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| Question Paper Code : 37014 |
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B.Arch. DEGREE EXAMINATION, JANUARY 2014.

First Semester

AR 6103 – BUILDING MATERIALS – I

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention any two soil stabilizers.
2. Define bulk density of soil.
3. Differentiate fat lime and hydraulic lime.
4. Define Calcination.
5. Write a brief note on acid test on lime.
6. Write any two types of treatments on Bamboo.
7. List the advantages of using bamboo as a building material.
8. What are the disadvantages of straw-bale.
9. What is meant by dressing of stone?
10. Mention the advantages of artificial stones.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Describe the basic characteristics of soil. (8)
- (ii) Explain in detail, the need and types of soil stabilization. (8)

Or

- (b) Enumerate the types of mud wall building and its treatment methods.

12. (a) Give a detailed account of the precautions to be taken during handling of lime.

Or

- (b) Give a sketch of a continuous flame kiln and explain its working.
13. (a) Explain in detail the anatomy and properties of Bamboo - a building material.

Or

- (b) List out the types of roofing materials generally used and mention their applications in cost effective construction.
14. (a) Explain in brief about pest and insect proof treatments given to straw bales.

Or

- (b) Explain in detail about Plastering of straw bale walls.
15. (a) Discuss in detail the methods of preservation of stone.

Or

- (b) Write short notes on; Stone veneering and Deterioration of Stones.
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Question Paper Code : 57043

B. Arch. DEGREE EXAMINATION, MAY/JUNE 2016

First Semester

AR 6103 – BUILDING MATERIALS - I

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. List any four types of soils.
2. What is soil stabilization ?
3. Briefly list and classify lime.
4. What is Lime putty ? State its uses.
5. Sketch the anatomy of Bamboo.
6. Write any four classification of rocks.
7. What is seasoning in stones ?
8. Write any two uses of Bamboo in structure of building.
9. Explain briefly the method of quarrying of stone.
10. Write any two types of stone based stabilizers.

PART – B (5 × 16 = 80 Marks)

11. (a) Explain the following :
- (i) Preservation of stones (8)
 - (ii) Testing of stones (8)

OR

- (b) (i) What are common building stones and write their uses ? (8)
- (ii) What is Stone Veneering ? (8)

12. (a) Discuss the different types of Mud wall building and various techniques used for protecting the surface. (16)

OR

- (b) Discuss the manufacturing process of fat lime. (16)

13. (a) Discuss and compare the different types of Lime and write the applications of lime. (16)

OR

- (b) Explain the properties, characteristics and uses of Bamboo. (16)

14. (a) Explain the applications of various rural materials used for the walls, roof, floor, plastering, columns, roof covering material with sketches. (16)

OR

- (b) Discuss the application of straw bales in rural houses. (16)

15. (a) Discuss few important applications of the rural roofing materials which is used at any regional context. (16)

OR

- (b) Describe how stone plays an important role in traditional buildings ? (16)

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Question Paper Code : 71386

B.Arch. DEGREE EXAMINATION, APRIL/MAY 2017.

First Semester

AR 6103 — BUILDING MATERIALS — I

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name any two stabilizers used in soil stabilization.
2. How do you classify soils based on particle sizes?
3. What are the characteristics of Lime?
4. What is Lime Putty and how is it prepared?
5. Highlight the need to preserve bamboo poles and mention any two methods of bamboo preservation.
6. Mention any two applications of reeds in building construction.
7. What are the structural capabilities of straw bale walls?
8. Classify rocks based on their geological formation.
9. What are the different methods of quarrying stone?
10. What are the advantages of natural stones over artificial stones?

PART B — (5 × 16 = 80 marks)

11. (a) What is meant by soil stabilization and explain the different methods of soil stabilization. (16)

Or

- (b) (i) Elaborate on the properties of soil that are to be considered in the construction of buildings. (8)
- (ii) “Water is the greatest enemy of earthen houses” – Explain. What are the precautionary measures that are to be taken for protection of mud wall buildings? (8)
12. (a) (i) Name the different varieties of lime that are used in the construction industry and where are they used in buildings? (8)
- (ii) Explain briefly on the impurities in limestone. (8)

Or

- (b) (i) Elaborate on the manufacturing process of Lime. (10)
- (ii) Write short notes on slaking. (6)
13. (a) (i) “Constructions using bamboo as main material have been found suitable for earthquake resistant buildings”. Substantiate with reference to properties of bamboo. (10)
- (ii) Explain the process of working with bamboo as a building material. (6)

Or

- (b) (i) Explain the application of cane as a roofing material. (10)
- (ii) Write short notes on application of coir as a building material. (6)
14. (a) (i) Explain the thermal behavior of a building constructed with straw bale walls and straw bale roof. (8)
- (ii) Highlight the design and construction challenges that are to be considered while using straw bale as a building material. (8)

Or

- (b) (i) Elaborate on the characteristics of a good building stone. (10)
- (ii) Write short notes on artificial stones. (6)

15. (a) How do you choose stones for various applications and explain the different testing of stones for its strength, properties, durability and quality?

