TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2079 Baishakh

Exam.		**Back**	
Level	BE	**Full Marks**	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT 701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt __All__ questions.
✓ The figures in the margin indicate __Full Marks__.
✓ Assume suitable data if necessary.

1. Explain about the Project and describe in detail about the characteristics of the Project. [2+3]

2. Describe the different skill sets required by a project manager and briefly explain each of them. [2+3]

3. Explain about the Project Management Institute (PMI) and describe the area of knowledge for the project manager to successfully completion of the Project. [2+3]

4. Describe the need work breakdown structure (WBS) and explain success criteria for projects. [2+3]

5. Describe with comparison between the project management and project portfolio management. [5]

6. Describe about the quality planning, quality assurance and quality control and explain different approaches to these processes. [5]

7. Construct the CPM network for a project with following activities: [15]

Activities	A	B	C	D	E	F	G	H
Predecessor	-	-	A	B	D, F	B	C	E, G
Durations (Days)	11	5	10	7	7	6	5	6

Find:

a) Draw CPM Network Diagram
b) Critical path
c) Project completion time
d) EST, EFT, LST, LFT and Total float time

8. Describe the need of monitoring, evaluation and controlling process and explain its importance with suitable example of the local project. [2+3]

9. Explain about the project procurement management and explain the types of processes adopted for procurement. [3+2]

10. Describe about the project integration management and describe the inputs, tools and techniques used to develop the project charter. [2+3]

11. Explain about the importance of effective communication in project management and describe its role for the successful project completion. [3+2]

12. Write short notes on: [5×3]

a) Decision Tree analysis
b) Balance scorecard
c) Expert judgments
d) Contract (project) closure procedure
e) Project Risk Management

TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2078 Bhadra

Exam.		**Regular**	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT 701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ *Necessary tables are attached herewith.*
✓ Assume suitable data if necessary.

1. a) What is PMBOK? How the external environmental influences on ICT project? [4]

   b) Define the project portfolio management and what are the key benefits of project portfolio management? [4]

   c) What is the role of Project Management and also explain the recommended skills for all project managers as well as ICT project managers. [4]

2. a) Describe the drivers for the project success and factor that slowing the project the project success in detail. [2+2]

   b) What are project quality requirement? How it helps in project quality management. Explain role of balanced scorecard in it. [3+3]

3. Define project risk and risk audits. Differentiate the qualitative risk analysis and quantitative risk analysis process. [3+3]

4. New software development project has the following different activities to be accomplished as listed on table. Answer the followings: [3×4]
   (i) Prepare the activity network diagram.
   (ii) Identify the critical tasks and calculate the total completion time.
   (iii)If all the activities duration estimates are with variance of 2.25 weeks find out the probability of project completion within 30 weeks and 39 weeks.

Activity	Immediate Predecessor	Duration (in weeks)
A	-	2
B	-	4
C	-	6
D	A	8
E	B	10
F	B	8
G	C	12
H	D, E	12
I	G	4
J	F, H, I	7

5. Prepare a statement of work (SOW) and IS project which is to be developed as Engineering College MIS. You are free to make your own assumptions regarding the system. [8]

6. Compare the followings: [4×3]
   a) Developing project management plan versus monitoring and controlling of project.
   b) Risk analysis using Decision tree technique versus Simulation technique.
   c) Data analysis using Box plot versus Scatter plot.
   d) Detail Project Report (DPR) document versus Request for Proposal (RFP) document.

7. a) What is system view of project management? Explain about three sphere model of system management. [2+2]
   b) Define Project Integration Management. And Also compare project scope with product scope. [2+2]

8. Write short notes on: [4×3]
   a) Effective meeting conduction process
   b) PMI framework
   c) Seller selection criteria
   d) Tornado analysis

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TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2076 Ashwin

Exam.		Back	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT 701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) What are the triple constraints of Project? How is project different from operational work? [3+2]
   b) What are the essential interpersonal skill and managerial skill to be a successful Project Manager? [2+3]

2. Chuchche Consulting Company (3C) is considering a new project for a local hospital to be serviced and they are in planning phase. Answer the following as per the calculations from the different project activities timings of Table-A. [6+3+3]

Activity	Description	Duration (Weeks)	Preceding Activity
A	Select platform and COTS (Commercial of the shelf) software	3	-
B	Design for upgrading office network	3	A
C	Additional models design/ development	6	B
D	Model and structure database	4	B
E	Integrate hardware/components	4	C, D
F	System testing	5	E
G	System deployment	2	F
H	System tuning and hardening	4	F
I	Training material Finalization	3	F
J	Technical and end user Training	6	I

   a) Prepare activity network diagram.
   b) List the critical activities
   c) If the project is starting from Baishakh 1, 2076, Prepare a complete schedule of the project activities, including the exact project completion date.

