



SCHOOL OF SCIENCE AND TECHNOLOGY
Semester 2, 2024



FINAL EXAMINATION PAPER

ITC401: IT PROJECT MANAGEMENT

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with pen) and **180 minutes (3 Hours) to complete this paper**.
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask from the supervisor. Write your name, course code and student identification number in the answer booklet and in the attendance sheet.
5. This paper contains two (2) sections A and B. All questions are compulsory to answer.
6. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
7. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1-15	Multiple Choice	15	27 minutes
B	16-40	Open Ended Questions	85	153 minutes
		TOTAL	100	180 Minutes

1. The project sponsor has approached you with a dilemma. At the annual stockholders meeting, the CEO announced that the project you're managing will be completed by the end of this year. The problem is that this is six months prior to the scheduled completion date. It's too late to go back and correct her mistake, and now stockholders expect implementation by the announced date. You must speed up the delivery date of this project. Your primary constraint before this occurred was the budget. Choose the best action from the options listed to speed up the project.
 - A. Hire more resources to get the work completed faster.
 - B. Ask for more money so that you can contract out one of the phases you had planned to do with in-house resources.
 - C. Utilize negotiation and influencing skills to convince the project sponsor to speak with the CEO and make a correction to her announcement.
 - D. Examine the project management plan to see whether there are any phases that can be fast tracked, and then revise the project management plan to reflect the compression of the schedule.
2. You've been assigned as a project manager on a research and development project for a new dental procedure. You're working in the Project Scope Management Knowledge Area. What is the purpose of the scope management plan?
 - A. The scope management plan describes and documents a scope baseline to help make future project decisions.
 - B. The scope management plan decomposes project deliverables into smaller units of work.
 - C. The scope management plan describes how project scope will be developed and how scope changes will be managed.
 - D. The scope management plan describes how cost and time estimates will be developed for project scope changes.
3. The process of decomposing deliverables into smaller, more manageable components is complete when:
 - A. Project justification has been established
 - B. Change requests have occurred
 - C. Cost estimates can be developed for each work element
 - D. Each work element is found in the WBS dictionary
4. An organization has two projects from which to choose. Project A will take three years to complete and has a NPV of \$85,000. Project B will take six years to complete and has an NPV of \$45,000. Which one is a better investment?
 - A. Project A
 - B. Project B

5. You are managing two projects and have been assigned to a third project that has just been approved. You begin the new project, and are able to manage it well along with the others you are managing. During initiating, you are focused on accomplishing a number of activities. Which of the following are you not concerned with at this time?
- A. Identifying and documenting business needs
 - B. Creating a project scope statement
 - C. Dividing a large project into phases
 - D. Accumulating and evaluating historical information
6. If estimates for total discounted benefits for a project are \$120,000 and total discounted costs are \$100,000, what is the estimated return on investment (ROI)?
- A. \$20,000
 - B. \$120,000
 - C. 20%
 - D. 120%
7. What is the primary focus of a project governance framework in IT project management?
- A. To outline the project schedule
 - B. To define roles and responsibilities for decision-making
 - C. To develop the project scope statement
 - D. To manage project costs
8. Which of the following is a key advantage of using Agile methodologies in IT projects?
- A. Rigidity in processes
 - B. Enhanced flexibility and adaptability
 - C. Longer delivery times
 - D. Increased documentation requirements
9. In Earned Value Management, what does a Cost Performance Index (CPI) value of less than 1 indicate?
- A. The project is on budget
 - B. The project is under budget
 - C. The project is over budget
 - D. The project is ahead of schedule
10. What is a common risk associated with integrating emerging technologies in IT projects?
- A. Reduced collaboration
 - B. Increased resource availability
 - C. Uncertainty regarding vendor support and compatibility
 - D. Enhanced customer satisfaction

11. Which of the following techniques is most suitable for qualitative risk analysis?
- A. Monte Carlo simulation
 - B. Risk probability and impact matrix
 - C. Expected monetary value analysis
 - D. Earned value analysis
12. What does the term "resource leveling" refer to in project management?
- A. The process of reallocating resources to eliminate resource over-allocation
 - B. The process of determining the budget for resources
 - C. The technique of measuring project performance
 - D. The method of assessing stakeholder influence
13. Which project management approach emphasizes collaboration, self-organization, and cross-functional teams?
- A. Agile
 - B. Waterfall
 - C. Lean
 - D. Six Sigma
14. Which of the following is NOT a common technique for developing a project schedule?
- A. Critical Path Method (CPM)
 - B. PERT Analysis
 - C. Monte Carlo Simulation
 - D. Resource Allocation Matrix
15. What does a Schedule Performance Index (SPI) of greater than 1 indicate?
- A. The project is behind schedule
 - B. The project is on schedule
 - C. The project is ahead of schedule
 - D. The project is over budget

