

Reg.No.: 

--	--	--	--	--	--	--	--	--	--	--	--



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]  
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 60005**

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Seventh Semester

Information Technology

U19ITV53 – SOFTWARE PROJECT MANAGEMENT

(Regulation 2019)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Consider an organization that handles multiple software projects. Write one important benefit that the organization should experience, if the organization starts using project portfolio management.	2	K2	CO1
2.	Name any two types of plans that are usually made by a project manager before project execution starts.	2	K1	CO1
3.	Suppose a manufacturing company is planning to undertake an inhouse software development project. Identify any two important costs that must be considered during cost/benefit analysis, other than the manpower cost.	2	K2	CO1
4.	Which project attribute is used by the basic COCOMO model to predict project costs? Also identify any one project attribute using which the intermediate COCOMO arrives at a refined cost estimate.	2	K1	CO2
5.	Identify any two important categories of risks for most software projects. Give examples of these two risks.	2	K1	CO3
6.	In the earned value (EV) analysis method, what do you mean by schedule variance? How is it computed?	2	K1	CO4
7.	Write any one way in which the project manager can leverage identification of the critical paths in the project to effectively manage the project.	2	K2	CO4

8.	What does “change control” mean in software project management? Write one problem that may arise if effective change control is not practiced in a project.	2	K1	CO2
9.	Why a chief programmer team structure should not be used in a technically challenging project?	2	K2	CO5
10.	Briefly explain what is the Taylor’s view point of motivating people. Why is it hard to put in practice in software industry?	2	K2	CO5

**PART – B**

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Distinguish between software product development projects and outsourced projects. Explain the key ways in which managing an outsourcing project differs from those of a product development project.	13	K2	CO1
(OR)				
b)	Identify the important characteristics of software development projects which make these harder to manage compared to other types of projects; say for example, a building construction project.	13	K3	CO1
12. a)	Suppose a project is budgeted to cost Rs. 150,000. The project is to be completed in 18 months. After two months, the project is 10% complete at an expense of Rs. 25,000. It was planned that after 2 months, 15% of the project work should have been completed. Compute the cost performance index and the schedule performance index. Interpret these values to assess the progress of the project.	13	K3	CO2
(OR)				
b)	List down the drawbacks of the Lines of Codes metric that can be handled by the Function Point (FP) Metric for software size estimation. How FP handles those drawbacks? Further, list down the drawbacks of FP Metric.	13	K3	CO2

13. a) Consider a software project whose activities, their respective durations, dependencies and resource types needed for completing an activity have been shown in the following table. 13 K3 CO3

Activity	Duration in weeks	Depends on
A	3	----
B	1	A
C	2	A
D	4	A
E	3	B
F	3	C
G	6	D
H	3	E,F,G

Draw up an activity network representation and determine the earliest time by which the project can be completed.

(OR)

- b) Consider a project for which the different planned activities, their precedence ordering, and the estimated time for completion of the activities are given in the following table. Identify the sequence of activities that is on the critical path. 13 K3 CO3

Activity	Immediate follower	Estimated time in weeks
A	E,B	3
B	C,F	2
C	D,G	8
D	F	4
E	F	5
F	---	10
G	---	10

14. a) What are the major types of contracts with the vendor of a software service provider based on payments to be made to the contractor for the completed work. If you are trying to enter into a contract with a vendor for maintaining your legacy software, discuss the pros and cons of each type of the contract you have identified. 13 K2 CO4

(OR)

- b) What does the computed earned value at any time indicate to a project manager? Suppose the Earned Value (EV) for an MIS project is Rs. 100,000 and the Actual Cost (AC) is Rs. 80,000. The Budget at Completion (BAC) is estimated at Rs. 200,000. What is the current *Cost Performance Index* (CPI) of this project? 13 K3 CO4

15. a) Write five important factors that have been identified by Oldham-Hackman job characteristic model for employee job satisfaction. 13 K3 CO5

(OR)

b) Three different mental obstacles to good decision making are: faulty heuristics, escalation of commitment and information overload. What steps can be taken to reduce the problems caused by each of these? 13 K3 CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16. a)	<p>A medicine shop intends to automate its routine activities including sale of medicine, medicine ordering from wholesalers, maintaining inventory, profit/loss computation. The shop deals with about 10,000 types of medicines. At present, all the activities of the shop is being carried out manually by five sales person and a store keeper cum accountant. The shop intends to award the work of developing the software for automating its routine activities to a vendor. The software would have to be installed in the shop in a fully operational mode. To speed up the delivery of software, the vendor would have to create the operational database during the development of the software. This would involve entering the details of the medicines into a CSV (comma separated values) file. After development of the software, the CSV data needs to be imported into the software. After alpha testing, the software would have to be tested in the operational environment. For this, the software would have to be run along side the manual system in the shop for a week. During this time, user training would also have to be conducted.</p> <p>i. Identify and represent the deliverables using a product breakdown structure (PBS). [4 marks]</p> <p>ii. Identify and represent the work pieces using a Work Breakdown Structure (WBS). [4 marks]</p> <p>iii. Develop an activity network based on the WBS. [7 marks]</p>	15	K3	CO4

(OR)

b) Consider that a software development organization is developing an IT application. The specification of the IT application is estimated to take one week to complete. When specification is complete, work can start on four software modules: A, B, C, and D. Simultaneously, one engineer will start to develop the user manual, which should take about 8 weeks to complete. Design/coding of the modules A, B, C, and D will need 10, 8, 15 and 10 weeks, respectively. Unit testing the four modules A, B, C, and D will take 2, 3, 5, and 4 weeks, respectively. After both modules A and B have been unit tested, they would be integration tested. This will require 5 weeks. Once integration testing of A and B is over, D will be integrated with A and B and tested. This will take 3 weeks. Finally, all four modules will be integrated and tested. This will take 7 weeks. Finally, system testing will be carried out which is expected to take 10 weeks. Develop the activity network model for the project. Using the activity network, derive the earliest and latest start dates for each activity and the earliest and latest finish dates. Work out the shortest project duration.

15

K3

CO4