3. a) What are the phases in project life cycle? How does project life cycle differ from product life cycle? [2+3]
   b) Why reporting system is required in a project? Explain the hazards of communication error in a project. [2+3]

4. What is EVM? Suppose you have a project to be completed in 12 months and the budget of the project is Rs 10 lac. Six months have passed and 6 lac has been spent, but on closer review you find that only 40% of the work has been completed so far.
   Find the SPI and CPI deduce whether the project is behind or ahead of schedule. [1+2+2+1]

5. Why risk management is important in project management? What are the quantitative risk analysis processes? Write a brief note. [3+4]

6. What is TQM? Are there quality standards for software industry and services? Relate with other types of standards too. [2+5]

7. Compare the followings: [4×4]
   a) Project scoping vs. project closing
   b) Formal vs. Informal communication
   c) Sensitivity analysis vs SWOT analysis
   d) Tender vs. quotation process

8. Write short notes: [3×4]
   a) Balance scorecard framework
   b) Future trend of ICT Project
   c) Outsourcing and off-shoring options   6 3
   d) ICT Code of Ethics

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Subject: - Project Management *(CT 701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt *All* questions.
✓ The figures in the margin indicate *Full Marks*.
✓ *Necessary tables are attached herewith.*
✓ Assume suitable data if necessary.

1. a) What is PMBOK? How the external environmental influences on ICT project? [2+3]
   b) Define the project portfolio management and what are the key benefits of project portfolio management? [2+3]

2. Considering the following activity detail table having all the times in week answer the followings with calculation steps:

Activity	Optimistic Time	Most Likely Time	Pessimistic Time	Preceding Activity
A	3	6	9	-
B	6	12	24	-
C	6	9	18	A
D	3	6	21	B
E	9	12	21	D
F	3	6	18	C
G	6	12	24	E
H	9	18	27	F, G

   a) Draw the activity network diagram with identification of the critical path.
   b) Calculate the expected project completion time in weeks.
   c) What will be the probability for completion of the project within (i) 48 weeks and (ii) one year of the start date? [5+3+4]

3. What do you mean by project development life cycle? Explain describing various part, phase, stage and activities of the project development life cycle. [10]

4. Why the cost estimation for software project is a bit complex? Explain the EVM technique for the cost control and monitoring. Illustrate an EVA graph with your own values. [3+5+2]

5. Compare the followings: [4×4]
   a) BOQ document vs. RFP document
   b) Status reporting vs. progress reporting
   c) Functional vs. matrix organization
   d) Boxplot vs. histogram analysis

6. a) Discuss the basic approach used for Total Quality Management and how to improve Quality management in ICT project? [3+2]
   b) Define project integration management and compare project scope with product scope. [2+3]

7. Write short notes: [3×4]
   a) SWOT Analysis
   b) Balanced Scorecard
   c) Risk Register
   d) Custom processes for IT Projects

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TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2075 Ashwin

Exam.		Back	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) What are the triple constraints of project? How is project different from operational work? [3+2]

   b) What are the essential managerial skill and soft skill to be a successful Project Manager? [3+2]

2. a) Write the concept of project management process groups. How is it related to project management knowledge areas? [3+2]

   b) Define PMI framework. What are the key benefits of project portfolio management? [2+3]

3. a) What is PMBOK? And how the external environmental influence on ICT project? [2+3]

   b) Define the Project Integration Management and what is the essential information required to create Project Charter? [2+3]

4. a) What is system view of project management? Explain about three sphere model of system management. [2+3]

   b) Define organization structure. What are the different organizational structures and which type of structure do you fell is the most effective in ICT project? [1+4]

5. Construct a network diagram for this project and explain what is meant by critical path? [1+2+2+1]

   i) Calculate the forward pass and backward pass
   ii) Calculate the total float on each activity

