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BUGESERA DISTRICT

**TSS 2nd TERM DISTRICT COMPREHENSIVE ASSESSMENT
SCHOOL YEAR: 2024-2025**

SECTOR: CONSTRUCTION AND BUILDING SERVICES

...../100
MARKS

TRADE: BUILDING CONSTRUCTION

RQF LEVEL: LEVEL 3

**MODULE CODE AND TITLE: BDCBB 301 BRICK AND BLOCK OF ELEVATION
MASONARY WALL**

DURATION: 3hours

DATE: / / 2025

INSTRUCTIONS TO CANDIDATE:

- ✓ **This exam has three sections.**
- ✓ **Maximum marks...../100Marks**
- ✓ **Attempt all Questions in A**
- ✓ **choose only three questions among five questions in section B.**
- ✓ **Choose only one question among two question in section C**
- ✓ **Use pencil to draw any sketch mandatory**
- ✓ **Draw a line after answer the question**

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SECTION A attempt all questions

(55marks)

Q1. What do you understand about I” Queen closure?”

(2marks)

Q2. Mortar may be defined as a material composed of fine aggregate and cement, which forms a hardened mass after mixing with water. List any three (3) characteristics of good mortar

(3marks)

Q3. Complete the figures below by using the following words: Cellular, Frogged, Perforated, cored, hollow

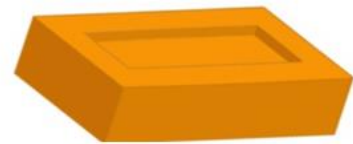
(5marks)



a).....



b).....



c).....



d).....



e).....

Q4. Give any four (4) the defects caused by dampness entering through walls of buildings? **(4marks)**

Q5. What do you Understand about “Segregation of mortar” in masonry and what are its disadvantages in durability of mortar **(2marks)**

Q6. Match the types of safety signs (column A) with the typical examples at workplace (Column B) **(5marks)**

types of safety signs	typical examples
1. Prohibition Signs	A. Safety helmets must be worn
2. Warning Signs	B. Danger Electric shock risk
3. Mandatory Signs	C. Emergency escapes
4. Safe Condition Signs	D. Hydrant
5. Fire Equipment Signs	E. Children must not play on this site

Q7. Answer by true or false **(5marks)**

- i. High sand content in mortar always improves its strength.
- ii. Mortar segregation can lead to cracking and shrinkage in masonry structures.
- iii. Using coarse sand in mortar can contribute to segregation.
- iv. Excess water in mortar does not causes segregation.
- v. Precise ingredients are quantified according to the mix ratio.

Q8. Define term “Bonding” **(2marks)**

Q9. Outline any eight (8) point to follow in storing tools and equipment **(4marks)**

Q10. Choose the letter corresponding to the correct answer in each statement: **(5marks)**

1.In reinforced concrete arches, reinforcement is mainly provided at which location?

- a) Extrados
- b) Intrados
- c) Haunch
- d) Crown

2.Which of the following is the primary function of an arch in construction?

- a) To increase the aesthetic appeal of a structure
- b) To provide ventilation

- C) To support loads by distributing weight evenly
- d) To reduce the need for foundations

3. Which of the following is NOT a type of arch?

- a) Segmental Arch
- b) Pointed Arch
- c) Barrel Arch
- d) Spiral Arch

4. What type of arch requires centering (temporary support) during construction?

- a) Masonry Arch
- b) Reinforced Concrete Arch
- c) Steel Arch
- d) Prefabricated Arch

5. What is the term for the curve formed by an arch?

- a) Extrados
- b) Intrados
- c) Spandrel
- d) Haunch

Q11. Why timber lintel isn't commonly used? **(2marks)**

Q12. Identify the types of personal protective equipment, at least four (4) types. **(2marks)**

Q13. Mention any four (4) requirements of mixing area.

(2marks)

Q14. Depending on the type of construction and required strength. Enumerate any six (6) recommended mixing ratios for bricklaying mortar.

(3marks)

Q15. Give different classification of wall according to the load system, at least any three (3) points for each class.

(3marks)

Q16. Compare the substructure and superstructure of a building in terms of their construction requirements.

