MONASH University

2020 Nov12
Examination Period

Faculty of Information Technology

EXAM CODES:	FIT2002
TITLE OF PAPER:	Mock Exam 1
EXAM DURATION:	2 hours 10 mins

Rules

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Authorised Materials

OPEN BOOK	☐ YES	☑ NO	
CALCULATORS	☑ YES	☐ NO	Calculator
DICTIONARIES	☐ YES	☑ NO	
NOTES	☐ YES	☑ NO	
SPECIFICALLY PERMITTED ITEMS	☐ YES	☑ NO	

if yes, items permitted are:

Instructions

Answer all questions in this exam.
This exam contributes to 50% for the unit assessment
This exam consists of FOUR (4) parts:

- Part A: 20 multiple choice questions worth 1 mark each. Subtotal 20 marks
- Part B: 5 questions worth 2 marks each. Subtotal 10 marks
- Part C: Case Study with 3 sub-parts Subtotal 15 marks
- Part D: 4 questions with sub-parts Subtotal 35 marks

Total 80 marks

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Part A: Multiple Choice Questions

Information

PART A: (20 questions x 1 mark each = 20 marks)
There are 20 multiple choice questions. Attempt all questions.
Correct response score 1 mark, NO marks are deducted for incorrect response.

Question 1

Which of the following is true of projects?

1 Mark

Select one:

- a. They are permanent in nature.
- b. They are developed using regressive elaboration.
- c. They have an indefinite beginning and end.
- d. They have a unique purpose.

Question 2

Steve, an engineer in a construction company, is at present working on a home construction project. The home is being built for the Robinson's family, the owners of the home. Steve is working with his project team and support staff to ensure the project is completed on time. In such a scenario, the project sponsor is _____.

1 Mark

Select one:

- a. the project team
- b. Steve
- c. the support staff
- d. the Robinson family

Question 3

A preliminary or rough cost estimate is developed in the _____ phase of the project life cycle, and an overview of the work involved is created.

1 Mark

Select one:

- a. acquisition
- b. concept
- c. close-out
- d. implementation

Question 4

Which of the following is true of the agile approach to software development?

1 Mark

Select one:

- a. In the agile method, requirements and solutions evolve through collaboration.
- b. Agile is a predictive model of software development.
- c. An agile approach sets scope goals, but leaves time and cost goals flexible.
- d. In the agile approach, requirements must be clearly expressed early in the life cycle.

Question 5

Which one of the following statements is TRUE?

1 Mark

Select one:

- a. It is more expensive to make major changes to a project during the earlier phases.
- b. The WBS provides a basis for creating the project schedule and performing earned value management for measuring and forecasting project performance.
- c. The last phase of the traditional project life cycle is the implementation phase.
- d. A project manager's primary role is to provide the funding for a project.

Question 6

_____ involves identifying and controlling the functional and physical design characteristics of products and their support documentation, and ensures that the descriptions of the project's products are correct and complete.

1 Mark

Select one:

- a. Project time management
- b. NPV analysis
- c. Configuration management
- d. Project management information systems

Question 7

_____ involves building individual and group skills to enhance project performance.

1 Mark

Select one:

- a. Developing the human resource plan
- b. Developing the project team
- c. Acquiring the project team
- d. Managing the project team

Question 8

Which one of the following statements is TRUE?

1 Mark

Select one:

- a. The lower the earned monetary value calculation for a project, the higher the chances of project success.
- b. The tasks in a WBS must be developed as a sequential list of steps.
- c. According to the symbolic frame, the most important aspect of any event in an organization is not what actually happened, but what it means.
- d. Internal stakeholders include groups affected by the project such as government officials or concerned citizens.

Question 9

Which of the following types of dependencies are inherent in the nature of work being performed on a project?

1 Mark

Select one:

- a. Discretionary
- b. Mandatory
- c. External
- d. Random

Question 10

How many communication channel(s) do we need for a to a team of nine?

1 Mark

Select one:

- a. 1
- b. 9
- c. 10
- d. 36

Question 11

_____is the degree to which a system performs its intended function.

1 Mark

Select one:

- a. Reliability
- b. Validity
- c. Maintainability
- d. Functionality

Question 12

At the bottom of Maslow's structure are _____ needs.

1 Mark

Select one:

- a. esteem
- b. self-actualisation
- c. physiological
- d. social

Question 13

Projects must operate in a broad organizational environment, and project managers need to consider projects within the greater organizational context. _____ describes this holistic view of carrying out projects within the context of the organization.

