NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF INFORMATICS

QUALIFICATION: BACHELOR OF INFORMATICS, BACHELOR OF COMPUTER SCIENCE	
QUALIFICATION CODE: 07BACS, 07BAIF	LEVEL: 7
COURSE CODE: PTM721S	COURSE NAME: PROJECT MANAGEMENT
SESSION: NOVEMBER 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Dr Jude Osakwe Mr. Nkululeko Mthembo Ms. Irja Shaanika
MODERATOR:	Mr. Paulus Mbangu

INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

PERMISABLE MATERIALS
1. CALCULATOR

**THIS QUESTION PAPER CONSISTS OF 9 PAGES** (including this front page)

SECTION A: MULTIPLE CHOICE QUESTIONS [20 marks]

1. The Project Management Body of Knowledge
   a) is a method of ensuring project success.
   b) must be used on all projects.
   c) is a generally accepted set of principles and practices for project management.
   d) must be used in its entirety.

2. Planning, executing, and monitoring and controlling are examples of:
   a) Project Management process groups.
   b) Project Management tools.
   c) PMBOK® areas of knowledge.
   d) Project Management objectives.

3. Within the Project Charter, _____defines the work to be completed.
   a) Project description.
   b) Statement of Work.
   c) MOV.
   d) Project Scope.

4. Which of the following processes of Scope Management Process defines what work will and will not be included in the project?
   a) Collect Requirements.
   b) Define Scope.
   c) Create Work Breakdown Structure.
   d) Validate Scope.

5. Continuously agreeing to project changes is an example of:
   a) Scope leap.
   b) Scope creep.
   c) Scope grope.
   d) Project scope growth.

6. Which of the following processes of Scope Management Process decomposes or divides the major project deliverables into smaller and more manageable components?
   a) Collect Requirements.
   b) Define Scope.
   c) Create Work Breakdown Structure.
   d) Validate Scope.

7. Based upon the following diagram and activity durations, the Critical Path is
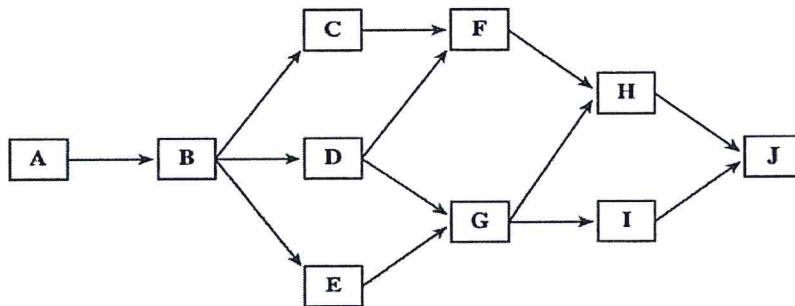
A	2
B	5
C	4
D	3
E	1
F	4
G	3
H	5
I	5
J	1

a) A+B+C+F+H+J.
b) A+B+D+F+H+J.
c) A+B+D+G+H+J.
d) A+B+D+G+I+J.

8. Under the Precedence Diagramming Method, the situation which occurs when a relationship between two tasks that can or must start at the same time is called:
a) Finish-To-Start (FS).
b) Start-To-Start (SS).
c) Finish-To-Finish (FF).
d) Start-To-Finish (SF).

9. Installing the operating system on a computer before loading any application packages is an example of:
a) Finish-To-Start (FS).
b) Start-To-Start (SS).
c) Finish-To-Finish (FF).
d) Start-To-Finish (SF).

10. _____is ensuring that project resources are not overallocated.
a) Resource leveling.
b) Resource constraining.
c) Resource starving.
d) Resource management.

11. Rent, utilities, insurance and administrative costs are examples of:
    a) Direct Costs.
    b) Indirect Costs.
    c) Sunk Costs.
    d) Learning Curve Costs.

12. _____ensures that all the elements of a project come together at the right times to complete a project successfully.

    a) Management plan.
    b) Integration.
    c) Change control .
    d) Project Charter .

13. Which of the following methods is NOT a technique for selecting IT projects in organisations

    a) Categorizing IT projects.
    b) Performing net present value or other financial analyses.
    c) Implementing a balanced scorecard.
    d) IT strategy

14. A_____ is a formal group of people responsible for approving or rejecting changes to a project.

    a) Change control board .
    b) Steering committee.
    c) Change control system.
    d) Board of Directors.

15. Which of the following is NOT part of the three main objectives of integrated change control

    a) Managing actual changes as they occur.
    b) Managing changes that are positive only.
    c) Determining that a change has occurred.
    d) Influencing the factors that create changes to ensure that changes are beneficial.

16. As a software development project manager, you are approached by one of the software developers telling you that he has added additional features to the end product which were not required in the scope. He also mentions that adding those features did not take any extra time or cost. What should be your action in this situation?
    a) Ask the team member to issue a change request for the extra features.
    b) Ask the software developer to remove the extra features.
    c) Carefully review and understand the new features.
    d) Implement change control process.

