calculate the expected duration (t_e) and standard deviation (s) of the below activities. (5 marks)

b. Find the expected duration (t_e) and standard deviation (s) of the events using PERT. (5 marks)

c. Calculate the probability of not meeting target date of project completion at 28 days (%) by referring to the Z Graph given below: (5 marks)

Activity	Optimistic (a)	Most Likely (m)	Pessimistic (b)	Precedence
A	6	8	10	-
B	8	10	14	-
C	5	7	10	A
D	5	6	8	-
E	8	9	12	B
F	7	10	11	C, E
G	4	7	10	D



4. Identify the Risk planning from the following scenario and give reasons to justify your answer and mention its advantages and disadvantages.

Network monitoring takes note of slow or failing systems and notifies the network administrator of such occurrences. Such notifications can take the form of email messages, pager alerts, or plain old phone calls. No matter what form they take, network problem messages should take the highest priority. Network monitoring can alert a network administrator to problems caused by overloaded systems, crashed servers, lost network connections, virus or malware infections, and power outages, among other things. Also network monitoring software makes a practice of regularly taking virtual snapshots of the network's workflow. Any irregularities in this workflow are logged and, if they are serious enough, reported to the network administrator. Network monitoring can also be as basic as tracking the flow of visitors to and from a website also tracking such statistics as time of visit, number of pages on the site visited, and entry and exit URLs. Website network monitoring software tracks and reports web activity for analysis

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Final Assessment Test – Jan/Feb 2023

Course: ITA5001 - Software Project Management
Class NBR(s): 5083 / 5090 Slot: A1
Time: Three Hours Max. Marks: 100

KEEPING MOBILE PHONE/SMART WATCH, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE

Answer ALL Questions
(10 X 10 = 100 Marks)

1. Ramesh is the manager of a software development section. On Tuesday at 10.00 am he and his fellow section heads have a meeting with their group manager about the staffing requirements for the coming year. Paul has already drafted document 'bidding' for staff. This is based on the work planned for his section for the next year. The document is discussed in the meeting. At 2.00 pm Ramesh has a meeting with his senior staff about the important project his section is undertaking. One of the software development staff has just had a road accident and will be in hospital for some time. It is decided that the project can be kept on schedule by transferring another team member from less urgent work to his project. A temporary replacement is to be brought in to do the less urgent work but this might take a week or so to arrange. Ramesh has to phone both the personnel manager about getting the replacement and the user for whom the less urgent work is being done explaining why it is likely to be delayed. Identify essential management responsibilities Ramesh was responding to at different points during his day.

2. John decides and specified four modules for an online academic project development. Draw an activity network for the same. Further, four specifications need to be carefully checked to see that they are consistent and compatible. Redraw the activity network to reflect this.

3. Consider the table given below for designing an activity network considering activity-on-node and identify the critical path to estimate the project duration. Perform forward pass and backward pass to calculate Earliest Start, Earliest Finish, Latest Start, Latest Finish and Float value for each activity in the network.

Activity Name	Duration (Weeks)	Precedence
A	6	-
B	4	-
C	3	A
D	4	B
E	3	B
F	10	-
G	3	E,F
H	2	C,D

4. Consider a project which has following time(in weeks) estimates for different activities:

Activity Name	Optimistic(a)	Most Likely(m)	Pessimistic(b)
A	5	6	8
B	3	4	5
C	2	3	3
D	3.5	4	5
E	1	3	4
F	8	10	15
G	2	3	4
H	2	2	2.5

Compute the expected time (Te) and standard deviation (s) of each activity. Design the PERT network after calculating the event's standard deviation. Assume the target date for the event number 4, 5 and 6 as 10, 10 and 15 weeks respectively. Compute the z values for each node that has target date.

5. Describe Bohem's top ten development risks associated to a software project and identify risk reduction techniques associated with those risks.

6. A software developer working on Lopez's project has written the first 500 lines of a Java program that is estimated to require 1000 lines of code. Explain why it would be unreasonable to assume that the programming task is 50% complete. How might you make a reasonable estimate of how near completion it might be?

7. How would you evaluate the following aspects of a project proposal?
   - The usability of an existing software application.
   - The usability of a software application that is yet to be designed and constructed.
   - The maintenance costs of hardware to be supplied.
   - The time taken to respond to requests for software support.
   - Training.

8. A new analyst/programmer is to be recruited to work in John's team. The intention is to recruit someone who already has some experience. Make a list of the types of activities that the analyst/programmer should be capable out that can be used as the basis for a job specification.

9. Consider yourself a project manager for developing an online patient's portal system for a reputed hospital in Vellore district. Identify the possible stakeholders and their potential roles and responsibilities involved in the development of the project.

10. Describe the different development phases of Agile model with its advantages. Also, illustrate the reasons to use Agile model in most of the software industries nowadays.