1 Mark

Select one:

- a. Linear analysis
- b. Systems thinking
- c. Reductionism
- d. The silo approach

Question 14

The procurement statements of work are an output of the _____ process of project procurement management.

1 Mark

Select one:

- a. planning
- b. executing
- c. monitoring and controlling
- d. closing

Question 15

Which of the following is true of tangible costs?

1 Mark

Select one:

- a. They cannot be calculated in monetary terms.
- b. They can be easily measured.
- c. They are difficult to quantify.
- d. Their examples include goodwill and prestige.

Question 16

Which of the following processes in project time management involves identifying the specific tasks that the project team members and stakeholders must perform to produce the project deliverables?

1 Mark

Select one:

- a. Defining activities
- b. Sequencing activities
- c. Developing the schedule
- d. Estimating activity durations

Information

Question 17 – 20 refers to the following scenario:

You are given the following information of a project:
Initial Investment: 26,000
Cost of capital: 15%
The following table shows the cash flow for this project:

Year N	0	1	2	3	4
Costs	26,000	14,000	8,000	5,000	4,000
Benefits		10,000	20,000	30,000	20,000

49798

54979

Discounted Cash Flows Formulas:

Present Value (PV): $PV = \frac{FV}{(1+i)^n}$

Future Value (FV): $FV = PV(1 + i)^n$

Net Present Value (NPV): $NPV = \sum_{t=0...n} CF/ (1+i)^t$

ROI = (Discounted benefits – Discounted costs)/Discounted costs = NPV/Discounted costs

Question 17

What is the total discounted benefits for the above-mentioned project?

1 Mark

Select one:

- a. $11,400
- b. $34,980
- c. $55,100
- d. $80,000

Question 18

What is the total discounted costs for the above-mentioned project?

1 Mark

Select one:

- a. $2,280
- b. $6,996
- c. $49,840
- d. $57,000

Question 19

What is the NPV (Net Present Value) for the above-mentioned project?

1 Mark

Select one:

- a. $5,260
- b. $9,120
- c. $23,000
- d. $27,984

Question 20

What is the ROI (Return on Investment) for the above-mentioned project?

1 Mark

Select one:

- a. 0.11%
- b. 0.4%
- c. 4%
- d. 11%

Part B: Short Essay Questions

Information

PART B (10 marks)
This section consists of five (5) short answer questions worth 2 marks each.
Answer all questions.

Question 21

Briefly describe the process of initiating a project.

2 Marks

Question 22

What is design of experiments? When is it used?

2 Marks

Question 23

Briefly describe two (2) types of cost estimates.

2 Marks

Question 24

What is involve when developing the schedule and what is a schedule baseline?

2 Marks

Question 25

Would you use a Gantt Chart in Agile Project Management? Why/Why not?

2 Marks

Part C: Case Study

Information

PART C (4 + 6 + 5 = 15 marks)

This part consists of three (3) sub-questions worth 15 marks in total.

Answer all questions.

Question 26

Case Study

15 Marks

Recently, several banks have started offering customers remote deposit capture. With this new service, customers do not have to physically go to banks or ATM machines to deposit checks anymore. Instead, they can send checks as a scanned image through an Internet portal provided by the bank. This technology can save banks and customers time and money making the transactions. Blue Bank is considering implementing this new service. To use it, customers need a remote capture account with Blue Bank and a special scanner to get the necessary images to make the electronic deposit. Once the account is established in the system, customers will be able to scan all of their checks anytime and anywhere by accessing the Blue Bank service through the Internet, logging in, and scanning the checks. The service should be as easy as sending an attachment in an email. Of course, this new application has to be very reliable, secure, and easy to use. It must be integrated into the current Blue Bank Website, and the Website must also provide the ability for customers to purchase the special scanner. Blue Bank will set up the scanner-purchasing ability with several appropriate hardware vendors and sell the devices at its physical banks as well. Blue Bank is not sure yet what to charge for the scanners or service. The Website will also provide online technical support and instructions showing customers how to set up and use the new scanner and service. Support will be provided 24/7 via the Website and telephone.

a) Based on the case study, briefly describe one requirement for each of the category listed below: (4 marks)

