

SPM: QUESTION BANK

SOFTWARE PROJECT MANAGEMENT

FALL SEMESTER, YEAR (VIth, 3rd)

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(SPM)

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Question Bank Part-1 of “SOFTWARE PROJECT MANAGEMENT (KOE-068)”

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Question Bank Part-1

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Year- 3rd Year, Semester- 6th Sem, Branch- IT, Session- Even Semester (2021-22)

QUESTION BANK PART-1

SPM

SOFTWARE PROJECT MANAGEMENT

By SHWETA TIWARI
SOFTWARE PROJECT MANAGEMENT

COVERED ALL UNITS 1-5.

SOFTWARE PROJECT MANAGEMENT

This (Question Bank Part-1 Easy to Advanced Level (Belong your Syllabus)) only attempts to discover some questions that can be generated in "SOFTWARE PROJECT MANAGEMENT" with all these questions. If you find any errors then please do write to us.

UNIT I - PROJECT EVALUATION AND PROJECT PLANNING		
<i>Importance of Software Project Management – Activities Methodologies – Categorization of Software Projects – Setting objectives – Management Principles – Management Control – Project portfolio Management – Cost- benefit evaluation technology – Risk evaluation – Strategic program Management – Stepwise Project Planning.</i>		
PART – A		
Q.No	Questions	<u>NOTES</u>
1.	Define software project management.	
2.	Point out the characteristics of software project planning.	
3.	List the sequence of stages involved in a typical project life cycle.	
4.	Define contract management.	
5.	Distinguish contract management and technical project management.	
6.	What is the need of Software Project Management?	
7.	Compare program managers and project managers.	
8.	Outline the software quality metrics.	
9.	What do you understand by payback period?	
10.	Do you agree that decision trees are helpful in risk handling? Compose your views.	
11.	Identify how the software projects can be classified.	

12.	Illustrate the approaches of portfolio Management.	<u>NOTES</u>
13.	When is Net Present value calculated for a project?	
14.	Define project Evaluation.	
15.	Give the steps to identify project scope and objectives.	
16.	What would be the ROI for the software project development if the net profit is \$60,000 for 3 years and the total investment is \$100,000? Evaluate it.	
17.	Formulate the need to develop cash flow forecasting life cycle.	

18.	Identify how the feasibility of an individual project can be evaluated.	<u>NOTES</u>
19.	Compare the risk identification and evaluation.	
20.	Interpret the problems with software projects from the manager's point of view?	

PART – B

1.	i) What is a project? Outline the characteristics of project. (4) ii) How are infrastructure projects different from software projects?(4) iii) Outline the activities involved in management. (5)	<u>NOTES</u>
2.	Discuss the different ways of categorizing software project in detail. Interpret the role of stakeholders and classify them. (13)	
3.	Illustrate the following: i) Setting objective of the project.(6) ii) Principle of project management process.(7)	
4.	i) Analyze in detail about project control cycle.(6) ii) Distinguish traditional and modern Project Management Practices.(7)	
5.	i) Assess project portfolio management in detail.(7) ii) Interpret the need of strategic programme management.(6)	
6.	Develop the ABC college payroll system for the following i) Identify project scope and objective.(4) ii) Identify project infrastructure.(4)	

