



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT**

**DEPARTMENT OF LAND AND SPATIAL SCIENCES**

<b>QUALIFICATION(S):</b> BACHELOR OF PROPERTY STUDIES DIPLOMA IN PROPERTY STUDIES	
<b>QUALIFICATION(S) CODE:</b> 08BPRS 06DPRS	<b>NQF LEVEL:</b> 6
<b>COURSE CODE:</b> PMT611S	<b>COURSE NAME:</b> PROPERTY MAINTENANCE
<b>EXAMS SESSION:</b> JUNE 2023	<b>PAPER:</b> THEORY
<b>DURATION:</b> 3 HOURS	<b>MARKS:</b> 100

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	ELINA TEODOL
<b>MODERATOR:</b>	VERINJAERAKO KANGOTUE

<b>INSTRUCTIONS</b>	
<ol style="list-style-type: none"><li>1. Read the entire question paper before answering the Questions.</li><li>2. Please write clearly and legibly!</li><li>3. The question paper is made up of questions in <b><u>3 SECTIONS</u></b>.</li><li>4. You must answer <b><u>ALL QUESTIONS IN ALL THE 3 SECTIONS</u></b>.</li><li>5. Make sure your Student Number is on the EXAMINATION BOOK(S).</li></ol>	

**PERMISSIBLE MATERIALS**

1. Non-programmable Scientific Calculator

**THIS QUESTION PAPER CONSISTS OF 10 PAGES** (Including this front page)

**SECTION A**

Choose the correct answer for each of the following multiple-choice questions. Each correct answer carries 1 mark. (20)

- 1) \_\_\_\_\_ is most closely associated with breakdown maintenance.
  - a) Equipment adjustments
  - b) Equipment cleaning
  - c) Equipment inspection
  - d) Repair of broken parts
  - e) Replacement of worn parts
  
- 2) A \_\_\_\_\_ is a negotiated agreement between two parties where one is the customer, and the other is the service provider
  - a) Service improvement plan
  - b) Service level agreement
  - c) Service level management
  
- 3) A list of deficiencies in a construction compiled by a project manager or architect near the end of a job is known as a:
  - a) Punch list
  - b) Bid
  - c) Contract
  
- 4) In Property Maintenance an inspection is defined as \_\_\_\_\_
  - a) Term used to indicate that a piece of equipment has a deficiency
  - b) Term used to determine the serviceability of an item by comparing its physical characteristics with established standards
  - c) a process that indicates how long, who and what need to be fixed.

- d) Critical element of maintenance management that direct maintenance in a way that provides maximum output of quality work.
- 5) As the Property Manager of NUST, you walk past a garden tap on your way to lunch and notice that it's running water non-stop. What should you do?
- a) Contact the facility supervisor for immediate repair
  - b) Call the facility supervisor after lunch
  - c) Ignore it
  - d) Anticipate that the facility manager will notice it
- 6) Attempting to determine when preventive maintenance activities should be performed is known as:
- a) Breakdown maintenance
  - b) Forecasted maintenance
  - c) Preventive maintenance
  - d) Predictive maintenance
  - e) Corrective maintenance
- 7) Benchmarking is defined as \_\_\_\_\_
- a) Setting a standard for how long a piece of equipment may run until it needs to be replaced
  - b) Evaluate performance in terms of absolute measures against an expected norm
  - c) A required criterion or outcome that must be met in terms of levels of achievement.
- 8) A Breakdown maintenance is also known as a \_\_\_\_\_.
- a) Reactive
  - b) Proactive
  - c) Expensive
  - d) Inexpensive
  - e) Easy

- 9) Factors affecting the decision of how much preventive maintenance is desirable during the lifetime of the building typically include all the following except:
- a) Design
  - b) Type of product
  - c) Materials
  - d) Workmanship
  - e) Function
- 10) Fault is defined as \_\_\_\_\_
- a) Term used to indicate that a piece of equipment has a deficiency
  - b) Term used to determine the serviceability of an item by comparing its physical characteristics with established standards
  - c) Tells you how long who and what you need to fix it
  - d) Critical element of maintenance management that direct maintenance in a way that provides maximum output of quality work
- 11) Ideally, preventive maintenance will be performed:
- a) After a planned inspection
  - b) After the passage of a specified period
  - c) After a predetermined number of operating hours
  - d) Just prior to the start of the workday
  - e) Just prior to a breakdown or failure
- 12) Ideally, what per cent of the maintenance activities should be allocated to a preventative plan?
- a) Ideally, all maintenance activities should be preventative
  - b) Ideally, it should be as close to 50% as possible.
  - c) 80/20 ratio for scheduled and non-scheduled maintenance
  - d) None of the above