Activities	Predecessor	Duration (Days)
START	-	0
A	START	3
B	START	5
C	A,B	7
D	C	2
E	B	4
END	D,E	0

6. Suppose you have IT project, which might look after project planning: [2.5+2.5+1]

Task ID	Name	Start	End	Budget
101	Setup Database	Step 1	Sept 10	Rs. 1,00,000/-
102	Build Application	Step 7	Sept 20	Rs. 1,50,000/-

   Let's assume, project has started on Sep 3rd determine that the first task is 20% complete and second task is 10% complete and Budget at completion (BAC) is Rs 2,50,000/- and after reviewing your time and expenses software and compiling any miscellaneous expenses, we determine that actual cost of the first task is Rs. 45,000/- and second task of Actual cost Rs. 20,000/-. Find the SV and CV of the project. Is the project is over budget or under budget?

7. a) Quality is one of the most important factors to be considered for effective delivery of project objectives. How quality assurance and quality control are implemented in order to deliver a successful project? [5]

   b) Why documentation and reporting system is required in a project? Explain the hazards of communication error in project? [2+3]

8. a) Why risk response planning is important in project? What are the response strategies for negative risk? [2+3]

   b) What do you mean by Project Procurement Management? Explain the different process adopted for procurement in ICT project? [1+4]

9. Write short notes on: (any four) [2×4]

   i)   Balance Scorecard
   ii) SWOT Analysis
   iii) Contract Closure Procedure
   iv) Delphi Technique
   v)   ICT Code of Ethics

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TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2074 Chaitra

Exam.		Regular	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) What do you mean by Project Development Lift Cycle? Explain various phases of the project development lift cycle. [5]

   b) What are the triple constraints of project? What makes a project different from operational work? [3+2]

2. a) What are the essential interpersonal and managerial skills to be a successful project manager? [2+3]

   b) "The Project Management Institute's Framework provides a basic structure for understand project management." Justify the statement. [5]

3. The clothing manufacturer, Neplai Luga, is considering introduction a line of cargo pants made entirely from hemp. The project costs NRs. 4.6 million and will generate cash flows of NRs. 1 million for 5 years. What is the payback period? If the interest rate is 0.3% per month, what is the project's NPV? Should the project be accepted? Why or why not? [10]

4. a) Consider the following project and answer the followings: [2.5×4]

   i) Construct a network diagram
   ii) Calculate the forward pass and backward pass
   iii) Indentify the critical path

   b) Calculate the total float on each activity.

Activities	Predecessor	Durations (Days)
A	-	11
B	-	15
C	A	5
D	A,B	10
E	B	5
F	C,D	2
G	E,F	7

5. a) A project manager is having trouble getting a project member to complete their tasks as assigned. What type of communication would the project manager want to use to address this problem initially and why? [5]

   b) What is PMBOK? And how the external environmental influences on ICT project? [2+3]

6. a) Why risk response planning is important in project? What are the response strategies for negative risk? [2+3]

b) What is EVM? Suppose you are three month into a six month project. Assume that the budget burn rate is constant and the Budget at Completion (BAC) is Rs 1,20,000/- and Actual cost is Rs 65,000/- and Schedule Performance Index is 1.2. Find the CPI of the project and Estimate at Completion (EAC). Is the project is over budget or under budget? [1+2+1+1]

7. a) What do you mean by Project Procurement Management? Explain the different process adopted for procurement in ICT project? [1+4]

b) How Pareto charts help to achieve better quality project? [5]

8. Write short notes on: [2.5×4]

i) Balance Scorecard
ii) COCOMO for IT project
iii) Break-even Point
iv) Cause and effect diagram

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Exam.		Back	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) What is the project? Explain the triple constraints of project with figure and describe their relationship. [1+4]

   b) What are the managerial skills and essential soft skills to be a successful project manager? [2+3]

2. a) What are the key benefits of project portfolio management? Explain the characteristics of project life cycle with diagram. [2+3]

   b) Define PM context as per PMI. Explain the role and responsibility of key project member. [1+4]

3. a) What are the major causes of failure of the ICT project? Explain how organizational structures influence projects? [2+3]

   b) What is system view of project management? Explain about three sphere model of system management. [2+3]

