higher education & training

Department:
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REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

SURFACE ELEMENTS THEORY AND PRACTICAL N4

20 NOVEMBER 2019

This marking guideline consists of 8 pages.

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SECTION A

QUESTION 1

1.1	1.1.1	True
	1.1.2	False
	1.1.3	True
	1.1.4	False
	1.1.5	False
	1.1.6	True
	1.1.7	False
	1.1.8	False
	1.1.9	True
	1.1.10	False
	1.1.11	True
	1.1.12	False
	1.1.13	False
	1.1.14	True
	1.1.15	True
	1.1.16	True
	1.1.17	True
	1.1.18	False
	1.1.19	True
	1.1.20	False

(20 × 1) (20)

1.2	1.2.1	G
	1.2.2	J
	1.2.3	F
	1.2.4	I
	1.2.5	H
	1.2.6	A
	1.2.7	C
	1.2.8	D
	1.2.9	B
	1.2.10	E

(10 × 2) (20)

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1.3 1.3.1 Dormer window
1.3.2 Double hung
1.3.3 Acetate-rayon
1.3.4 Acrylic fibres
1.3.5 Metal fibres
1.3.6 Soft woods or gymnosperms or trees with needle-like leaves
1.3.7 Ceramic tiles
1.3.8 Passage
1.3.9 Quarter round
1.3.10 Fibre glass tiles or gypsum board or soundproof sheeting
1.3.11 Mirrors
1.3.12 Japanese grass cloth
1.3.13 Embossed paper
1.3.14 Jute
1.3.15 Coir
1.3.16 Acrylic
1.3.17 Bokhara
1.3.18 Architraves
1.3.19 Friezes
1.3.20 Plaster

(20 × 1) (20)
[60]

QUESTION 2

2.1 2.1.1
- Paint
- Wood
- Tiles
- Fabrics
- Wallpaper
- Vinyl (6)

2.1.2 This is an open question. The best would be wood panelling but an argument for fabrics or wallpaper could also be made. (4)

2.2 2.2.1 Vinyl flooring is a thermoplastic material✓ composed primarily of polyvinyl chloride (PVC), a plastic solution that hardens to a solid film.✓ The advantages of vinyl flooring: inexpensive and long lasting,✓ easy to maintain✓ and moisture resistant.✓ A good option for bathrooms and kitchens.✓ Usable in heavy-traffic areas and commercial buildings.✓ Comfortable underfoot.✓ Provides good insulation.✓

2.2.2 Linoleum is made of natural materials.✓ The primary ingredients are linseed oil and rosin (tree resin).✓ All of these materials are natural and biodegradable. Linoleum flooring is considered to be more environment-friendly than vinyl flooring.✓ Linoleum is inexpensive although it costs more than vinyl. It is more durable than vinyl✓ and its properties are similar to that of ceramics and hardwood.✓

2.2.3 Rubber flooring can be made from either natural tree rubber or synthetic materials,✓ which are often recycled from vehicle tires. Rubber is preferred for commercial flooring.✓ Commercial, institutional, industrial and residential areas with high traffic require rubber floors.✓ Rubber flooring is durable and shows the minimum wear and tear.✓ Natural rubber is not a good option for commercial healthcare floors because it can be toxic.✓ Rubber tiles are excellent for entrances where dirt and mud are tolerated, and traction is needed on wet floors✓

2.2.4 Properties: Cork contains a waxy substance called suberin.✓ This material naturally repels small vermin and insects.✓ It makes cork floors resistant to the growth and colonisation of these organisms,✓ and can, therefore, promote a healthy environment.✓ The softness and give of the floor causes less of a grinding action with normal foot traffic than on harder surfaces such as hardwood floors. ✓ Cork flooring has a very long life✓ and can be repaired if damaged.✓ Although cork floors are not waterproof, they are water resistant – which makes them perfect for a bathroom.✓ A polyurethane topcoat will protect cork floors from minor spills.✓