(2marks)

Q17. Rearrange the following steps in the correct sequence for constructing an arch:

Placing the voussoirs; Removing the centering after curing; Setting out the arch dimensions; Finishing and strengthening the arch; Erecting the centering. **(4marks)**

SECTION B Choose only three questions**(30marks)**

Q18. The double Flemish bond is used, where a better appearance of the wall is required. With Clearsketches show 1st and 2nd of Courses of Right Angle in double Flemish bond. **(10marks)**

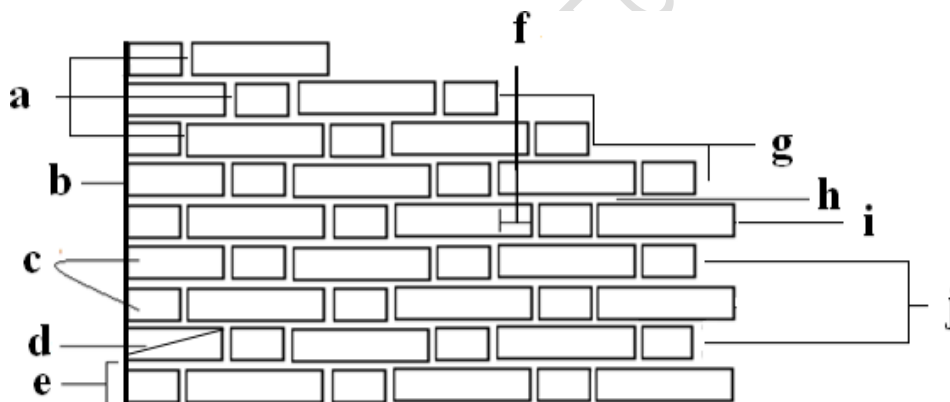
Q19. Briefly explain the following the properties of good bricks **(10marks)**

- a. Color:
- b. Shape:
- c. Size:
- d. Soundness:
- e. Hardness:

Q20.a. Describe any five(5)ways of good cement storage **(5marks)**

b.State and explain two (2) methods of mixing mortar **(5marks)**

Q21. The Figure below indicate the Technical terms for bonding structure in bricklaying. Redraw the figure and name it's Parts. **(10marks)**



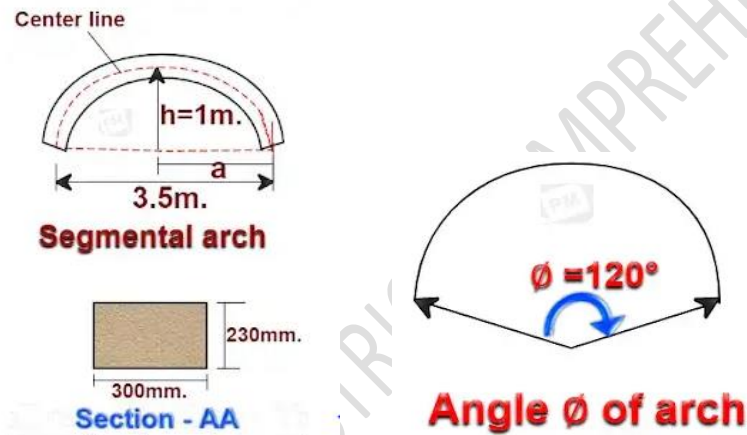
Q22. Give 10 tools used in building construction and it's function for each **(10marks)**

SECTION C Choose only one question

Q23. A brick wall with dimensions 10 meters long, 3 meters high, and 0.2 meters thick is to be constructed using standard bricks of size 190 mm $\times$ 90 mm $\times$ 90 mm (with 10 mm mortar thickness). The mortar mix ratio is 1:5 (cement: sand). Assume 25% mortar wastage. Calculate: **(15marks)**

1. Number of bricks required
2. Quantity of cement (in bags)
3. Quantity of sand (in cubic meters)
4. Quantity of water required (Assume water-cement ratio = 0.5)

Q24. A segmental brick arch with a span of 3.5m and a rise of 1m is built using a 1:5 mortar mix, water cement ratio a 0.45. If the thickness of the arch is 230mm and width of the arch is 300mm, and central angle equal 120° . determine the quantity of arch work. **(15marks)**



GOOD LUCK!!