4. Draw the network diagram and find the critical path using data below. Calculate the forward pass and backward pass and find the total float time. [2+2+2]

Activities	Predecessor	Durations (days)
START	-	0
A	START	5
B	A	6
C	START	4
D	C	5
E	B	7
F	E	3
END	D, F	0

5. What is EVM? The project has been planned that total estimated cost of project is Rs 5 Lakhs and there are 20 widgets to complete in 10 months duration. At 5th months, it reported that project was completed 40% and it has been spent Rs. 3 Lakhs only. Now calculate Cost Variance and Schedule Variance. Is the project is behind the schedule or ahead schedule? [1+2+2+1]

6. a) Define project integration management. What type of information should include while making the project charter? [2+3]

   b) Quality is one of the most important factors to be controlled for effective delivery of project objectives. How quality assurance and quality control are implemented in order to deliver a successful project? [5]

7. a) Why communication management is important in IT project? How to run the effective meeting in project?

   [3+2]

   b) Risk management is an essential part of project management. Describe the risk identification techniques in IT project.

   [5]

8. a) What do you mean by Project Procurement Management? Explain the different process adopted for procurement in ICT project?

   [1+4]

   b) Why reporting system and documentation are required in a project? Explain the hazard of communication errors in a project.

   [2+3]

9. Write short notes on: (Any two)

   [2×4]

   a) Balanced scorecard
   b) Contract closure procedure
   c) Out sourcing and off-shoring options
   d) ICT code of ethics

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TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2073 Shrawan

Exam.	New Back (2066 & Later Batch)		
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) What is PMBOK? What are the knowledge contents that falls under PMBOK? [1+4]

   b) What are the key benefits of project portfolio management? Explain the characteristics of project life cycle with diagram. [2+3]

2. a) How can IT projects be classified? Write about the challenges of IT projects. [2+2]

   b) Explain the key elements of project proposal. [5]

3. Produce a critical path network diagram, showing the earliest start times and latest start times for each task, using the data in the table below. Calculate the total project time and total network slack time. [5+3+2]

Task code	Task name	Duration	Starts after completion of task(s)
PLAN	Plan project	3	
REQ	Capture requirements	8	PLAN
AGREE	Agree requirements with customer	2	REQ
DESIGN	Design system	10	AGREE
CODE	Code system	12	DESIGN
ID	Identify subcontractors	3	DESIGN
BUY	Buy-in subcontractor code	5	ID
INTEG	Integrate code and buy-in code	6	CODE, BUY
TRAIN	Train staff	5	DESIGN
REL	Release system	4	INTEG, TRAIN

4. a) What are the key features in change control on IT projects? Explain about input, tools and techniques and output of integrated change control. [3+3]

   b) What is project scope management? And compare Project scope with product Scope. [2+2]

5. Risk Management is an essential part of project management. Describe three typical risks that can occur in a software project and for each of these risks suggest two possible countermeasures. [8]

6. What is earned value analysis? A project is scheduled for the time of 12 months. The estimated cost of project is $400000. After 3 months, evaluation is done and it is identified that 40% of work is accomplished but $200000 cost has been incurred. Now calculate cost and schedule variance for the project. [2+6]

7. What are tools and techniques for Total Quality Management? And write possible steps to improve quality IT project. [4+3]

8. Compare the following: [3×3]

   i) Traceability vs. Adaptability in reviewing steps
   ii) Horizontal vs. vertical communication and their degree of formalness
   iii) Control charts vs. Cause and effect charts for quality assessment

9. Write short notes on: [3×3]

   i) Balanced Scorecard
   ii) SWOT Analysis
   iii) Contract Closure Procedure

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Exam.		Regular	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) What is project? Explain the triple constraints of project with figure. [2+3]

   b) What are the essential interpersonal and managerial skills to be a successful project manager? [5]

2. What are the major causes of failure of the ICT project? Describe what bodies of knowledge are required by a PM to contribute for a successful project implementation. [3+4]

3. Consider the below table as the different WBS related job (activity) and sequences as per the project plan for a MIS building project. Times listed are in weeks and the activity network proceeds from 1st node to 10th node following the table sequences. Draw the critical path network diagram and calculate the total project time and total network slack time of this project. [5+3+3]

Job (activity)	Initial node	Final node	Estimated Time
A	1	2	3
B	1	3	2
C	1	4	3
D	2	5	3
E	2	9	2
F	3	5	2
G	3	6	2
H	3	7	3
I	4	7	6
J	4	8	2
K	5	6	3
L	6	9	3
M	7	9	5
N	8	9	3
O	9	10	2

DeMarco states that "you cannot control what you cannot measure". Considering from software project manager's perspective, justify with relevant example?

