

SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Information Technology

Second Year, First Semester Examination ~ 2018

HNDIT2302 IT Project Management ~ Model Answer

Instructions for Candidates:

No. of questions : 05

Answer any 04 Questions

No. of pages : 03

All questions carry equal marks.

Time : Two (02) hours

Only non-programmable calculators are allowed.

Q1)

- i. Define the term **Project Management**. (03 Marks)

Answer points

Project management is "the application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements".

- ii. Name FOUR criteria by which a project can be judged as a success project. (04 Marks)

Answer points (1*4 Marks)

- Completed to schedule
- Completed within budget
- Meeting all requirements (or perhaps fulfilling the business case)
- Providing proven or adequate quality

- iii. Project management can be viewed as a number of interlinked processes. Name those five processes. (05 Marks)

Answer points (1*5 Marks)

- Project initiation
- Project planning
- Project execution
- Project monitoring and control
- Project closure

iv. List five (05) advantages of using formal Project Management. (05 Marks)
Answer points (1*5 Marks)

- Better control of financial, physical, and human resources
- Improved customer relations
- Shorter development times
- Lower costs
- Higher quality and increased reliability
- Higher profit margins
- Improved productivity
- Better internal coordination
- Higher worker morale

v. IT project managers are expected to possess certain skills. Describe **four** skills of good IT project managers. (08 Marks)

Answer points 2*4 Marks

Brief description on:

- Project Management skills
- People skill
- Knowledge of organization
- Integration skill
- Technical skill

[Total 25 Marks]

Q2)

i. What is Project Human Resource Management? (03 Marks)

Answer points

Project human resource management includes the processes required to make the most effective use of the people involved with a project. Processes include

- a. Organizational planning
- b. Staff acquisition
- c. Team development

ii. "Good project integration management is the key to overall project success". Explain the validity of this statement. (04 Marks)

Answer points (2*2 Marks)

- Coordinating all of the people, plans, and work required to complete a project
- Focus on the big picture of the project and steer the project team toward successful completion
- Make final decision when there are conflicts among project goals or people involved
- Communicate key project information to top management

iii. There is usually not enough time or resources to implement all available projects. What are the suitable methods to select a project? (05 Marks)

Answer points

Methods for selecting projects include:[1*5 Marks]

- Focusing on broad organizational needs.
- Categorizing information technology projects.
- Performing net present value or other financial analyses.
- Using a weighted scoring model.
- Implementing a balanced scorecard.

iv. C&N Company is considering two mutually exclusive projects, project A and project B. The cash flows for each would be as follow. All figures are given in Sri Lankan Rupees.

Year	Discount factor	Project A	Project B
0	1.000	(10,900)	(35,250)
1	0.862	6,000	18,000
2	0.743	5,000	15,000
3	0.641	3,000	15,000

The company's cost of capital is 16%.

a. Calculate the Net Present Value of each project. (06 Marks)

Answer points

For calculating present value (0.5* 8 → 4 Marks)

For calculating NPV (1* 2 → 2 Marks)

Year	Discount factor	Project A	Project B	Project A-Discounted cash flow	Project B-Discounted cash flow
0	1	-10,900	-35,250	-10,900	-35,250
1	0.862	6,000	18,000	5,172	15,516
2	0.743	5,000	15,000	3,715	11,145
3	0.641	3,000	15,000	1,923	9,615
			NPV	-90	1026

b. Give your recommendation and reasons as to which project should be accepted.

(04 Marks)

Answer points

Project B is viable. (02 Marks)

Because it has the highest positive NPV. (02 Marks)

v. List two advantages of the Discount Factor (DCF) method of project appraisal over other appraisal methods. (03 Marks)

Answer points

- It takes account of the time value of the money.
- It uses all cash flows relating to a project.
- It allows for the timing of cash flows.

[Total 25 Marks]

Q3)

i. Explain the term Work Breakdown Structure (WBS) and give two approaches to Develop WBS. (03 Marks)

Answer points

WBS - 1 Mark

A **WBS** is a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project.