7.	Describe the cash flow forecasting with different cost benefit evaluation techniques.(13)	
8.	Summarize the following in detail: i) Contract Management.(5) ii) Business case and Project success and failure.(8)	<u>NOTES</u>
9.	i) What is Risk? Discuss about Risk Management process. (7) ii) Identify the various paradigms, principles to manage the risks in project. (6)	
10.	Analyze the various software development life cycle activities as outlined by ISO12207 with neat diagram.(13)	
11.	Describe in detail the stepwise project planning with suitable diagram	
12.	Differentiate between a method and a methodology. What are the essential items that must be planned before carrying out a method or methodology? (13)	
13.	Examine in detail about various cost benefit analysis techniques with example.(13)	
14.	A public library is considering the implementation of a computer based system to help administer book loans at libraries. i) Identify the stakeholders. (5) ii) List the objectives of the project. (4) iii) Examine and measure the success and failure of the project. (4)	<u>NOTES</u>
PART – C		
1.	Identify the important characteristics of software development projects which make them harder to manage compared to other types of projects. Analyze for example, a building construction project.(15)	<u>NOTES</u>
2.	With your own suitable case study explain the decision tree method of risk analysis. (15)	
3.	Formulate an example why discounted cash flow techniques provide better criteria for project selection than net profit or return on investment. (15)	
4.	Suppose Brightmouth college has the option of either buying payroll software off-the-shelf at £50,000 or employing a programmer for 6 months at a salary of £5000 to develop the software. Perform cost-benefit analysis for the two options. You can make suitable	

	assumptions regarding any of the factors not stated in this problem statement. (15)	
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UNIT II PROJECT LIFE CYCLE AND EFFORT ESTIMATION		
<i>Software process and Process Models – Choice of Process models - Rapid Application development – Agile methods – Dynamic System Development Method – Extreme Programming– Managing interactive processes – Basics of Software estimation – Effort and Cost estimation techniques – COSMIC Full function points - COCOMO II - a Parametric Productivity Model.</i>		

PART – A		
Q.No	Questions	<u>NOTES</u>
1.	What is the function of spiral model?	
2.	Distinguish object driven and product driven project.	
3.	Identify the core values of Extreme programming.	
4.	Point out the various agile approaches.	
5.	Prioritize the short comings of waterfall model.	
6.	Propose any two advantages of function point analysis.	
7.	List the pros and cons of using pair programming over programmers working alone.	
8.	State the use of Rapid Application development (RAD) model	
9.	Give the advantages and disadvantages of Incremental delivery.	

10.	Organize the purpose of MoSCoW Classification.	<u>NOTES</u>
11.	What are the problems of over and under estimate?	
12.	Interpret the formula to measure the effort of the project in parametric model?	
13.	Construct the major components of function point analysis.	
14.	Point out the ways of moving data groups in COSMIC full function point model. Name the any two levels of COSMIC Model.	
15.	Determine the factors sensitive to system size in COCOMO II model.	
16.	Formulate the function point Mark II model of transaction.	
17.	What are the difficulties of project estimation?	
18.	List out the different effort estimation methods.	

19.	Summarize the categories of benefits.	
20.	Examine the advantages of agile unified process.	
PART – B		
1.	Evaluate the major shortcomings of the waterfall model? How have those shortcomings been overcome by the agile model? (13)	<u>NOTES</u>
2.	Summarize the following in detail: i) Software prototyping. (7) ii) Different ways of categorizing prototype. (6)	
3.	i) Demonstrate the incremental delivery with neat diagram.(8) ii) Identify the advantages and disadvantages of incremental delivery.(5)	
4.	i) Examine the Dynamic system development method in detail.(7) ii) Analyze the role and principles of extreme programming.(6)	
5.	i) Describe the Rapid Application Development model.(7) ii) List the features of Agile method.(6)	
6.	Illustrate the steps involved for Extreme Programming. List out its advantages and disadvantages. (13)	
7.	Explain in detail about Managing interactive processes.(13)	
8.	i) Describe the basis for software estimation in detail.(7) ii) Describe the expert judgment and estimation by analogy in detail.(6)	
9.	i) Outline the extended function point analysis in detail with an example(7) ii) What are effort and cost estimation techniques? Explain in detail.(6)	
10.	Demonstrate the following: i) Function point mark II method. (6) ii) COSMIC full function point method. (7)	
11.	Examine the COCOMO II parametric productive model in detail with the steps in effort estimation technique.(13)	
12.	Briefly describe the top down and bottom up approach of the estimation in detail. (13)	<u>NOTES</u>
13.	Analyze the methodology used to evaluate risk in a project.(13)	