4. A project manager can modify three basic elements of a software project: the resources available, the time available and the amount of product to be built. Describe how each of these three can be varied during a development process in order to ensure the resulting software is of high quality. [6]

5. Explain about the integrated change control in detail. [6]

6. Suppose you are managing a software development project. The project is expected to be completed in 8 months at a cost of Rs.50,000/- per month. After 2 months, you realize that the project is 30 percent completed at a cost of Rs 200,000/-. Determine whether the project is on-time and on-budget after 2 months. Calculate Cost and Schedule Performance Index. [8]

7. What is difference between communication skills and communication management? How does the communication skill help to resolve conflicts in ICT project? Explain with example. [2+4]

8. Quality is one of the most important factors to be controlled for effective delivery of project objectives. How quality assurance and quality control are implemented in order to deliver a successful project? Describe. [8]

9. Compare the followings: [3×3]

   i) Decision Tree vs. Tornado Analysis for risk management
   ii) Quotation based purchase vs. Tender based purchase for procurement process
   iii) Consistency vs. completeness in requirements engineering

10. Write short notes on: [3×3]

   i) Balanced scorecard framework
   ii) Project management maturity model
   iii) Responsibility assignment matrix

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Exam.		Regular	
Level	BE	**Full Marks**	80
Programme	BEX, BCT	**Pass Marks**	32
Year / Part	IV / I	**Time**	3 hrs.

Subject: - Project Management *(CT701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. a) List out the characteristics of a project. Explain the role of effective feasibility study for the successful completion of a project. [2+2]

   b) What is the role of project manager? What are suggested skills for all project managers and for information technology project managers? [5]

2. a) What is project management institute (PMI)? How is it related to project management? Discuss PMI framework in relation with project management. [4]

   b) Explain with example the concept of drivers of project success and inhibitors of project success. [2+3]

3. a) Discuss the concept of project management process groups (PGs). How is it related to project management knowledge area? Give the example of two processes with necessary inputs, tools and techniques and outputs. [4]

   b) Define work break down structure and its importance in project management. What are different ways/approaches to prepare a work breakdown structure for a project? [5]

4. a) What do you understand by Quality planning, Quality Assurance and Quality Control? Explain different approaches to these processes. [4]

   b) Why better communication management is critical for projects? Discuss the communication management plan that should be considered for ICT projects. [5]

5. a) Explain the integrated change control process in depth. [4]

   b) Define WBS technique in scope management. [3]

6. Being an IT project manager how are you going to manage an IT based project that demands regular updates with new trends in market. [5]

7. Consider you are hired as a consultant in a IT college where every year 50 students are admitted in 4 year program. You are asked to prepare a tender. Specification document for setting up a digital library to be set-up on that college. State your all assumptions that you will be making while preparing the document. [6]

8. If schedule performance index (SPI) is 0.75 in a mega project undergoing near Devikapur district with earned value of being 60. Now calculate the planned value and also state whether the project is ahead schedule or behind schedule. [6]

9. Write short notes on: (any five) [4×5]

   a) Balanced Scorecard
   b) Tornado analysis
   c) Critical path analysis
   d) Decision tree analysis
   e) Trends in cloud computing
   f) Outsourcing and off-shoring options

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Exam.	**New Back (2066 & Later Batch)**		
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management (CT701)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. What is a project? List out its characteristics. [2+2]

2. What are different skill sets required by a project manager? Briefly explain each of them. [5]

3. Define project management body knowledge. [2]

4. Explain about Project Management Institute Framework. [4]

5. What are the phases in project life cycle? How does a project life cycle differ from a product life cycle? [5]

6. Explain a Matrix Organization Structure with it's advantages and disadvantages. [4]

7. Discuss the concept of project management process groups (PGs). List down two processes of project management process group with their inputs, tools and techniques and output. [4]

8. Explain about Integrated Change Control in IT project development. [5]

9. Why is it important to determine activity sequencing on projects? What are different diagrams/methods that can be used to sequence activities in the project? [5]

