higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

BUILDING ADMINISTRATION N5

(4090045)

8 December 2023 (X-paper)
09:00–12:00

This question paper consists of 7 pages.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
BUILDING ADMINISTRATION N5
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Use only a blue or black pen.
5. Write neatly and legibly.

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QUESTION 1: EARNINGS AND EXPENDITURE

Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (1.1–1.10) in the ANSWER BOOK.

1.1 Costs are the expenses incurred to do business and are divided into overheads and cost of sales.

1.2 Cost of sales includes the cost of materials and the cost of labour.

1.3 Overheads are divided into individuals' overheads and site overheads for a specific project.

1.4 Tax is the money paid to the NHBRC as a percentage of any profit made.

1.5 Total income is the money a labourer receives for the work done on a project.

1.6 Measured work is the estimated work that must be carried out to complete a project.

1.7 Unit rate is the monetary value of an element per unit of measurement.

1.8 Daywork is a method used to calculate what to pay a contractor for specific work based on the cost of labour, materials and plant plus a mark-up for overheads and profit.

1.9 Nominated materials are materials that are not specified in the plans, specifications and other project documentation.

1.10 A variation is a change to the scope of a construction contract.

(10 × 1) **[10]**

QUESTION 2: MAIN CONTRACTORS AND SUB-CONTRACTORS

2.1 List the FIVE rights that a contractor has in terms of a contract. (5)

2.2 What are the FIVE main responsibilities of a contractor in terms of a contract? (5)

[10]

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QUESTION 3: SITE MEETINGS AND SITE RECORDS

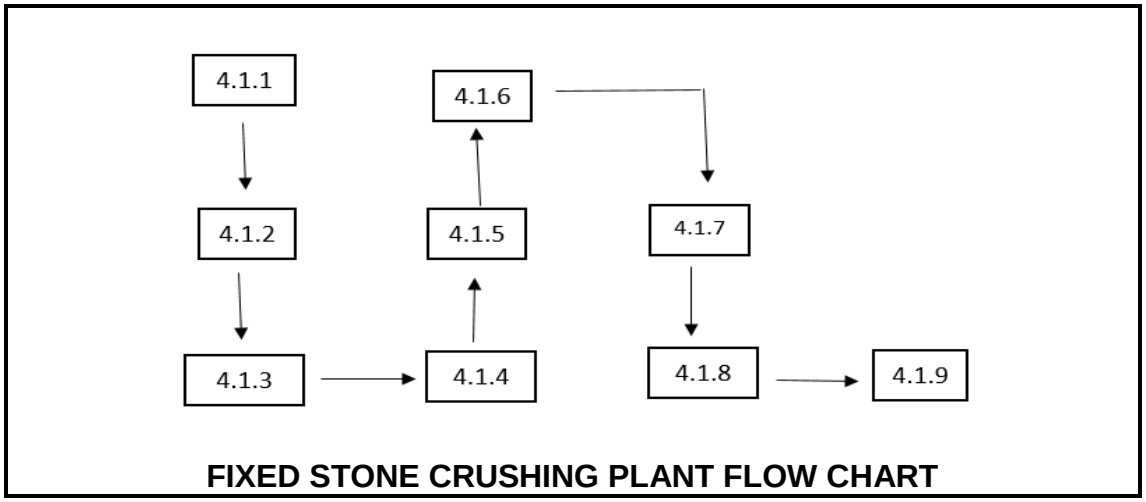
Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A–J) next to the question number (3.1–3.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
3.1	Visitors who have filled out the site register are also noted in the site diary list	A	plant and equipment
3.2	Material delivery and daily usage are recorded in the site diary	B	general comments
3.3	The site diary notes the number of workers per trade	C	weather records
3.4	This is to note additional information as it arises daily	D	attendance registers by trade
3.5	The site diary notes operational and idle equipment	E	visitors' list
3.6	Any delays experienced are recorded in the site diary	F	materials
3.7	Data gathered from previous projects in the area that are used for planning projects that typically run over several years	G	agenda
3.8	A list of discussion points for the meeting in the order in which they will be discussed	H	project delay
3.9	A scale or full-size model of a design used for demonstration, design evaluation, promotion and other purposes	I	historical data
3.10	Actual weather is recorded in the site diary	J	mock-up

(10 × 2) **[20]**

QUESTION 4: MECHANICAL PLANT

4.1 The flow of operations in a fixed stone crushing plant is given below. Complete the operational steps. Write only the answer next to the question number (4.1.1–4.1.9) in the ANSWER BOOK.



FIXED STONE CRUSHING PLANT FLOW CHART

(9 × 1) (9)

4.2 What is the importance of planned maintenance of plant and equipment? (2)

4.3 List the processes that must be followed for planned maintenance. (4)

[15]

QUESTION 5: SUPPORT TO STRUCTURES

5.1 Explain the term *underpinning*. (3)

5.2 Illustrate by means of a labelled sketch the method of underpinning using jacked piles. (7)

[10]

QUESTION 6: MASS HAUL DIAGRAMS

6.1 Complete the following sentences by writing only the missing word or words next to the question number (6.1.1–6.1.7) in the ANSWER BOOK.

6.1.1 … is the volume of materials transported multiplied by the distance travelled.

6.1.2 A … makes it possible to determine the most cost-effective method of handling the distribution of earthworks volumes.

6.1.3 A … is a graph that represents a sectional view of the cumulative volumes of cut and fill.

6.1.4 … is the level formed after the cut or fill has been finished.

6.1.5 … identifies the lowest or highest point inside a mass haul area.

6.1.6 … are the points where the cut and fill volumes are equal.

6.1.7 … are important for making logistical and financial decisions for a project.

(7 × 1) (7)

6.2 Define the following terms found in mass haul diagrams:

6.2.1 Borrow pit (2)

6.2.2 Haul (1)

6.3 The table below gives the length of the ordinates from the edge of a small river to the edges of a straight building. The area has to be paved.

Distance (m)	0	5	10	15	20	25	30	35	40
Ordinates (m)	3	33	30	38	30	18	11	18	20

6.3.1 Plot the area of the paving. (2)

6.3.2 Use the mid-ordinate method and calculate the approximate area of the paving, given:

A = ½d [(01 + 09) + 2(02 + 03 + 04 + 05 + 06 + 07 + 08)] (3)

6.3.3 Use Simpson's rule and calculate the approximate area of the paving, if:

A = 1/3d [(01 + 09) + 2(03 + 05 + 07) + 4(02 + 04 + 06 + 08)] (4)

6.3.4 Which of the two answers (6.3.2–6.3.3) would you suggest is more precise? (1)

[20]

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QUESTION 7: VARIATIONS, OMISSIONS AND HANDING OVER

7.1 Give THREE main reasons why variations occur on a project. (6)

7.2 Explain what *practical completion* means. (4)

[10]

QUESTION 8: STATUTORY BODIES

8.1 Explain what the following Acts regulate in the construction industry:

8.1.1 Occupational Health and Safety Act

8.1.2 Skills Development Act

8.1.3 Employment Equity Act

8.1.4 Basic Conditions of Employment Act

8.1.5 Labour Relations Act

(5 × 2) (10)

8.2 Give the full terms for the following abbreviations and acronyms:

8.2.1 NHBRC

8.2.2 SANS

8.2.3 SABS

8.2.4 CIDB

8.2.5 ECSA

(5 × 1) (5)

[15]

TOTAL: 100

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