Approaches -1*2 Marks

- Analogy approach:
- Top-down approach:
- Bottom-up approach:
- Mind-mapping approach:

ii. SLIATE management has decided to buy in and install new software package to replace the existing in-house system to prepare examination results. Assume that you are the project manager and have drawn up an outline project plan for the main project activities, as follows:

Activity	Predecessor	Duration (weeks)
A	-	4
B	A	4
C	A	12
D	B	4
E	D	4
F	C	4
G	C,D	6
H	E,F,G	2

- a. Draw a network diagram for the project. (05 Marks)
- b. On the diagram, compute Early Start (ES), Early Finish (EF), Late Start (LS) and Late Finish (LF) time estimates and total float for each activity. (08 Marks)
- c. Find the critical path and project duration. (06 Marks)

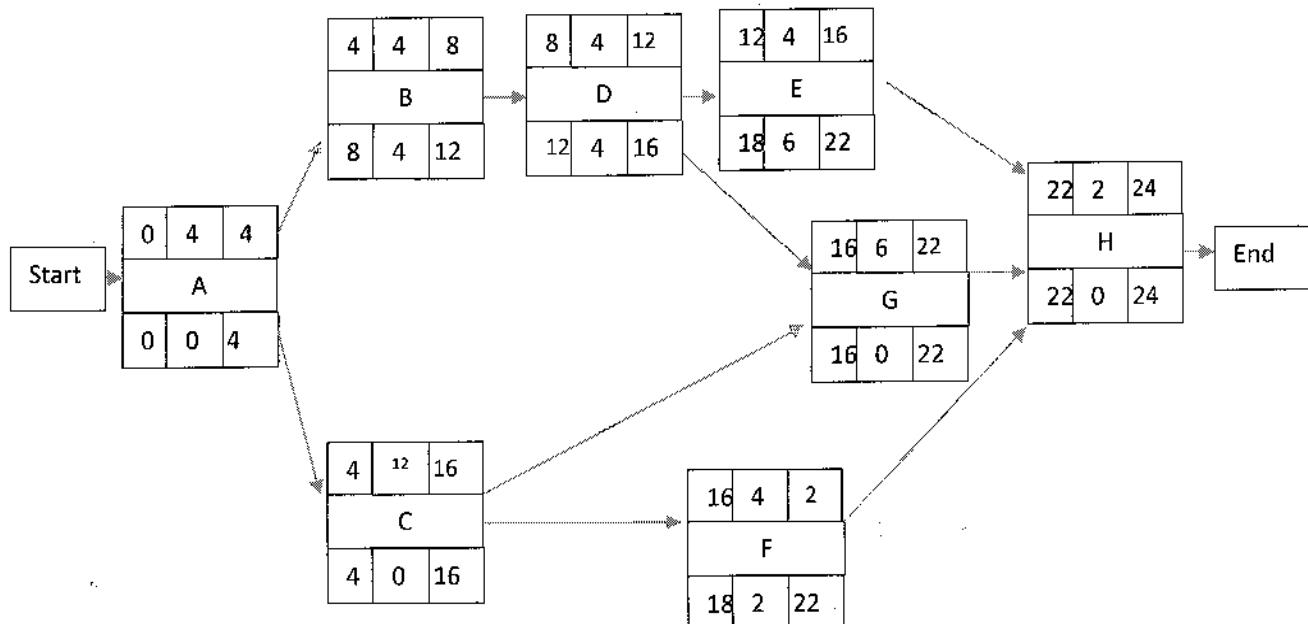
Model answer for question a, b and c.

Question a → 5 marks for drawing diagram by indicating activity label and duration

Question b → 1*8 → 8 marks for marking ES,EF, LS, LF and total float on the diagram correctly in the each node.

British Standard BS4335 is used here. Allocate marks for any correct notation of AOA or AON

ES	Duration	EF
Activity Label		
LS	Float	LF



$$A \rightarrow B \rightarrow D \rightarrow E \rightarrow H \quad 4+4+4+4+2 = 18 \text{ Weeks}$$

$$A \rightarrow B \rightarrow D \rightarrow G \rightarrow H \quad 4+4+4+6+2 = 20 \text{ Weeks} \quad 1 * 4 \text{ Marks}$$

$$A \rightarrow C \rightarrow G \rightarrow H \quad 4+12+6+2 = 24 \text{ Weeks}$$

$$A \rightarrow C \rightarrow F \rightarrow H \quad 4+12+4+2 = 22 \text{ Weeks}$$

$$\text{Critical path} = A \rightarrow C \rightarrow G \rightarrow H \quad 1 \text{ Mark}$$

$$\text{Project Duration} = 24 \text{ Weeks} \quad 1 \text{ Mark}$$

- iii. Write advantages of using an Activity on Node network diagram over an Activity-on-Arrow network diagram in project planning. (02 Marks)

Answer points

AON is better at showing different types of dependencies.