14.	Formulate the estimates done and explain the problems with over and under estimates. Develop your own example and explain.(13)	
PART – C		
1.	Discuss the spiral software development life cycle model with diagrammatic illustration. What are the spiral model strengths? What are the spiral model deficiencies? When to use the spiral model? Discuss. (15)	<u>NOTES</u>
2.	Create the maximum value that the scale factor can have, give that there are five exponent drivers and the maximum rating for an individual driver is five and the minimum is zero? (15)	
3.	Suppose you are the manager of a software project. Explain why it would not be proper to calculate the number of developers required for the project as a simple division of the effort estimate (in person- months) by the nominal duration estimate (in months). (15)	
4.	Identify the pros and cons of using pair programming over programmers working alone. Based on your analysis, point out if there are any situations where the pair programming technique may not be suitable. (15)	

UNIT III ACTIVITY PLANNING AND RISK MANAGEMENT		
<i>Objectives of Activity planning – Project schedules – Activities – Sequencing and scheduling – Network Planning models – Formulating Network Model – Forward Pass & Backward Pass techniques – Critical path (CRM) method – Risk identification – Assessment – Risk Planning –Risk Management – – PERT technique – Monte Carlo simulation – Resource Allocation – Creation of critical paths – Cost schedules</i>		
PART – A		
Q.No	Questions	<u>NOTES</u>
1.	List the objectives of activity planning.	
2.	Compare work breakdown structure and Product breakdown structure.	
3.	Differentiate Activity-On-Arrow (AOA) from Activity-On-Node (AON).	
4.	Identify the various approaches you would use to identify activities.	
5.	How will you formulate risk reduction leverage? Outline the strategies for risk reduction that can be adopted for the following software project risk: Personnel (staffing) shortfalls.	

6.	Illustrate how you would use hybrid approach of project scheduling.	
7.	What is Monte Carlo simulation method?	

8.	Construct the changes would you make to shorten the project duration.	<u>NOTES</u>
9.	How would you show a “Dangle” in an activity Network?	
10.	Illustrate Hammock activities.	
11.	Summarize the role of forward pass and backward pass.	
12.	Analyze the use of activity float. Appraise the need for modeling precedence networks.	
13.	Define ‘Free floats’ and ‘interfering floats’.	
14.	Compare PERT and CPM.	
15.	List out the categories of cost.	
16.	Interpret what is meant by risk exposure.	
17.	Analyze the factors involved in risk planning.	
18.	Outline risk transfer with an example.	
19.	Define hazard.	
20.	Identify the time estimates in PERT.	

PART – B

1.	i) Summarize the stages involve in creating a project schedule. (6) ii) Describe the approaches used for identifying activities in a project. (7)	<u>NOTES</u>
2.	(i) What are the objectives of designing a proper project schedule? Explain it’s significance. (7) (ii) What is risk analysis? What is its significance in project management? (6)	
3.	Identify the various network planning model and make a comparison between them. Explain rules for constructing precedence network with an example. (13)	
4.	Analyze the forward pass activity in detail and show the calculations for the earliest start and completion date with an example. (13)	

5.	Explain in detail about the backward pass activity with neat diagram.(13)	
6.	Develop an Activity-On-Arrow network. Explain rules and conventions for activity on arrow network. (13)	
7.	Show the steps for identifying the critical path for an example network with neat diagram and tell how the critical activities can be identified. (13)	<u>NOTES</u>
8.	Outline the term Risk. Interpret the issues related to managing the risk. (13)	
9.	i) Identify and model the use of checklist and brain storming in Risk Identification. (8) ii) Classify the categories of risk.(5)	
10.	i) Examine the Monte Carlo Simulation with an example. (6) ii) Examine about Risk Planning and steps to be followed. (7)	<u>NOTES</u>
11.	Describe PERT network in detail with example. (13)	
12.	i) Explain about the cost schedule in detail. (7) ii) Interpret the factors to be considered in allocation of resources. (6)	
13.	i) Discover the different categories of project resources in detail. (6) ii) Analyze on various scheduling resources. (7)	
14.	Explain how you will identify the major risks, & identify the strategies for minimizing each of those risks. (13)	
PART – C		
1.	Draw the critical path diagram for the tabulated activities. Identify critical path and the duration of the project. (15)	<u>NOTES</u>
2.	Interpret and assess the objectives and sub-objectives of the Brightmouth College payroll project. What measures of effectiveness could be used to check the success in achieving the objectives of the project? (15)	