17. A work breakdown structure, project schedule, and cost estimates are outputs of the _____ process.
    a) initiating .
    b) planning .
    c) executing .
    d) monitoring and controlling.

18. The project charter provides the project manager with some benefits and information. Which one of the following is most important for the project manager?
    a) High level project scope
    b) The project sponsors list
    c) Project authority
    d) The formal role of Project Manager

19. What is the main goal of project cost management?
    a) to complete a project for as little cost as possible.
    b) to complete a project within an approved budget.
    c) to provide truthful and accurate cost information on projects.
    d) to ensure that an organization's money is used wisely.

20. As the project manager for a software development project, you are helping to develop the project schedule. You decide that writing code for a system should not start until users sign off on the analysis work. What type of dependency is this?
    a) Technical.
    b) mandatory.
    c) discretionary.
    d) external.

Section B: STRUCTURED QUESTIONS [80 marks]

Question One [20 Marks]

Assume the following activities for a project along with their estimated durations and predecessors.
  a) Construct an Activity on Arrow Diagram (AOA)   (8 marks)
  b) Determine all the possible Activity Paths and compute the total durations (days).
                                                                                       (10 marks)
  c) State the Critical Path and its duration.(days)   (2 marks)

Activity	Estimated Duration in Days	Predecessor
A	2	None
B	4	A
C	3	A
D	1	C,B
E	1	C,D
F	3	D,E
G	2	F

Question Two [25 Marks]

You have been appointed IT manager to a company that sells and fits exhaust systems from a number of different manufacturers to a wide variety of motor vehicles. This is a very competitive market. The company must be able to answer immediately any telephone enquiry concerning its current stock and prices. In addition, good management information and the strict control of costs are essential. The existing computer-based stock system, which was developed some time ago by the in-house IT section, is no longer adequate. A decision has been made by your senior management to adopt a new, more advanced **stock recording and on-line enquiry system**. Some major exhaust system manufacturers offer such systems as an off-the-shelf (OTS) package, but your management are concerned that these packages might be too restrictive and thus not suitable for the wide range of exhaust systems that your company sells. The alternative would be to design and develop a new in-house system. However, your current IT section has no experience of on-line or cost-control systems.

  a) Assuming a decision has been made to acquire an off-the-shelf package. Establish the activities that would now be needed to select and acquire the software and then to set up a fully operational stock system.   (8 marks)

b) The top management would like you to be the Project Manager for this IT Project. The alternative to design and develop a new in-house system is being considered by other members of the management team. As the IT Manager and newly appointed Project Manager:

   i) Outline the possible Risks to this project should an in-house system be designed and built. (4 marks)

   ii) Your Chief Information Officer (CIO) you report to has advised that you use the EVM (Earned Value Management) technique. Evaluate the importance of using this technique. (3 marks)

c) Given the following information for the **stock recording and on-line enquiry system** project, answer the following questions.

PV is the planned value,
EV is the earned value,
AC is the actual cost,
BAC is the budget at completion.

PV = $30,000
EV = $25,000
AC = $35,000
BAC =$130,000

i. Compute the Cost Variance (CV) and Schedule Variance (SV) for this project? (6 marks)

ii) Analyse the data above and state how the project whether is ahead of schedule or behind schedule? Is it under budget or over budget? (4 marks)

Question Three   **[25 marks]**

Perform a financial analysis for a project using the following information. 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
$30,000 each year in Years 2, 3, and 4.
Estimated benefits are $0 in Year 1 and $100,000 each year in Years 2, 3, and 4.

Use a **9 percent discount rate**, and round the discount factors to two decimal places.

NB Discount Factor = $\dfrac{1}{(1+r)^t}$ or $1 * (1+r)^{-t}$

Create a table similar to the one below and use it to calculate and clearly display the NPV, ROI,
and year in which payback occurs.

DISCOUNT RATE	Assume Project is completed in year 1					
9%	Year	1	2	3	4	Total
	Costs	200 000	30 000	30 000	30 000	
Row (A)	Discount Factor					
Row (B)	Discounted Costs					
	Benefits	0	100 000	100 000	100 000	
Row(C)	Discount Factor					
Row(D)	Discounted Benefits					
Row(E)	Discounted Benefits-Costs					
Row(F)	Cumulative Benefits- Costs					
Row(G)	ROI= __					

Question Four [10 marks]

Your company is planning to launch an important new project that starts on January 1 and lasts one year. You estimate that you will need one full-time project manager, two full-time business analysts for the first six months, one full-time senior programmer for the whole year, four full-time junior programmers for the months of July, August, and September, and one full-time technical writer for the last three months.

When the project is running you realise that the senior programmer is over-allocated and now feels demotivated.

Acquiring qualified people for teams is crucial. It's important to assign the appropriate type and number of people to work on projects at the appropriate times. However teams at one moment or another experience conflicts.

a) Assuming you are the project manager for this project describe the technique you would employ to fix the over allocation problem? (4 marks)

b) Analyse the benefits of the technique you mentioned above? (4 marks)

c) Conflicts can be good for the project team. In which way can conflict be good? (2 marks)

[THE END]