10. Given the following information for one-year project, use Earned Value Management (EVM) method to calculate, cost variance, schedule variance, cost performance index (CPI) and Schedule performance index (SPI) for the project. [6]
    Planned Value = NPR 23,000
    Earned Value = NPR 20,000
    Actual Cost = NPR 25,000
    Budget at Completion = NPR 1,20,000

11. What is a Maturity Model for software development? Explain them. [5]

12. Explain about the necessity of information distribution and its tools and techniques. [5]

13. What are different tools and techniques for risk identification? Discuss brainstorming and Delphi Technique for risk management. [4]

14. What is a procurement process? How is it performed in a project? [1+4]

15. Discuss about IT project management methodology. [5]

16. Write short note on: [2×6]
    a) Project stakeholders
    b) Project management information system
    c) Critical Chain Scheduling
    d) Categories of Risk
    e) Balanced Score Card
    f) Constructive Cost Model (COCOMO)

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Exam.	New Back (2066 & Later Batch)		
Level	BE	Full Marks	80
Programme	BCE, BEL, B.Agri.	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Engineering (CE701)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. Differentiate between Bilateral, Multilateral and Joint Venture project with example? Discuss the external environment in which a project is operated. [4+6]

2. Define concept of project appraisal. Explain about contents of technical and financial proposal. Also explain input analysis of project formulation. [2+7+3]

3. a) Construct the CPM network for a project with following activities: [16]

Activities	A	B	C	D	E	F	G	H	I	J
Predecessor	-	-	A,B	B	A	C	E,F	D,F	G,H	I
Days	4	7	4	3	2	1	6	5	8	9

Find:

i) Critical path
ii) Project completion time
iii) EST, EFT, LST, LFT, Total float, Free float (F_F), independent float (I_dF) and Interferring float (If)

b) Define the terms resource histogram, resource levelling limited resource allocation and work break structure. [2+2+2+2]

4. a) Write the concept of Monitoring, Evaluation and Controlling and also explain project control cycle. [3+4]

b) Why cost control is important in project? 15 houses were to be completed in three months with per unit cost of Rs 25,00,000/-. In one month 4 houses were completed with total expenditure of Rs 96,00,000/- use earn value analysis to find the status of the project. [3+4]

5. Define 'risk'. Explain various sources of project risk. Elaborate risk response planning. [1+5+4]

6. Define the term project financing. Explain features of capital structure planning. A project has total capital of Rs 5,00,000 which consists of 2000 shares @ Rs 100, 1,50,000 preference share 18% interest and remaining loan @ 14% interest. Earning before interest and tax in a year is Rs 1,00,000. Calculate EPS and book value of share if tax rate is 25%. [2+4+4]

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Subject: - Project Management (CT701)

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1. a) Explain the triple constraints of Project with figure and describe their relationship? [2+2]
   b) What are the essential interpersonal and managerial skill to be a successful project manager? [5]

2. a) Explain the Project Management Institute's (PMI) framework. [4]
   b) What is PMBOK? What are the knowledge contents that falls under PMBOK? [1+4]
   c) Explain various types of matrix organization. [4]

3. Compare project management with project portfolio management. Explain the characteristics of simple generic life cycle with necessary diagrams. [1+4]

4. What is Earned Value Management (EVM)? Derive the formulas that are used in schedule and cost performance, explain their significances. [1+3+3]

5. A big software project is under consideration for development. Overall 10 different activities as WBS are identified as listed below table with their timings in number of weeks:

Activities	a	m	b
(1,2)	7	11	13
(2,3)	1	4	7
(2,4)	10	15	48
(3,5)	12	20	26
(3,6)	4	7	16
(3,7)	4	7	16
(6,7)	5	8	11
(4,7)	2	8	14
(7,8)	9	12	15
(8,9)	1	4	7

Where
   a = Opstimistic time
   b = Pessimistic time
   m = most likely time

Calculate the following:
   a) What is the expected time of completion of the project? [3]
   b) What is the probability of completing the project in 34 weeks? [3]
   c) What is the probability of the activity 7 being completed in the twentieth week? [3]

6. Explain different types of Risk and illustrate the Risk management model with block diagram according to PMI. Project Risk Management process. [7]

7. Define project integration management. Explain the necessary inputs, tools and techniques and outputs to develop a project charter. [1+4]

8. Does effective communication management skill reduce the associated risk of an IT project? Explain with example. [4]

9. What makes the project procurement process of very crucial component in project management? What are typical issues to be considered in e-bidding as a procurement processing tool? [2+4]

10. Write short notes on: [3×5]
    a) COCOMO (constructive cost model) for IT project
    b) Contract closure procedure
    c) Balanced scorecard framework
    d) Pare to analysis
    e) Quality Audit Plan.

