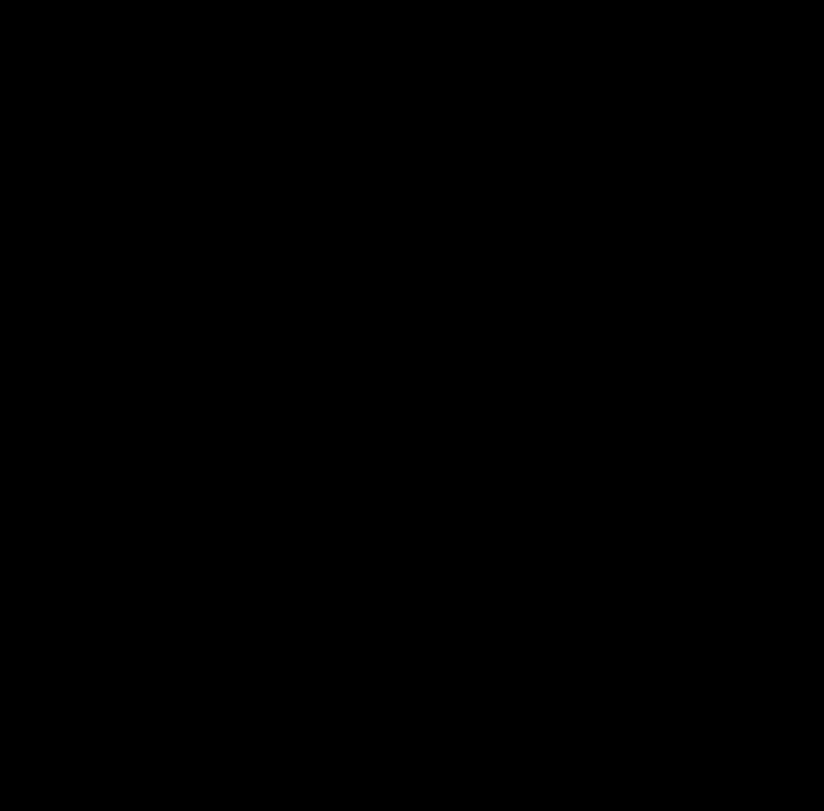


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TRADE: BUILDING CONSTRUCTION (BDC)

SUBJECT: FINISHING WORKS IN BUILDING CONSTRUCTION

DURATION: 3 HOURS

INSTRUCTIONS TO CANDIDATE:

1. This Exam paper is composed of **three sections (A, B and C)**. Follow the instructions given below and answer the indicated questions for a total of **100 marks**.

Section **A**: Fourteen (14) questions which are **Compulsory** **55 marks**
Section **B**: Among the five (5) questions, attempt any three (3) **30 marks**
Section **C**: Among the two (2) questions, attempt anyone (1) **15 marks**
2. Fill in your actual **names** and **Index number** on the provided space (Cover).
3. Do not remove or tear any page or part of this Questions and Answers Booklet.
4. Answer in the language in which the Examination is set.
5. In section **A**, answer questions in the provided space. In case of multiple-choice questions, just **circle** the letter corresponding to the correct option.
6. In section **B** and **C**, answer questions in the provided space after section C questions.
7. **Allowed materials:**
 - Blue or Black pen.
 - Geometrical Instruments
 - Silent non-programmable calculators

01. Respond to the following statements by **True(T)** or **False(F)** regarding the relevance of each sentence. **(4Marks)**

- a) The reference line for a ceiling is used to ensure the ceiling is installed at the correct height and level.
- b) Levelling is the one way of setting out ceiling frame.
- c) Determining the level of the ceiling frame is done after fixing the ceiling frame.
- d) Identify Standard height of ceiling is used in Setting the reference line.

02. Choose by circling the correct answer to the following statements about Terrazzo finishing: **(3Marks)**

- a) When should polishing of the terrazzo surface be done?
 - i) Before curing the surface
 - ii) Immediately after applying the terrazzo paste
 - iii) After the surface has properly dried and cured
 - iv) Before levelling the surface
- b) What is the main purpose of sealing a terrazzo surface?
 - i) To make it smoother and shinier
 - ii) To protect it from stains and moisture
 - iii) To harden the terrazzo paste
 - iv) To improve the bonding of the terrazzo to the wall
- c) Why is it necessary to level the surface before applying terrazzo paste?
 - i) To make the paste easier to mix
 - ii) To ensure a smooth, uniform finish after application
 - iii) To prevent the terrazzo from cracking during curing
 - iv) To reduce the thickness of the terrazzo coating

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03. Fill in the Blank Spaces with the appropriate terms

(4Marks)

- a) The process of measuring and combining terrazzo materials before mixing is called
- b) In, materials are measured using scales to ensure high accuracy.
- c) Measuring terrazzo materials by container volume is called
- d) One major advantage of weight batching is that it provides high and in the mix.
- e) In volume batching, materials are typically measured using containers such as or
- f) batching is faster but less accurate than weight batching.