Technical Requirement	
Performance Requirement	
Security Requirement	
Business Requirement	

b) Identify three (3) distinct potential risks for the project based on the category given. State briefly what would be the trigger and how will the risk impact the success of the project. Briefly discuss a response strategy for each risk. (6 marks)

1. Name of Risk:_____

Description:_____

Category: Technology_____

Trigger: _____

Impact:_____

Response Strategy: _____

_____

2. Name of Risk:_____

Description:_____

Category: Business/Marketing_____

Trigger: _____

Impact:_____

Response Strategy:_____

_____

3. Name of Risk:_____

Description:_____

Category: People (Human resource)_____

Trigger: _____

Impact:_____

Response Strategy:_____

c) Briefly describe the four basic response strategies for positive risks? In your opinion, what response strategy should the bank adopt if there is a good uptake of this new technology. (5 marks)

Part D: Calculation

Information

PART D (8+ 8 + 4 + 15 = 35 marks)
This section consists of four (4) questions worth 35 marks in total.
Answer all questions.

Question 27

Earned Value Management (8 marks)

8 Marks

Assume a 6 months software project is budgeted for $40,000. At the end of the 4th month, the project was evaluated and it was estimated that only 50% of the work was actually completed. At this point, they have already spent $22,000.

Earned Value Formulas:

Actual Cost = AC
Planned Value = PV
Earned value = EV
Cost Variance (CV): CV = EV - AC
Cost Performance Index (CPI): CPI = EV/AC
Schedule Variance (SV): SV = EV – PV
Schedule Performance Index (SPI): SPI = EV/PV
Budget at Completion = BAC
Estimate to Complete (ETC): ETC = (BAC- EV)/CPI
Estimate at Completion (EAC): EAC = AC + ETC

a) Calculate the Cost Variance, Schedule Variance, Cost Performance Index and Schedule Performance Index for this project as at the end of the 4th month. (4 marks)

b) Based on the performance to date, what would be the total estimated cost to complete this project (assuming there are no further delays after the 4th month). (1 mark)

c) Based on your calculation in a) and b), discuss the situation and your recommendation. (3 marks)

Question 28

Project Network Diagram (8 marks)

8 Marks

A project consists of activities A, B, C, D, E, and F.

Activity	Estimated Duration (days)	Predecessor
A	5	Start any time
B	10	Start any time
C	7	Start after A has ended End after D has ended
D	4	Start after B has ended
E	3	Start after B has ended
F	4	Start after C has ended

The project has finished when activities E and F have finished.

Using the above information:

- Draw a project network diagram using the activity on node method.
- Include all calculations (estimated time and floats for each activity) on the project network.
- Highlight the critical path.
- Indicate what is the shortest possible time needed to complete this project.

NOTE: Please clearly label the piece of paper with your Student ID and this question number (Question 28) and draw your network diagram on this blank piece of paper. You'll have time at the end of your exam to upload a photograph of your answer.

Please answer question on your blank piece of paper.

- After your exam finishes, you'll have **extra time** to access your phone to scan a **QR code** and **upload** your answer.
- Clearly label each page with **Student ID** and **this question number** (and **sub part** if applicable) (for example, 'Question 7a')
- **Do not** write your Name on it

No. of answer sheets: 1

Question 29

4 Marks

Answer the following questions based on the project network diagram that you draw in Question 28.

a) What is the effect on Activity E and the project duration if Activity B is delayed by 2 days? Why? (1 mark)

b) What is the effect on the project duration if activity A is delayed by 2 days? Why? (1 mark)

c) What is the importance of correct scheduling? Discuss why you would use the Activity-on-Arrow and when you would use the Activity-on-Node techniques. (2 marks)