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Final Assessment Test- Jan/Feb 2023

Course: ITA5001 - Software Project Management

Class NBR(s): 5081/5085/5089 Slot: A2

Time: Three Hours Max. Marks: 100

KEEPING MOBILE PHONE/SMART WATCH, EVEN IN 'OFF' POSITION, IS TREATED AS EXAM MALPRACTICE

Answer ALL Questions

(10 X 10 = 100 Marks)

1. a) Tirumala Tirupati Devasthanam board has planned to implement computer-based system to help the pilgrims to book various darsan tickets, collect donations, and virtual darsan facility. Identify the different stakeholders in the project and specify the objectives of the project. [5]

   b) Assume that you are a developer in software solution company. Write down the problems with software projects faced by the developers in your point of view. [5]

2. The cash flow projections for Project "A" and "B" are given in the table below. Specify which project can be undertaken for the development based on Net Profit, Payback Period , ROI, Net Present Value (NPV) for each of the project's A and B using the discount rate 12%. Justify your answer. [2+1+2+5]

Estimated Project Cash Flows		
Year	Project (A)	Project (B)
0	-2,50,000	-200,000
1	65,000	10,000
2	80,000	60,000
3	20,000	25,000
4	30,000	20,000
5	15,000	55,000

3. E-Vote - This is a web application for voting through the internet for the nominees/parties. Social Security Number is used as a primary key and will integrate with the biometric device for thumb impression. The citizen will log in to the E-vote website with the help of SSN as user and password (generated by the citizen in the first login). In the next level, the system will ask for the thump impression through the biometric device. If both get matched or satisfies the condition next navigation is for "Voting". Based on the details stored "Voting" form will be displayed. So, they cannot vote for any other areas. This software is published on the internet but accessed only by the KIOSK available in each polling area. This software is integrated with the citizen details like name, dob, parent's name, children, married/unmarried, SSN, and some details which will be uploaded to the VAO about the citizen like disability, death, etc (some confidential data). Because this will lock the voting option for the citizens who were expired, of course, it will lock the user the login. Nobody can misuse the login.

   Discuss the step wise project planning for the mentioned system with neat diagram.

4. Consider the following data set for activities, precedence, and durations:

Activity	Pre-conditions	Duration
A	-	7
B	-	3
C	A	6
D	B	8
E	B	5
F	C, D	2
G	-	10
H	E, G	11
I	F, H	6
J	I, H	4

a) Carry out a forward and a backward pass to compute the four schedule dates – Earliest Start, Earliest Finish, Latest Start, and Latest Finish. [6]

b) Compute the Total Float, Free Float, and Interfering Float. [3]

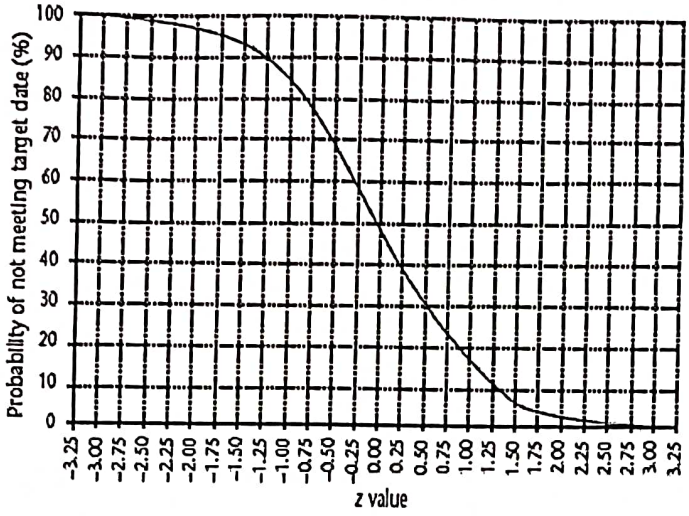
c) Identify the critical path. [1]

5. Assume that you are a software risk manager. As part of your regular job profile, discuss the various forms of developmental risks that you come across and mention the respective risk reduction techniques that you follow.

6. a) Consider the series of events in a software project as given in the following table. Apply PERT to calculate the expected duration (t_e) and the standard deviation **(s)** for the events. [7]

Activity	Precedents	Optimistic (a)	Most Likely (m)	Pessimistic (b)
A	-	4	6	7
B	-	5	7	11
C	-	10	13	15
D	A	2	4	8
E	B	3	7	9
F	B	8	10	13
G	C	7	10	11
H	F, G	4	5	7
I	D, E	5	6	8

b) Consider the target date for the last event=30, Calculate the Z value and identify the probability of missing the target for the last event using 'Z' graph. [3]



7. Explain any two of the visualizing progress techniques with neat diagram and suitable example. [5+5]

8. a) Describe the project control cycle with neat diagram. [5]

   b) Assume that the project is to be completed in one year at the cost of Rs.5,00,000. After three months, you realize that the project is 20% complete at a cost of Rs.1,50,000. Assess the performance of the project. [5]

9. a) Assume that you are making a Contract specifies that an information system application is to be designed, constructed, and delivered at a cost of Rs. 5000 per FP. Before acceptance testing, the customer asks for changes to some of the functions in the system accounting to 400 FPs, delete some of the functions which amount to 300 FPs and some new functions which amount to 400 additional FPs. Using the below table, Calculate the additional charges. [5]

	Pre-acceptance testing handover	Post-acceptance testing handover
Additional FPs	100%	100%
Changed FPs	130%	150%
Deleted FPs	25%	50%

   b) Assume that you are the Project manager of an information technology solution company that provides turnkey solution to the customer. Describe any five of the typical terms that must be included in the contract. [5]

10. a) Write short notes on any one of the following [5]
    i) Delphi approach
    ii) Maslow's hierarchy of needs

    b) Social loafing is a problem that employees often encounter when carrying out group assignments. What steps can participants in a group take to encourage team members to 'pull their weight' properly? [5]

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