higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

APRIL EXAMINATION

BRICKLAYING AND PLASTERING THEORY N1

30 MARCH 2016

This marking guideline consists of 6 pages.

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QUESTION 1

1.1
- Brick hammer
- Club hammer
- Brick bolster
- Cold chisel
- Comb hammer (5)

1.2
- Bulk density
- Porosity
- Ability to withstand high temperatures (3)

1.3
- Soldier course
- Header course
- Brick on edge
- Stretcher course
- Brick on edge stretcher course (5)

1.4
- Testing for cleanliness
- Testing for vegetable matter
- Bulk density (3)

1.5 Grading means sunning a sample of sand through a series of sieves. (2)

1.6 Efflorescence is the salt deposit that remains when brickwork dries out. (2)
[20]

QUESTION 2

2.1
- Limestone is mined in an open-cast mine.
- After the limestone has been crushed it is fed into a rotating heated kiln.
- The downward sloping kiln moves the lime forward while it's being heated.
- The heat expels the carbon dioxide and leaves unslaked lime.
- The limestone is cooled down.
- The limestone is then further refined and becomes quick-lime.
- The quick-lime is dispatched in 25 - kilogram sacks. (10)

2.2
- Air-entrainers
- Retarders
- Plasticisers (4)

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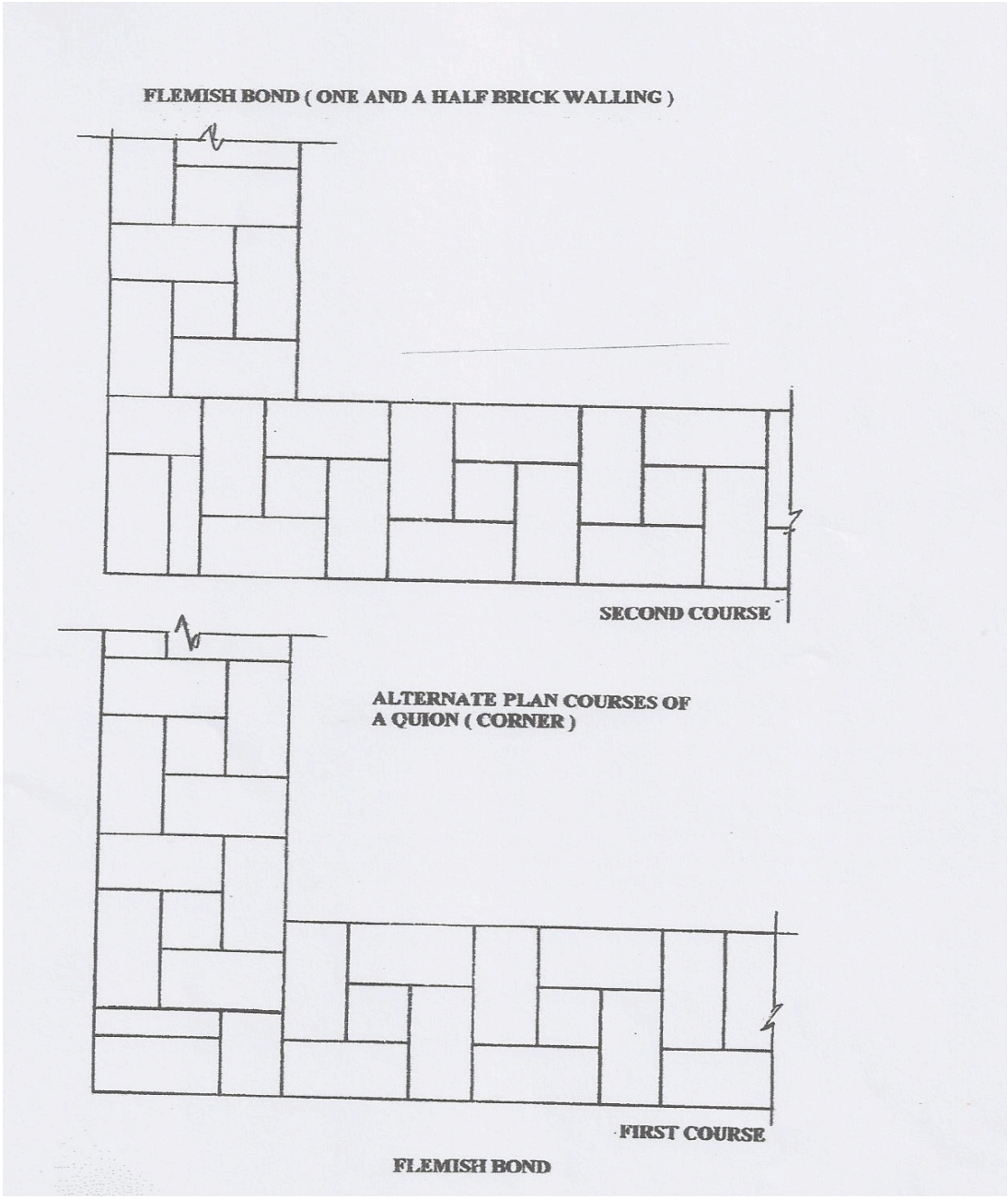
2.3
- Check that the mould is clean and free from set concrete.
- Place the base plate on the floor.
- Place the mould on the plate.
- Fill the mould with concrete in four layers.
- Tamp each layer (25 strokes with a steel bar) and strike off the concrete level with the top of the mould.
- Remove the mould vertically, allowing the concrete to subside.
- Place the mould next to the concrete on the base.
- The difference in height between the top of the concrete and the mould is the slump. (6)