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TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2071 Chaitra

Exam.		Regular	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management (CT701)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt All questions.
✓ The figures in the margin indicate Full Marks.
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1. a) Briefly explain the traits of being an effective and ineffective project manager? [2+2]

   b) Explain the necessity of IT Project Management? How do you perform feasibility study in IT project? [2+2]

2. a) Explain about knowledge areas of PMI framework. [4]

   b) Describe project management? Explain the roles and responsibilities of key project members. [2+2]

3. What is a project charter? How do you develop a project charter, explain the inputs and tools and techniques to develop it. [2+5]

4. A project work consists of the following activities as listed below in table. [9]

Activity	Description	Duration in days
A (1-2)	Start earth work	3
B (1-4)	Vendor selection	2
C (1-7)	Start handling	1
D (2-3)	Continue earth work	3
E (3-6)	Finish earth work	2
F (4-5)	Ordering raw material	4
G (4-8)	Excavation for drains	6
H (5-6)	Receiving raw material	5
I (6-9)	Base concreting	4
J (7-8)	Continue handing	4
K (8-9)	Laying drains	5

Draw the network diagram and trace the critical path of the network. What are the various timings and the total duration of the above project?

5. What do you mean by Project Procurement management and what are the different processes adopted for procurement? [5]

6. Explain various tools and techniques for performance reporting. [5]

7. If earned value is twice its actual cost for a project, calculate its cost performance index and cost variance percentage. Is the project over/under budget? [6]

8. a) Is there always a tradeoff between quality and productivity? Explain with an IT related example. [3]

   b) What are the possible steps to improve project quality? [4]

9. What are the essential components of project scope management? Explain. [5]

10. Write short notes on: [5×4]
    a) Sensitivity analysis
    b) The Balanced Scorecard
    c) Six sigma
    d) Project Management Maturity
    e) Decision tree analysis

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Exam.		Regular	
Level	BE	Full Marks	80
Programme	BEX, BCT	Pass Marks	32
Year / Part	IV / I	Time	3 hrs.

Subject: - Project Management *(CT701)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **_All_** questions.
✓ The figures in the margin indicate **_Full Marks_**.
✓ Assume suitable data if necessary.

1. What is a project, and what are its main attributes? How is a project different from what most people do in their day-to-clay jobs? Discuss the specific attributes that are specific to IT related projects. [4]

2. What is a Project Management Body of knowledge? Explain different general management skills necessary to be a good project manager. [2+5]

3. What does it mean by the term "project management practice"? Discuss project management framework as per the standard of Project Management Institute (PMI) along with the concept. [5]

4. What is a Software Development Life Cycle (SDLC)? Explain any one of its kind that you prefer in developing an IT project. Why? [2+5]

5. Most of the project follows functional organizational structure. If you agree, justify. [4]

6. Discuss about Project Management Process Groups. [4]

7. Discuss the process of defining project scope in more detail as a project progresses, going from information in a project charter to a project scope statement, WBS and WBS dictionary. [5]

8. Why is there necessity of Project Time management? Explain how is that performed. [1+4]

9. What is a cost estimating? Explain different tools and techniques used for cost estimating. [1+4]

10. What do you understand by Quality in the context of project management? Discuss quality control process and its major outputs. [5]

11. Why better communication is critical for ICT projects? Discuss the contents of communication management plan that should be considered. [5]

12. What is a Project Risk Management? Explain the processes involved briefly. [5]

13. Why are organization moving towards the trend of outsourcing? Discuss the challenges of outsourcing. [5]

14. What are the roles of award and assessment in achieving Excellency in project completion, Briefly explain. [5]

15. Write short notes on: [3×3]
    a) Expert Judgement
    b) Arrow Diagramming Method
    c) Balance score card

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