04. Using the table below match the terms in **Column A** with the correct descriptions in **Column B**

(5Marks)

Column A	Column B	Answer
1. Conduction	A. Measure of a material's ability to resist heat flow	1 =.....
2. Convection	B. Movement of particles from high to low concentration	2 =.....
3. Radiation	C. Transfer of heat through electromagnetic waves	3 =.....
4. Diffusion	D. Transfer of heat through fluid movement	4 =.....
5. R-Value of a material	E. Transfer of heat through direct contact	5 =.....

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05. Read the statement below and determine whether they are **True(T)** or **False(F)**. **(4Marks)**

- a) A glass cutter is used to score glass to the desired size.
- b) Glass pliers are primarily used for snapping glass after it has been scored.
- c) Safety glasses protect the user's eyes during glass cutting operations.
- d) Ensuring the ground is level and stable is an important step before erecting scaffolding.

06. Read the following sub-questions based on the process of laying tiles **(5Marks)** and circle the letter corresponding to the right option:

- i) What is the purpose of applying a tile adhesive before laying tiles?
 - a) To enhance the aesthetic appeal of the tiles
 - b) To secure the tiles to the surface
 - c) To fill gaps between tiles
 - d) To smooth the edges of the tiles
- ii) Which of the following is essential before starting to lay tiles on a floor?
 - a) Applying grout to the joints
 - b) Ensuring the floor surface is clean and dry
 - c) Setting out the pattern design
 - d) Cutting tiles to fit the edges
- iii) What is the correct order of steps in laying tiles on a wall?
 - a) Setting out the area, applying adhesive, laying tiles, grouting
 - b) Grouting, applying adhesive, laying tiles, setting out the area
 - c) Laying tiles, setting out the area, grouting, applying adhesive
 - d) Applying adhesive, setting out the area, laying tiles, grouting

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- iv) What should be done after the tiles are laid and before the grout is applied?
- a) Leave the tiles overnight for drying
 - b) Clean the surface and remove excess adhesive
 - c) Cut the tiles for finishing
 - d) Apply a second layer of adhesive
- v) What is the function of tile spacers during the installation process?
- a) To ensure proper alignment of the tiles
 - b) To speed up the grouting process
 - c) To hold the tiles in place while the adhesive sets
 - d) To smooth the surface of the tiles

- 07.** a) Re-Arrange the following procedures for thermal shock testing. **(4Marks)**
- i) Heat material to high temperature
 - ii) Immediately transfer to low-temperature environment
 - iii) Observe physical changes
 - iv) Document structural behavior

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- b) Using the table below match the observed defect with test type:

Defect	Most Likely Test	Answer
A. Surface cracking	1. Temperature Cycling	1=.....
B. Loss of flexibility	2. Thermal Shock	2=....
C. Joint separation	3. Combined Testing	3=....
D. Mold or corrosion	4. Heat Aging	4=....

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08. Provide the names for the given images in the indicated space

(4Marks)

Image	Answer(name)
	
	
	
	

09. Read the following sub-questions and circle the right option to each.

(4Marks)

a) Which of the following is **NOT** a suitable hardcore material?

- i) Broken bricks
- ii) Silt soil
- iii) Gravel
- iv) Crushed stone

b) What is the primary purpose of compacting the ground base?

- i) To increase air voids
- ii) To reduce soil friction
- iii) To improve stability and strength
- iv) To make the surface wet

c) What is the ideal thickness of each hardcore layer before compaction?

- i) 50 mm
- ii) 100 mm
- iii) 150–200 mm
- iv) 300 mm

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- d) What happens if the base is not properly compacted?
- i) Water pools correctly
 - ii) Floor becomes stronger
 - iii) Settlement and cracks may occur
 - iv) No difference is noticed

10. Read the statements and respond by **True(T) or False(F)** regards the relevance of each sentence. **(4Marks)**

- a) A runner is a vertical member used to hang the ceiling frame.....
- b) Tie beams help distribute the load and strengthen the frame.....
- c) The main runners are attached directly to the ceiling without support.....
- d) Hangers carry the weight of the ceiling down to the main structure.
.....

11. You have given the paragraph with gaps, fill in with the appropriate terms **(4Marks)**

Soundproofing in building construction often involves using different types of walls to block or absorb noise. For example, aand massive wall made of concrete uses it'sis to stop airborne sound from passing through. In contrast, a wall made with.....materials like fiberglass helps in absorbing sound waves within a room. Another effective method is constructing a wall partition, where two wall layers are separated by an or filled with sound-absorbing material like One commonly used insulating material is, which not only dampens sound but also offersresistance.