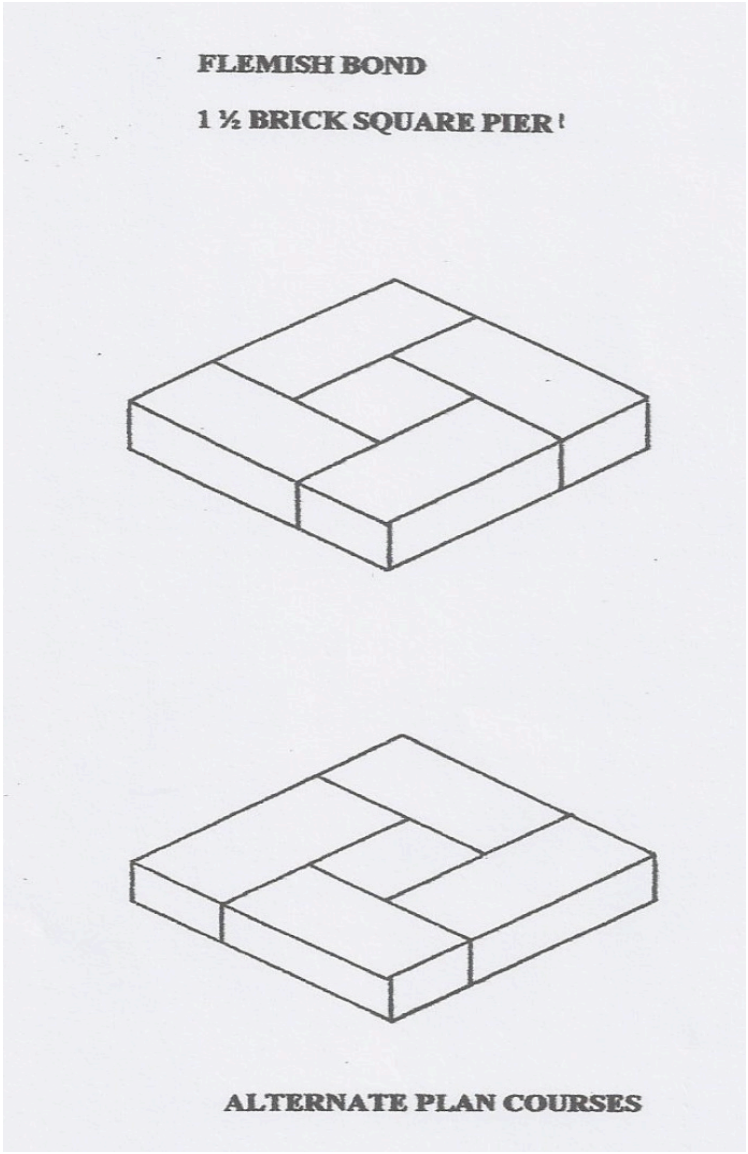
[20]

QUESTION 3

3.1



3.2



(10 × 2) **[20]**

QUESTION 4

4.1
- Crusher sand
- River sand
- Put sand
- Desert sand
- Natural sand (5)

4.2
- Choose a solid mixing platform.✓
- Gauge off the sand according to the prescribed mix.✓✓
- Spread the sand on the mixing platform in a roughly circular layer.✓
- Measure off and spread the cement evenly over the sand, and mix the two until the mix is a uniform colour.✓✓
- Form a saucer shaped depression in the centre.✓
- Pour half the amount of water required in the hollow.✓
- Shovel the material from the edge of the heap to the centre, turning over each shovel.✓
- The remainder of the water is added slowly as the material is turned over.✓
- The addition of water all at once may result in the washing away of the cement.✓
- Gauge off the stone and spread it evenly over this, and mix thoroughly until the colour is consistent.✓ (13)

4.3
- Roman
- Greek (2)

[20]

QUESTION 5

5.1 The mix contains no fines. (3)

5.2
- Concrete
- Stone
- Cement (3)

5.3
- Ensure a safe environment for all the construction teams on site.
- Provide a clean, hygienic facility for the construction teams during tea breaks and lunch breaks.
- Provide clean toilet facilities on site.
- Proper billboards must be displayed with relevant safety requirements. (4)

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5.4 5.4.1 It is the underside edge of the arch as seen in elevation.

5.4.2 It is the vertical distance between the springing line and the highest point of the intrados.

5.4.3 It is the horizontal distance between the opening over which an arch is bridged.

5.4.4 It is the upper edge of the arch as seen from the front.

5.4.5 It is the support structure on which the arch is built.

(5 × 2) **[10]**
TOTAL: 100

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