Consider any correct answer.

Q4)

[Total 25 Marks]

Your company has decided to develop a new information system.

- i. Define the term “stakeholder” in relation to an IT development project. (03 Marks)

Answer points

Project stakeholders -People involved in or affected by project activities. (02 marks)

Eg : IT project manager, programmers, system architects ,etc.(1 mark)

- ii. “Active user involvement is a key in satisfying user requirements”. Do you agree with this statements? Justify your answer. (04 Marks)

Answer points

Yes → 1 Mark

- iii. Describe the purpose of following documents in project management process.

a. Project charter

b. Project scope statement

(05 Marks)

Answer points (2.5 *2 Marks)

- a. **Project charter:** a document that formally recognizes the existence of a project and provides direction on the project's objectives and management. Key project stakeholders should sign a project charter to acknowledge agreement on the need and intent of the project

b. **Project scope statement:** a document used to develop and confirm a common understanding of the project scope. It should include a project justification, a brief description of the project's products, a summary of all project deliverables, a statement of what determines project success

iv. Suppose that a software project was estimated to be 400 000 line of codes. Calculate the effort and development time for organic mode using basic COCOMO equation.

Hint: Effort (E) = $a * (\text{size})^b$,

Development Time = $c * E^d$;

Where a, b, c and d equals to 2.4, 1.05, 2.5 and 0.38 (05 Marks)

Answer points.

Estimated size = 400 KLOC (01 Mark)

In organic mode,

Effort= $2.4 * 400^{1.05} = 1295.31$ PM (02 Marks)

Development time= $2.5 * 1295.31^{0.38} = 38.07$ M (02 Marks)

v. Briefly explain the typical problems of cost estimates in IT projects. (08 Marks)

Answer points (2*4 Marks for any valid point)

- Developing an estimate for a large software project is a complex task requiring a significant amount of effort. Also estimates are done at various stages of the project
- Many people doing estimates have little experience doing them. Try to provide training and mentoring
- People have a bias toward underestimation. Review estimates and ask important questions to make sure estimates are not biased
- Management wants a number for a bid, not a real estimate. Project managers must negotiate with project sponsors to create realistic cost estimates

[Total 25 Marks]

Q5)

- i. What is meant by **quality** in project management? (03 Marks)

Answer points

The degree to which a set of inherent characteristics fulfils requirements.

Or

- CONFORMANCE to stated CRITERIA agreed by the CUSTOMER or its representatives
- conformance to requirements: meeting written specifications
- fitness for use: ensuring a product can be used as it was intended

- ii. State the most significant characteristics of effective and ineffective project managers. Give two points per each. (04 Marks)

Answer points

Effective Project Managers (1*2 Marks)

- Lead by example
- Are visionaries
- Are technically competent
- Are decisive
- Are good communicators
- Are good motivators
- Stand up to upper management when necessary
- Support team members
- Encourage new ideas

Ineffective Project Managers (1*2 Marks)

- Set bad examples
- Are not self-assured
- Lack technical expertise
- Are poor communicators
- Are poor motivators

- iii. What are the differences between quality assurance and quality control (05 Marks)
Answer points (2.5* 2 Marks)

The differences between quality control and quality assurance are:

Quality Control	Quality assurance
Done within the project	Done external to it
Checks products/deliverables	Checks processes
Checks are done against unique criteria	Done against good practice

- iv. Briefly describe the impact of using modern software tools and techniques in project communications. (05 Marks)
Answer points

- v. Briefly explain the following terms.

- a. Project Risk Management
b. Project Procurement Management

(08 Marks)

Answer points (4*2 Marks)

- a. Project Risk Management (02 Marks)

Risk Management is the systematic process of identifying, analyzing, and responding to project risk.
The major processes in Project Risk Management:

(02 Marks)

- Risk Management Planning
- Risk Identification
- Qualitative Risk Analysis
- Quantitative Risk Analysis
- Risk Response Planning
- Risk Monitoring and Control

b. Project Procurement Management (02 Marks)

Project Procurement Management includes the processes required to Acquiring goods and services for a project from outside the performing organization.

The major processes in Project Procurement Management: (2 Marks)

Planning purchases and acquisitions

Planning contracting

Requesting seller responses

Selecting sellers

Administering the contract

Closing the contract

[Total 25 Marks]