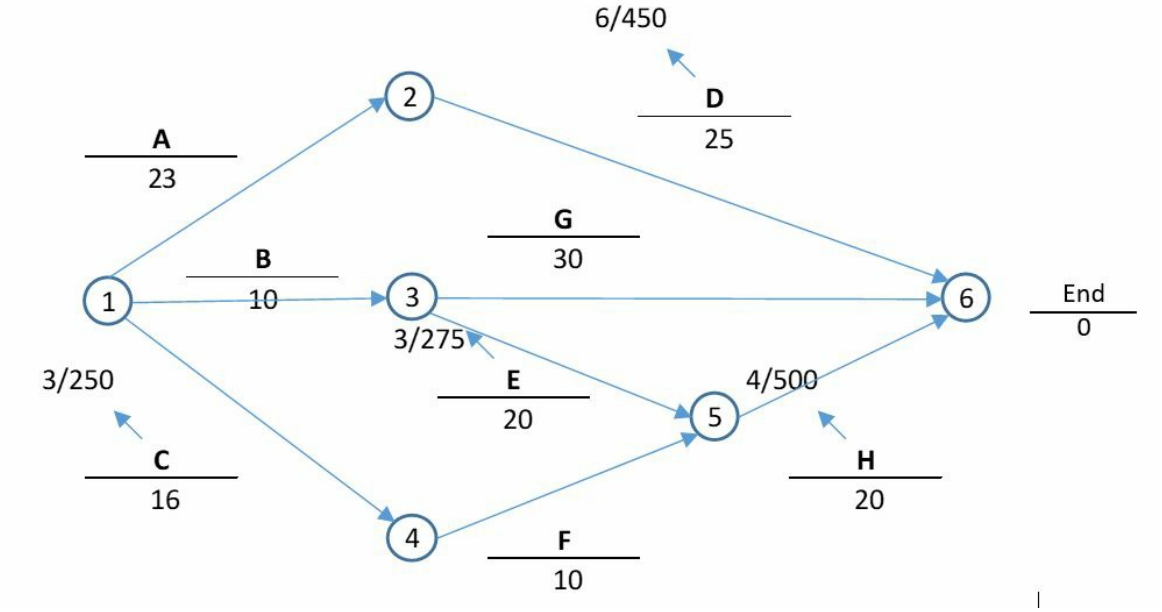
Question 30

Network Compression

15 Marks

Your company has received a Request for Quotation to develop an application for a MOOC (Massive Open Online Courses) System. Deadline for this project is very tight and delaying it would have serious repercussions. You identify that once you win the tender, you would only have a maximum of 45 weeks before the 'go-live' date. You have planned out the job and have drawn the project network as shown below. The activity durations depicted in the network diagram are for the "All Normal" situation where the duration estimates are the normal duration required to work on a certain activity. However, if there is a need to shorten the duration to meet the 45-weeks deadline, you may have to hire more resources and incur additional cost.

You have worked out the additional costs and the compression options are shown below in the usual notation.
The "All Normal" cost for this project is estimated to be $500,000.

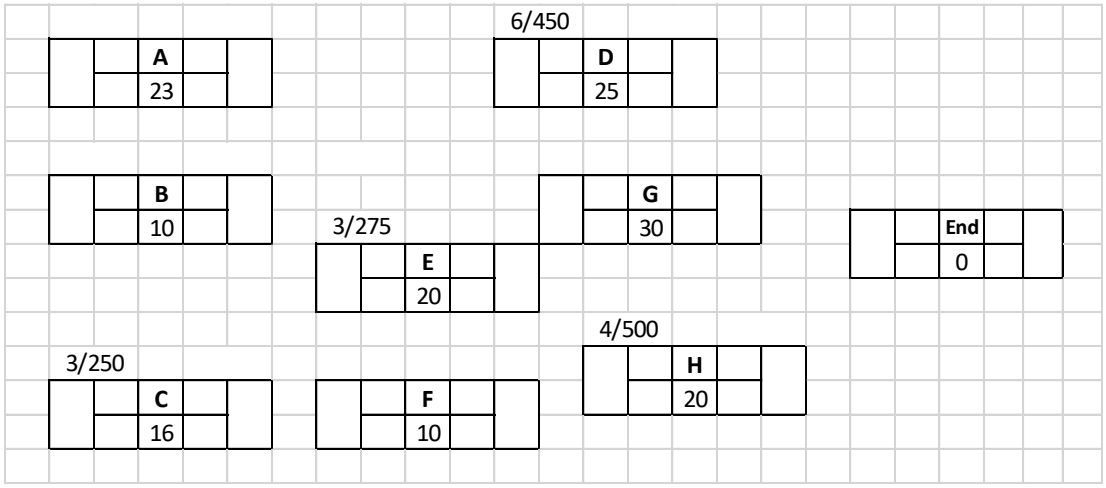


a) Perform the "All normal" calculation on the network diagram and put the values in the response template below. (4 marks)

b) Carry out project compression calculations, using the response templates given. Stop the calculations when you have achieved the 45-week target. (9 marks)