2.2.5 Asphalt is capable of outlasting almost every other type of industrial and domestic flooring material.✓ It has damp-proof and wearing qualities.✓ Asphalt can be quickly installed using a hot-mix process ✓ and it cools quickly.✓ Asphalt offers a quality, dust-free, seamless and user-friendly surface.✓ This makes asphalt perfect for various industrial applications, for example, ✓where there are heavy traffic from forklifts and similar vehicles.✓ Special grades of asphalt can also be used for flooring applications if spark-resistant properties are vital✓ or an increased resistance to acid solutions is required.✓ The material is equally suitable for a domestic environment.✓ It has a proven waterproof membrane and forms a radon gas barrier.✓ Asphalt provides the ideal base for carpets and vinyl or other types of smooth flooring.✓

(5 × 5) (25)

2.3 Most used process in paper print.✓ Strips of paper are run through presses that have as many rollers as there are colours in the design.✓ Paper is aligned so that the design and colours are printed correctly.✓ The speed of the process requires colours that dry rapidly.✓ Heat from below aids the drying process.✓ Silk screening process is done with a wooden or metal frame✓ covered with organza.✓ The size is matched to that of the design.✓ A stencil is applied with shellac or coated with a light-sensitive emulsion which allows the design to be burned onto the silk.✓ The ink is forced through the open holes of the design using a squeegee.✓ There are as many screens as there are colours and the prints have to dry between each colour print.✓ Can be over printed.✓ If one compares the two processes, it is safe to say that roller printing would be the fastest way to produce printed matter.✓ The use of a different silk screen for each colour takes up more time than the continuous run of the rollers.✓ (5)

[40]

QUESTION 3

3.1 3.1.1 Sedimentary stone was formed primarily by water,✓ a chemical action,✓ and erosion.✓ Although it is softer and easier to cut than granite, ✓ it is not as durable.✓ Many historic buildings were built of this stone and have stood the test of time.✓ Limestone colours range from dark greys to white and tan.✓ Travertine is a form of lime stone that has various textures and pits.✓ It is used for tabletops, fireplace surrounds and special wall trims.✓ Shale is a fine-grained stone that was formed by the natural compaction of clay mineral particles and silt.✓ It is sometimes found in stone wall constructions, although it tends to break into layers.✓ Shale is also crushed and mixed with water. Objects can be made from this clay-like material.✓

3.1.2 Metamorphic stone was formed by intense pressure and heat from igneous or sedimentary rock.✓ Marble resulted from the crystallisation of limestone and is a very hard ✓ and durable material (although softer than granite).✓ It comes in many colours✓ and is usually polished to form shiny, smooth surfaces.✓ Marble is used for decorative wall panels, fireplaces, flooring, counter tops and table tops.✓Slate is a rather brittle rock that splits readily into thin sheets.✓ Its colour is usually blue-grey,✓ although black, green and red slate is also available.✓ It is used mostly for tabletops, flooring and roofing.✓

(2 × 6) (12)

3.2 A – cornice
B – dado wood panelling
C – chair rail OR dado rail
D – skirting board
E – quarter round OR base board OR skirting board
F – window trim OR window frame OR architrave moulding
G – decorative wall moulding or panel field
H – door frame or architrave moulding
I – Georgian door or style or rail
J – door frame or architrave moulding
K – dado
L – hearth
M – decorative ceiling moulding
N – fire box
O – mantel or fireplace surround
P – mantel shelf
Q – picture rail
R – window sill (18)

3.3 Safety glass (annealed glass) can be made in several ways to increase its resistance to breakage owing to impact and thermal stresses.✓ When sheet glass breaks, it forms jagged pieces and slivers that can cause severe cuts.✓ Tempered, wired, laminated or security glasses prevent injuries.✓Although most of these are clear, they can be coloured or tinted and can have special surface finishes.✓ Tempered (toughened) glass has about six times the strength of annealed glass and is commonly used as safety glass.✓ Safety glass can also include fire-rated glass, which is used in fire-rated partitions to slow the spread of fire and smoke.✓ It can be made as wired glass.✓ (5)