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16. Discuss the scrum methodology highlighting all the different ceremonies. [3 marks]
17. Differentiate between project, program, and portfolio management. [3 marks]
18. List 5 things a project manager needs to initiate a project. [2 marks]
19. Explain the four frames of organizations. How can they help project managers understand the organizational context for their projects? [4 marks]
20. Discuss 5 approaches in developing the WBS. [2 marks]
21. Assume that the projected costs and benefits for this project are spread over four years as follows:
- Estimated costs are \$200,000 in year 1 and \$30,000 each year in 2, 3 and 4.
Estimated benefits are \$0 in year 1 and \$100,000 each in year 2, 3 and 4.
Discount rate is 9%
- Calculate the NPV, ROI and year in which payback will occur. Also after calculation explain in a paragraph if you recommend investing in this project. [3 marks]
22. Define project scope management and explain its importance in the context of IT projects. What techniques can be employed to prevent scope creep, and how can project managers ensure that all stakeholders have a clear understanding of the project scope? [3 marks]
23. Explain the key principles of security management in IT projects. Discuss how project managers can identify potential security risks and implement effective risk mitigation strategies. Provide examples of security measures that can be integrated into project planning and execution. [4 marks]
24. A systems approach emerged in the 1950s to describe a more analytical approach to management and problem solving. Elaborate on the 3 parts that are included in a systems approach. [3 marks]
25. What are the five stages of team development according to the Tuckman model? Briefly describe each stage. [5 marks]
26. Describe Maslow's hierarchy of needs. How does it relate to Information Technology projects? [5 marks]
27. Analyze the role of Earned Value Management (EVM) in assessing project performance. Discuss how project managers can use EVM metrics, such as Cost Performance Index (CPI) and Schedule Performance Index (SPI), to make informed decisions. Provide a scenario where EVM could help identify project deviations. [3 marks]

28. Discuss the importance of stakeholder management in IT projects. How can project managers effectively engage stakeholders throughout the project lifecycle? Provide strategies for managing stakeholder expectations and addressing conflicts that may arise. [4 marks]
29. Explain the role of communication management in ensuring project success. What strategies can project managers implement to facilitate effective communication among team members and stakeholders? Provide examples of communication tools and techniques that can enhance information sharing. [3 marks]
30. Discuss the significance of time management in IT project management. How can project managers effectively create and manage project schedules? Explore different scheduling techniques and tools that can be utilized to ensure timely project completion. [3 marks]
31. Analyze the challenges of resource management in IT projects. How can project managers ensure optimal allocation and utilization of resources? Discuss the importance of team dynamics and collaboration in resource management. [3 marks]
32. Discuss the significance of change management in IT project management. What processes should be in place to manage changes effectively? Provide examples of how change requests can impact project scope, schedule, and budget. [3 marks]
33. Consider a hypothetical IT project with a budget of \$500,000 and a timeline of 12 months. Midway through the project, the actual cost incurred is \$300,000, and the earned value is \$250,000. Calculate the Cost Performance Index (CPI) and Schedule Performance Index (SPI). Discuss what these indices reveal about the project's performance and recommend actions to improve it. [3 marks]
34. Compare and contrast Agile and Waterfall project management methodologies in the context of IT projects. Discuss the advantages and disadvantages of each approach, and provide examples of scenarios where one methodology may be more suitable than the other. [3 marks]
35. Discuss the importance of aligning IT projects with organizational strategy. What frameworks or methodologies can be employed to ensure that IT projects contribute to achieving the broader strategic goals of the organization? Provide real-world examples to support your argument. [3 marks]
36. Evaluate the role of advanced risk management techniques, elaborating on Monte Carlo simulation and failure mode and effects analysis (FMEA). How can these techniques improve decision-making processes? [3 marks]
37. Examine the concept of project governance in IT project management. What frameworks and best practices can be employed to ensure effective governance? Discuss the implications of poor project governance on project success and organizational reputation. [4 marks]

38. Explore the challenges and opportunities of integrating emerging technologies (such as AI, blockchain, or IoT) into IT project management. How can project managers prepare for and manage the uncertainties that come with these technologies? Provide examples of projects that have successfully integrated emerging technologies. [5 marks]
39. Discuss the influence of organizational culture on the success of IT projects. How can project managers assess and leverage organizational culture to improve project outcomes? Provide examples of organizations where culture played a critical role in project success or failure. [4 marks]
40. Examine the ethical challenges that project managers may face in IT projects. Discuss how ethical decision-making frameworks can guide project managers in addressing ethical dilemmas. Provide examples of ethical issues encountered in real-world IT projects and their resolutions. [4 marks]

End of Exam