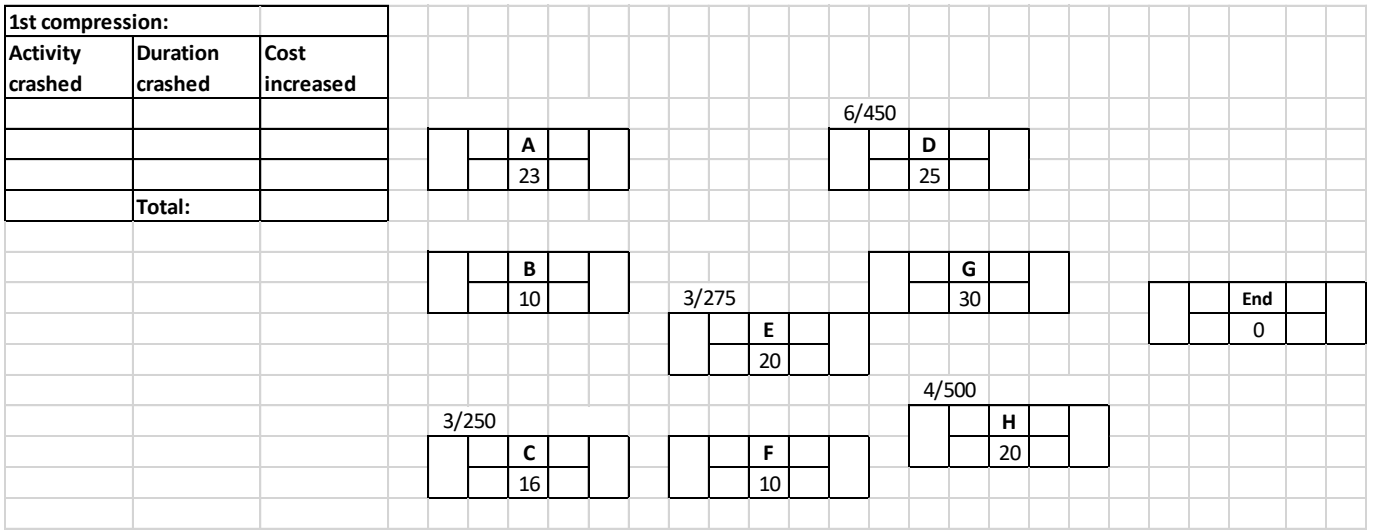
c) Calculate the minimum price you would quote to develop the MOOC systems, if you are to deliver this project within 45 weeks and making a 40% profit margin. (2 marks)

a) Perform the “All normal” calculation on the network diagram and put the values in the response template below. (4 marks)

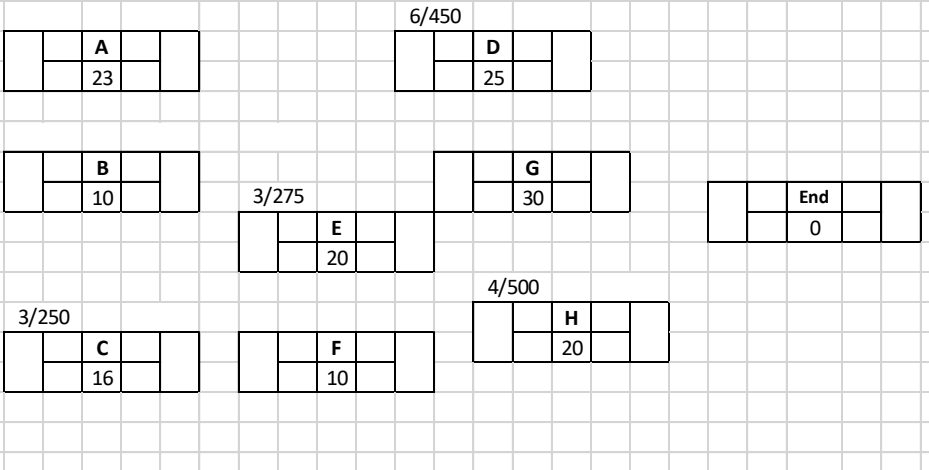


b) Carry out project compression calculations, using the response templates given. Stop the calculations when you have achieved the 45-week target. (9 marks)

1st compression:		
Activity crashed	**Duration crashed**	**Cost increased**
	Total:	



2nd compression:		
Activity crashed	Duration crashed	Cost increased
	Total:	



3rd compression:		
Activity crashed	Duration crashed	Cost increased
	Total: