



**FACULTY ART DESIGN AND ARCHITECTURE
2015 November**

Main Assessment

DEPARTMENT OF INTERIOR DESIGN

<u>MODULE NAME</u>	:	Theory of Materials and Finishes 1
<u>MODULE CODE</u>	:	IDMF1B1 / ITM 111
<u>DATE</u>	:	02 November 2015
<u>DURATION</u>	:	180 minutes
<u>TIME</u>	:	08:30-11:30am
<u>TOTAL MARKS</u>	:	150

<u>ASSESSOR(S)</u>	:	Ms R. Nixon; Ms G. Di Monte
<u>NUMBER OF PAGES</u>	:	4

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.
 - Write your name on the question paper as well.
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QUESTION ONE - CONCRETE

- 1.1. What does a screed comprise of (1), and, what is its function (1)? (2)
- 1.2. Name four mechanical finishes for concrete. (4)
- 1.3. Name two chemical finishes for concrete. (2)
- 1.4. Discuss the term 'reinforced concrete'. Remember to discuss the materials used for this. (4)
- 1.5. In terms of super-structure, name two building components where you find reinforced concrete? (2)
- 1.6. What will occur when adding an aerator to a concrete mix? (1)
- [15]
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QUESTION TWO – MAN-MADE BOARDS

- 2.1. Describe how medium density fibreboard is manufactured. (6)
- 2.2. Name a standard board product that would be suitable to use for each of the following applications
(some answers may be repeated): (14)
- 2.2.1. Notice board
 - 2.2.2. Bedroom shelving unit
 - 2.2.3. Decorative wall panel
 - 2.2.4. A lightweight exhibition stand
 - 2.2.5. A ceiling
 - 2.2.6. A raised floor
 - 2.2.7. For a piece of furniture
 - 2.2.8. A door
 - 2.2.9. For concrete shuttering / formwork
 - 2.2.10. The carcass for a reception desk unit
 - 2.2.11. Cupboard backings
 - 2.2.12. For a school board
 - 2.2.13. For partitions
 - 2.2.14. For external cladding
- 2.3. Name four properties & characteristics of Gypsum board. (4)
- 2.4. Name four properties & characteristics of MDF. (4)
- 2.5. Name two finishes that can be applied to MDF. (2)
- [30]
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QUESTION THREE – METALS

- 3.1. Identify the non-ferrous metal (1), and name four properties & characteristics (4) that make it suitable to use for window and door frames. (5)
- 3.2. Identify the ferrous alloy (1), and name two properties & characteristics (2) that make it suitable for a kitchen sink. (3)
- 3.3. Name three heat-treatments used for metals. (3)
- 3.4. Which of these three is a process used to soften steel? (1)
- 3.5. Name three forming processes for metals. (3)
- [15]
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QUESTION FOUR – TIMBER

- 4.1. Draw (1x2) and explain the differences (2x2) in timber planks that have been plain sawn (through and through cut) to those that have been radially (quarter) sawn. (6)
- 4.2. Name four reasons for finishing timber. (4)
- 4.3. List information necessary to provide when specifying timber. (10)
- [20]
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QUESTION FIVE – STONE

- 5.1. Name the three categories of stone (1x3). Explain how each of the three categories of stone are formed (1x3). (6)
- 5.2. Briefly explain how granite counter-tops are made. (3)
- 5.3. List four reasons why granite is specified and used more often than marble? (4)
- 5.4. Why is sealant a necessary finish for granite? (2)
- 5.5. What stone is most appropriate to specify for a kitchen counter-top and why? (2)
- 5.6. What stone is most appropriate to specify for outdoor paving? (2)
- 5.7. Name four properties & characteristics of quartzite. (4)
- 5.8. Name two properties & characteristics of marble. (2)
- [25]
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QUESTION SIX – CERAMICS

- 6.1. What is a ceramic made of? (2)
- 6.2. Name three properties & characteristics of ceramics. (3)
- 6.3. What does 'vitrification' mean in relation to ceramics? (3)
- 6.4. Name (1x3) and explain (1x3) three tile adhesives. (6)
- 6.5. Discuss what terracotta is (1), and name two properties & characteristics of this material (2). (3)
- 6.6. Discuss what vitreous china is (1), and name two properties & characteristics of this material (2). (3)
- 6.7. Name the four technical characteristics (other than for e.g. chemical resistance) that you as a designer must look out for when specifying tiles. (4)
- 6.8. What are masonry bricks made of? (1)
- [25]
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QUESTION SEVEN – WALL PAPER

- 7.1. What is the function of 'lining paper'? (2)
- 7.2. How is lining paper applied to the wall? (1)
- 7.3. How is standard wallpaper manufactured? (5)
- 7.4. Vinyl wall covering is used extensively in the interiors of offices. What makes this pre-formed wall covering so suitable for this application? (6)
- 7.5. Name any six types of wall coverings available. (6)
- [20]
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TOTAL **[150]**