- 13) In the broadest sense, equipment and facilities preventive maintenance extends back to the:
- a) Design and selection stage
  - b) Procurement stage
  - c) Installation stage
  - d) Pilot-testing stage
  - e) Implementation stage
- 14) Which of the following represent the two groups into which Maintenance activities are often organised?
- a) Breakdown maintenance and preventive maintenance
  - b) Breakdown maintenance and predictive maintenance
  - c) Preventive maintenance and predictive maintenance
  - d) Equipment maintenance and breakdown maintenance
  - e) Equipment maintenance and buildings maintenance
- 15) Many facility operations run continuously. The only way to perform required maintenance in these facilities is to have a \_\_\_\_\_
- a) Set-up period
  - b) Following up period
  - c) Shutdown period
- 16) Mechanical parts that tend to wear out quickly are scheduled to be replaced during which type of maintenance activity? \_\_\_\_\_
- a) Preventive maintenance
  - b) Corrective maintenance
  - c) Scheduled maintenance
  - d) Reactive maintenance

- 17) Preventive maintenance is \_\_\_\_\_.
- a) Proactive
  - b) Reactive
  - c) Inexpensive
  - d) Expensive
  - e) Hard
- 18) Preventive maintenance is generally scheduled based on:
- a) Planned inspections
  - b) Passage of time
  - c) Number of operating hours
  - d) All the above
  - e) None of the above
- 19) Reactive maintenance is also known as \_\_\_\_\_ maintenance.
- a) Planned
  - b) After the event
  - c) Proactive
  - d) Predictive
  - e) Preventive
- 20) Responsibilities of the contractor for a construction project include:
- a) Supplying the project concept and requirements
  - b) Taking responsibility for all materials and workmanship
  - c) Providing and arranging the financing

[20]

---

**SECTION B**

For each of the following statements indicate whether it is 'TRUE' or 'FALSE'. Each correct answer carries 1 mark. (15)

- 1) A well-run maintenance department will not have a backlog of work orders. (1)
- 2) Tendering is the process of choosing the best and most expensive company to supply goods and services. (1)
- 3) Following up with the department that requested maintenance to make sure it was completed sufficiently is known as "closing the loop". (1)
- 4) In planning maintenance activities, the first step in the maintenance process is to analyse for improvement. (1)
- 5) In planning maintenance activities, the planner must consider the priority of various tasks, the amount of time required for completion, the type of tools, equipment and labour needed and the size and skill of the maintenance crew. (1)
- 6) There ever a circumstance when "run to failure" is the best maintenance practice? (1)
- 7) Life cycles costings is a process to determine some of the costs associated with an asset, including acquisition, installation, operation, maintenance, refurbishment, and disposal costs. (1)
- 8) Restoration is a more restrictive term than rehabilitation and suggests replicating the structure as originally built. (1)
- 9) The conversion of other buildings into dwellings requires an examination of the building's stability and suitability for conversion. (1)
- 10) Fixed Price Contracts can never be adjusted even if there are shifts in economic conditions. (1)
- 11) Emergency maintenance and critical maintenance are types of work that can be planned. (1)

- 12) Life cycle costing analysis (LCCA) is based on short-term costs and savings. (1)
- 13) Life-cycle assessment and life-cycle costing allow the breakdown of environmental impacts and costs associated with building life stages. (1)
- 14) The lack of accurate and reliable information on the current condition and maintenance required of building and fabric elements is one of the most pressing problems in maintenance. (1)
- 15) Property maintenance managers are responsible for overseeing maintenance and repair work on homes, apartments, condos, shopping centres, and office complexes. (1)
- [15]**
- 

### SECTION C

#### Question 1

- a) Daniels is a property maintenance manager. He has been contracted to perform all the typical duties of a property manager. Outline the four (4) main duties expected of Daniels as a property maintenance manager. (4)
- b) Tender documents help to maintain and protect the relationship between client and contractor. List any ten (10) documents to be included as part of the Tender documents in the preparation to invite tenders (5)
- c) State the eight (8) basic principles of tendering process in the construction industry. (4)
- d) State the three (3) types of inspections under planned structural maintenance. (3)
- e) With the aid of a diagram, demonstrate the two main types of maintenance and their respective categories of maintenance management approaches. (4)
- [20]**
-



**Question 2**

- a) What is “modernization of dwelling”? (2)
- b) Identify the four (4) primary stages of the building conversion process (4)
- c) What are the effects of obsolescence and redundancy on any building? (1)
- d) What is redundancy in a building and what causes it? (2)
- e) What is obsolescence in a building and what are its types? (4)
- f) What is a service level agreement (SLA) and what are its benefits? (6)
- g) How do Life Cycle Assessment (LCA) and Life Cycle Costing (LCC) differ in their methodologies and objectives? (4)

**[23]**

---

**Question 3**

- a) Mr Jarson owns Jarson & Sons Property Maintenance Company. To achieve the company’s objective, he must consider several strategies for contracting out maintenance work. Outline the four (4) types of maintenance contracts in a building that he may adopt. (4)
- b) The majority of builders still obtain much of their work by a system of tendering. State the three (3) principal methods of choosing a contractor through tendering in the construction industry. (3)
- c) Outline the three (3) common problems in property maintenance. (3)
- d) State the three (3) causes of Contract changes in the building maintenance industry. (3)
- e) How can a property maintenance manager develop an inspection cycle for planned maintenance? (3)
- f) What is included in an Inspection Report for a property? (3)

g) What are the three phases of the life cycle of property?

(3)

[22]

---