3.4 Old building material that has been extracted and processed for reuse reduces the environmental impact.✓ The reuse of these materials promotes the conservation of non-renewable resources✓ and encourages reuse and recycling practices.✓ It is better to recycle than to use newly manufactured materials✓ and ultimately discarding them. Most building materials can be recycled without skimping on the quality.✓ Bricks and timber can be cleaned for reuse.✓ Glass, aluminium and steel can be reclaimed and reconstituted into new materials.✓ (5)

3.5 It is an ornamental motif which is circular or oval in shape.✓ It is a decorative feature used on flush plaster ceilings.✓ And it can be used as a focal point.✓ The pattern starts in the middle and branches outwards.✓ In the centre hangs a lighting pendant or chandelier.✓ The styles could range from Adam right through to stylised florals.✓ (5)

3.6 Stucco is made of Portland cement,✓ is used primarily on the exterior of buildings,✓ and is more weather resistant than plaster.✓ Stucco is applied in two or preferably three coats.✓ The order of its application is first, a scratch coat, second, a brown coat and, finally, a finishing coat.✓ The finishing coat can be varied, as in plaster techniques.✓ Stucco finishes are thin, brittle and subject to cracking or chipping.✓ It can be painted or integral colours can added to the stucco mix instead.✓ (5)
[50]

TOTAL SECTION A: 150

SECTION B

QUESTION 4

4.1 4.1.1 The architecture of Africa, like many cultural aspects of Africa, is exceptionally diverse. Throughout history, Africans had their own architectural traditions. In some cases, broader styles can be identified such as the Sudano-Sahelian architecture of West Africa. One common theme in traditional African architecture is the use of fractal scaling: small parts of the structure look similar to larger parts, such as a circular village made up of circular houses.

4.1.2 As with most architectural traditions elsewhere, African architecture has been subject to numerous external influences from the earliest times. The influences are still evident today. Western architecture has also influenced the architecture of coastal areas since the late 15th century and is now an important influence in many large buildings, particularly in major cities.

4.1.3 African architecture uses a wide range of materials. One finds structures in thatch, stick/wood, mud, mudbrick, rammed earth, and stone. Materials vary according to the region: in North Africa, stone and rammed earth are used; in the Horn of Africa drystone and mortar; in West Africa, mud/adobe; in Central Africa, thatch or wood and other perishable materials; and in South-Eastern and Southern Africa stone and thatch or wood is preferred.

(3 × 10) (30)

4.2 Persian and Oriental rugs, whether made in tribal or urban surroundings, are hand-knotted.✓ The weaver ties the material (either wool or silk)✓ around the warps✓ of the foundation in one of several types of knots.✓ Each rug is made according to a design✓ which is either copied from an intricate design plate✓ or the weaver's own invention.✓ The weaver's surroundings and way of life determines the type of rug.✓ Knots are individually tied using coloured wool to form a pattern.✓ A weft strand is tightly packed✓ between each completed row of knots to keep each knot firmly in place.✓ A rug takes months or even years to complete,✓ but the result is a unique work of art which is not only beautiful but also practical and extremely durable.✓ The warp refers to the vertical strands running up and down a rug.✓ These are vital to the rug's structure because the knots are tied to the warp.✓ The wefts are also placed between them in order to keep the knots in place.✓ The loose ends of its warp are tied together to form the fringe of a rug.✓ Before and after each row of knots the weft strand is passed through the warp and combed and beaten down.✓ This compacts the row of knots and creates a tight structure.✓ (10)

4.3 4.3.1 Stainless steel is the perfect countertop material to use in kitchens where performance is important.✓ It is non-corrosive✓and heatproof.✓ Stainless steel easily wipes clean✓ and is hygienic.✓Brushed steel wears well.✓ The polished version can scratch.✓ It forms a noisy surface. Curved shapes are difficult to obtain.✓

4.3.2 Granite is the best option.✓ It is denser than marble✓ and heatproof.✓ The cool temperature of granite is ideal for making pastry.✓ Its hard surface does not chip with continued use.✓ It is hygienic✓and easy to wipe clean when it has been polished to a shiny surface.✓ Unlike marble, granite does not stain.✓

(2 × 5) (10)

TOTAL SECTION B: 50
GRAND TOTAL: 200

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