



**FACULTY ART DESIGN AND ARCHITECTURE  
2014 November**

**Main Assessment**

DEPARTMENT OF INTERIOR DESIGN

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**MODULE NAME** : Theory of Materials and Finishes 1  
**MODULE CODE** : IDMF1B1  
**DATE** : 5 November 2014  
**DURATION** : 180  
**TIME** : 08:30-11:30  
**TOTAL MARKS** : 150

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**ASSESSOR(S)** : Miss G Di Monte  
**MODERATOR(S)** : Mrs I Prinsloo  
**NUMBER OF PAGES** : 4

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**INSTRUCTIONS TO CANDIDATES:**

- Write neatly and legibly.
  - **Answer all of the questions.**
  - You may clarify your answers with sketches.
  - Structure your answers by using appropriate headings and sub-headings.
  - The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.
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**QUESTION ONE**

- 1.1. What does a screed comprise of and what is its function? (5)
- 1.2. Name 3 mechanical finishes for concrete. (3)
- 1.3. Name 1 chemical finish for concrete. (1)

- 1.4. Why is it necessary to reinforce concrete with steel? (4)
- 1.5. Where, in terms of building components, is it necessary to reinforce concrete with steel? (3)
- 1.6. What building components form part of a building's "substructure"? (2)
- 1.7. With regards to lintols:
- 1.7.1. What are lintols made of?
- 1.7.2. What forces do they endure?
- 1.7.3. Where are they used? (6)
- 1.8. What does the term "formwork" refer to when discussing concrete? (4)
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### **QUESTION TWO**

- 2.1. With the aid of a sketch and labels, show the composition of chipboard. (3)
- 2.2. Describe how medium density fibreboard is manufactured, and explain its resulting properties. (6)
- 2.3. Name a correct standard board product that would be suitable to use for each of the following applications: (10)
- 2.3.1. Carcasses for built-in cupboards
- 2.3.2. Ceilings in an office
- 2.3.3. Acoustic control
- 2.3.4. Wall cladding
- 2.3.5. Notice boards
- 2.3.6. TV unit shelving
- 2.3.7. An office desk top
- 2.3.8. A seat and back for a chair
- 2.3.9. A lightweight exhibition stand
- 2.3.10. A hollow-core bedroom door
- 2.4. Explain the composition of plywood. (3)
- 2.5. What are the characteristics of plywood? (3)
- [25]
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### **QUESTION THREE**

- 3.1. What are the properties that differentiate ferrous from non-ferrous metals? (6)
- 3.2. Identify one non-ferrous metal, and give two properties that make it suitable to use for water reticulation in a building. (3)

- 3.3. Name 3 mechanical finishes that can be applied to metals. (3)
- 3.4. Name and discuss 'joining methods' of metals as it relates to:  
3.4.1. Permanently joining metals, and  
3.4.2. Temporarily joining metals. (6)
- 3.5. Name two (2) non-ferrous metals commonly used for building purposes (not mentioned in 3.2). (2)
- 3.6. What is an alloy? (3)
- 3.7. Which forming method will be used in the manufacture of a stainless steel kitchen sink? (1)
- [24]
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#### **QUESTION FOUR**

- 4.1. Draw and explain the difference in timber planks that have been radially cut (quarter cut) to those that have been plain sawn (through and through sawn). (8)
- 4.2. What are the reasons for applying finishes to timber? (Give 2 main reasons, with 2 sub reasons for each). (3)
- 4.3. Choosing a **finish** to apply to timber depends on 3 criteria. Name these. (3)
- 4.4. List information necessary to provide when specifying timber (6x0.5). (3)
- 4.5. Name 4 traditional and 4 modern finishes to add to timber to prevent moisture damage (8x0.5). (4)
- 4.6. What is meant by 'panel matching'? (2)
- [23]
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#### **QUESTION FIVE**

- 5.1. List the three categories of stone according to their geological formation. (3)
- 5.2. Explain how each of these categories of stone are formed. (3)
- 5.3. What stone is most appropriate to specify for a kitchen top and why? (2)
- 5.4. Discuss three tile adhesives. (6)
- 5.5. Discuss the composition and life-cycle of a ceramic product (10x0.5). (5)
- 5.6. What can a designer specify at an entrance to a shop to protect the granite floors? (1)
- 5.7. Discuss PEI rating 1 and PEI rating 5. (4)
- 5.8. What does 'vitrification' mean in relation to ceramics? (3)
- 5.9. What is the correct procedure that must be followed when doing tile layouts for large floor areas to prevent the lifting and breaking of floor tiles due to thermal movement? (5)
- [32]
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**QUESTION SIX**

- 6.1. What is the function of 'lining paper' and how is it applied to a wall? (3)
- 6.2. Vinyl wall covering is used extensively in the interiors of offices. What makes this preformed wall covering so suitable for this application? (6)
- 6.3. What does the term 'offset match' imply with regards to pre-formed wall coverings? (2)
- 6.4. How should newly plastered walls be prepared for wall coverings? (3)
- 6.5. Name 4 disadvantages of using pre-formed wall coverings. (4)
- [18]

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**TOTAL** **150**