3.	Discuss about the project life cycle of two projects of your own. One of the project should be software development. Describe about the projects and discuss about its life cycle. (15)	
4.	Formulate a suitable example to depict Monte Carlo Simulation. (15)	

UNIT IV PROJECT MANAGEMENT AND CONTROL		
<i>Framework for Management and control – Collection of data – Visualizing progress – Cost monitoring– Earned Value Analysis – Prioritizing Monitoring – Project tracking – Change control – Software Configuration Management – Managing contracts – Contract Management.</i>		
PART – A		
Q.No	Questions	<u>NOTES</u>
1.	Give the advantages and disadvantages of the EVA approach.	
2.	List out the steps in project control.	
3.	Mention the Deciding levels of monitoring.	
4.	Predict the different ways of collecting data.	
5.	List the categories of reporting.	

6.	Define change control.	<u>NOTES</u>
7.	Organize the techniques of visualizing progress.	
8.	Illustrate the advantages of fixed priced contracts.	
9.	Differentiate schedule variance, time variance and cost variance.	
10.	Compare budgeted cost of work scheduled and budgeted cost of work performed.	
11.	Define configuration management.	
12.	Draw the project control cycle model	
13.	Analyze the details needed to carry out EVA.	
14.	Interpret the typical terms of a contract.	
15.	Evaluate the need for monitoring the cost.	
16.	List the stages in awarding a contract.	
17.	Analyze the features of Open Tendering Process.	
18.	Compare Earned Value Analysis and Earned Value Management.	

19.	Identify the outcome of contract management.	
20.	Compose how to integrate the popular visual tools in monitoring and tracking the project progress?	
PART – B		
1.	i) Describe in details about creating the frame work for monitoring the project management and control. (7) ii) Scope and deliverables of software projects are changed frequently. This has severe implications on the projects. How can a project manager minimize their impact on the projects? (6)	<u>NOTES</u>
2.	Outline in detail about collection of data.(13)	
3.	i) Illustrate the use of Gantt and timeline charts in visualizing the project progress with suitable diagrams. (8) ii) Organize your views on cost monitoring. (5)	
4.	Analyze the various ways in visualizing the progress of the project with neat diagram. (13)	
5.	Explain the earned value analysis method in detail. (13)	
6.	i) Develop the procedure to get back the project to target. (8) ii) Formulate the process of prioritizing monitoring. (5)	
7.	i) Describe the purpose of software configuration management. (6) ii) Explain in detail about configuration management process.(7)	
8.	Illustrate in detail the types of contracts with its checklist. (13)	
9.	Organize the various stages in contract placement in detail. (13)	
10.	(i) Scope and deliverables of software projects are changed frequently. This has severe implications on the projects. How can a project manager minimize their impact on the project? (7) (ii) Analyze the activities involved in software configuration management. (6)	<u>NOTES</u>
11.	Explain in detail the typical terms in contract.(13)	
12.	i) Summarize the various steps involved in change control procedure. (9) ii) Interpret the roles and responsibility of a configuration librarian.(4)	

13.	i) Analyze a baseline in the context of software configuration Management. How do the base lines get updated to form new Base lines.(4) ii) How the following can be prevented while using Configuration management tool? Explain (9) <ol style="list-style-type: none"> Two team members overwriting each other's work. Accidental deletion of work product. Unauthorized modifications to a work product. 	
14.	Describe the following in detail: i) Partial completion reporting (7) ii) Reb/Amber/Green(RAG) Reporting (6)	