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- 12.** Use the table below to match elements in **column A** with their corresponding elements in **column B**. **(4Marks)**

Column A	Column B	Answer
A. Measuring midpoint	i. Spirit level	A = ...
B. Cutting in different size	ii. Tile spacers	B = ...
C. Leveling tiles	iii. Tape measure	C =...
D. Maintaining equal joint	iv. Tile cutter	D =...

- 13.** Using the table below match the paint type with its description. **(2Marks)**

Column A	Column B	Answer
A. Emulsion Paint	1. Used on metal and wood	A =
B. Enamel Paint	2. Water-based, used on walls	B =
C. Primer	3. Used to reduce paint viscosity	C =
D. Thinner	4. Applied before topcoat	D =

- 14.** How many Alucobond cladding panels (Aluminum Composite Panels) are required to cover a wall that is 15 feet long and 10 feet high, using panels that measure 4 feet by 8 feet, including a 10% allowance for wastage? **(4Marks)**

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- 15.** Read carefully the sub-questions below and answer them accordingly. **(10marks)**

a) Arrange the following steps of terrazzo flooring in correct sequence:

- i) Batching materials
- ii) Grinding terrazzo
- iii) Pouring mixture
- iv) Mixing materials

1
2
3
4

b) What is the main purpose of dividing strips in terrazzo work?
(choose the best answer)

- i) To increase surface friction
- ii) To divide color sections and prevent cracks
- iii) To reduce labor cost
- iv) To reflect light

c) Which material is commonly used as aggregate in terrazzo floors?
(choose the best answer)

- i) Sand
- ii) Gravel
- iii) Marble chips
- iv) Granite powder

d) Choose by circling elements which are not used in terrazzo works from list below.

- 1. Polishers and grinders,
- 2. Concrete mixer,
- 3. Glass cutter,
- 4. Metal and plastic strips,
- 5. Prism,

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6. Water and Bucket,
7. Total station,
8. None of the above
9. 3,5 and 7 are correct answers
10. 6, 2 and 4 are correct answers

16. You are auditing mortar work on a tile flooring project and suspect **(10marks)** improper batching.

- a) What are any five (5) indicators would you look for, in hardened mortar that suggests incorrect batching?
- b) Propose any five (5) quality assurance procedures that can help prevent batching errors in future projects.

17. Fill in the gaps with the following terms about screeding in cement flooring: ***bonded, unbonded, intervals, hardcore, workability, cracking, floating, durability, dusting, concrete.*** **(10marks)**

During screeding, it is essential to lay the screed at regular **(1.....)** for uniform leveling. The base layer, also called **(2.....)**, must be well compacted. Depending on the use, screeds can be **(3.....)**, **(4.....)**, or **(5.....)**. Pouring fresh **(6.....)** requires proper **(7.....)** to allow easy spreading. Failure to cure properly may lead to surface **(8.....)** or **(9.....)**. For long-lasting floors, the **(10.....)** of the screed is critical.

18. Explain any five (5) key reasons why curing process is important for **(10marks)** pre-cast terrazzo tiles.

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- 19.** a) Re-Arrange the following stages of plastering a gypsum ceiling. **(10marks)**
- i) Mix plaster
 - ii) Apply plaster with trowel
 - iii) Level and smooth the surface
 - iv) Allow to dry
 - v) Clean the surface
- b) Re-Arrange the steps of varnishing a plywood ceiling.
- i) Sanding between coats
 - ii) Apply varnish
 - iii) Prepare surface (clean and sand)
 - iv) Apply wood sealer
 - v) Final drying

Section C: Attempt only one (1) question

(15 marks)

- 20.** A mason drilled an opening for installing a window, but the resulting hole was smaller than required. **(15marks)**
- a) What problems can result from creating an undersized window opening?
 - b) Describe the corrective actions that should be taken to properly resize the opening, and give the tools to be used.
 - c) What are the best methods of drilling or enlarging such an opening to ensure accuracy and a clean finish?
- 21.** You're managing plastering works for a commercial office building with varying internal and external walls requirements. **(15marks)**
- a) Give and explain the best plaster types for external and internal walls.
 - b) Justify your choice of plastering method (Manual vs. machine) for this large-scale job.

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- c) Referring to the table below, propose a plastering schedule for the two (2) sections (External and Internal) considering mainly the drying time.

Section	Plaster Type	Drying Time	Scheduling Recommendation
Internal Walls			
External Walls			

END

RESERVED SPACE FOR SECTION B AND C ANSWERS

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