PART – C

1.	Demonstrate in detail about contract management with assumed example. (15)	<u>NOTES</u>
2.	Interpret, who is responsible for Project Tracking. Evaluate the different ways to track a project. (15)	
3.	Assess the importance of cost monitoring in detail.(15)	
4.	Formulate with your own example how the earned value chart depicts scheduled progress, actual cost and actual progress(earned value) to allow the determination of spending, schedule and time variances. (15)	

UNIT V STAFFING IN SOFTWARE PROJECTS

Managing people – Organizational behavior – Best methods of staff selection – Motivation – The Oldham – Hackman job characteristic model – Stress – Health and Safety – Ethical and Professional concerns – Working in teams – Decision making – Organizational structures – Dispersed and Virtual teams – Communications genres – Communication plans – Leadership

PART – A

Q.No	Questions	<u>NOTES</u>
1.	Discover the objectives of managing people and organizing teams.	<u>NOTES</u>
2.	Tell the important causes of stress encountered in project.	
3.	Classify the different motivation theory.	

4.	Compose the 3 basic objectives of organizational behavior proposed by Taylor.		
5.	Define Taylor’s model.		
6.	Classify the different leadership style.		
7.	Formulate the 5 stages of team formation.		
8.	Identify the methods would you use to improve motivation.		
9.	Infer the measures to enhance job design.		
10.	Outline the different categories of decisions.		
11.	Define Herzberg’s two factor theory.		
12.	Recommend some mental obstacles to good decision making.		
13.	Construct the steps involved in selecting the right person for the job.		
14.	What do you understand by virtual team?		
15.	List the challenges of dispersed working.		
16.	Quote: Maslow’s hierarchy of need.		
17.	Compare personal and organizational stress.		
18.	Interpret the factors for job satisfaction in the Oldham-Hackman Job characteristic model.		
19.	What is the role of ethics in project management?		
20.	How would you apply your understanding in “Egoless Programming”?		
PART – B			
1.	Describe the organizational behavior with example.(13)		<u>NOTES</u>
2.	i) Summarize the factors to be considered in the Oldham-Hackman job characteristic model. (7) ii) Outline the Vroom’s expectancy theory. (6)		
3.	Organize, how would you select a new staff into a project along with the recruitment process? (13)		
4.	i) Examine the Maslow’s Hierarchy of needs with an example.(7) ii) Analyze the details on Taylorist model.(6)		
5.	Explain the following in detail: i) Stress(7) ii) Health and safety(6)		

6.	i) Compose your view on Ethical and Professional concern.(6) ii) Develop the project and functional organization structure and list out the advantages of functional team format.(7)	
7.	Describe the various models of Motivation in detail. (13)	
8.	Illustrate the 3 ways in which a software development department can be structured with suitable diagram.(13)	<u>NOTES</u>
9.	Illustrate the role of “Decision making” in the process of managing people and organizing teams. Identify the advantages and disadvantages of group decision making.(13)	
10.	Discover the different types of team structure adopted in an organization.(13)	
11.	i) Define leadership and explain different kinds of leadership power.(7) ii) Explain in detail about leadership style.(6)	
12.	What is virtual team? Discuss how to successfully build and manage a virtual team. (13)	
13.	i) Analyze the factors and characteristics that are involved in making a team.(7) ii) Inspect the different ways to improve the group performance.(6)	
14.	i) Discuss the leadership models and the functions of a leader with an example.(7) ii) Express about communication plan in detail. (6)	
PART – C		
1.	As a project manager, prioritize the characteristics that you would look for in a software developer while trying to select personnel for your team. (15)	<u>NOTES</u>
2.	Do staff selection relate with quality of product? Justify with appropriate reason. (15)	
3.	Estimate the advantages of a functional organization over a project organization. Also evaluate why software development houses prefer to use project organization over functional organization. (15)	
4.	In your final year project, categorize each participant according to the Belbin classification. Were there any duplications or gaps in any of the roles? Did this seem to have any impact on your progress? Propose your solution.(15)	