Or

- (b) Write short notes on the following :
- (i) Application of stones in buildings. (8)
 - (ii) Deterioration of stones. (8)

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Question Paper Code : 77013

B.Arch. DEGREE EXAMINATION, APRIL/MAY 2015.

First Semester

AR 6103 — BUILDING MATERIALS – I

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the different types of soils?
2. Brief about the ways to protect mud wall building.
3. Write the comparison of fat and hydraulic lime.
4. What is lime putty? Where it is applied?
5. What are the properties of bamboo as a building material?
6. Draw the cross section of bamboo showing the anatomy.
7. How fire proofing can be done in straw bale?
8. How plastering is done in straw bale walls?
9. What is stone veneering?
10. Name few artificial stones.

PART B — (5 × 16 = 80 marks)

11. (a) Explain with illustrations the different types of mud wall buildings and its protection with sketches.

Or

- (b) Explain in detail the different types of soil stabilizers, its characteristics and principles.

12. (a) Elaborate the different manufacturing process of lime and its types.

Or

(b) Elaborate on the precautions in handling and storing lime and its uses.

13. (a) Discuss in detail how processing and harvesting of bamboo is done.

Or

(b) Discuss in detail the application of bamboo as a roofing material with a case study.

14. (a) "Straw as a building material"- substantiate the statement with necessary details and examples.

Or

(b) Discuss in detail about the straw bale roof with illustrations.

15. (a) Explain in detail about the common building stones, applications and uses.

Or

(b) Explain in detail the deterioration and preservation of stones in building materials.

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Question Paper Code : 80067

B.Arch. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

First Semester

AR 6103 — BUILDING MATERIALS – I

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name any two types of soils used in building construction.
2. What is soil stabilization?
3. Compare Fat lime and hydraulic lime.
4. What is hardening of lime?
5. What are the bamboo species available in Tamilnadu?
6. Write any two strength properties of Bamboo.
7. Write any two methods for preservation of stones.
8. Write the classifications of rocks.
9. What are the advantages of stones as a building material?
10. How is plastering done for straw bale walls?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the following :
 - (i) Seasoning of stones. (5)
 - (ii) Quarrying of stones. (5)
 - (iii) Testing of stones. (6)

Or

- (b) Discuss the application of various types of stones in buildings and their uses with case studies and sketches.

12. (a) Discuss the manufacturing process of fat lime and hydraulic lime and their uses.

Or

- (b) Discuss the precautions in handling and uses of lime.

13. (a) Explain the following :

- (i) Anatomy of Bamboo (4)
 (ii) Treatment and preservation of Bamboo (4)
 (iii) Advantage and application of Bamboo. (8)

Or

- (b) Explain the application of various rural building materials like Thatch, grass and bamboo with case studies and sketches.

14. (a) “Straw bales is a sustainable building material” – Explain with case studies and sketches.

Or

- (b) Explain the process of strawbale construction with neat sketches.

15. (a) (i) Discuss the different types of stone dressing and their applications. (12)
 (ii) Give any four examples of stone buildings of ancient civilizations. (4)

Or

- (b) Discuss the following :

- (i) Stone veneering (4)
 (ii) Preservation of stones (8)
 (iii) Artificial stones. (4)

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Question Paper Code : 27652

B.Arch. DEGREE EXAMINATION, DECEMBER 2015/JANUARY 2016

First Semester

AR 6103 – BUILDING MATERIALS – I

(Regulation - 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What are the types of soils ?
2. Name any two types of stabilizers.
3. Brief the principles of soil stabilisation.
4. Brief on Slaking.
5. Sketch the anatomy of bamboo.
6. Name any two applications of straw bales.
7. What is stone veneering ?
8. Brief on quarrying of stones.
9. What is seasoning ?
10. Brief on the characteristics of stones.

PART – B (5 × 16 = 80 Marks)

11. (a) Explain the following :
- (i) Classification of rocks
 - (ii) Preservation of stones

OR

- (b) Stone is a Rural Building Material – Justify this statement with examples.

12. (a) Discuss the application of straw bales in buildings.

OR

- (b) Discuss the applications and uses of cane, coir and coconut in rural houses.

13. (a) Discuss the various types of mud wall construction and their surface protection.

OR

- (b) Discuss the fundamentals of soil science.

14. (a) Explain the classification of lime and compare fat lime and hydraulic lime.

OR

- (b) Explain the following :
- (i) Testing and storage of Lime
 - (ii) Lime putty
 - (iii) Precautions in handling and uses of lime

15. (a) Discuss the properties, characteristics and uses of Bamboo and methods of Preservation and treatment.

OR

- (b) Explain the following :
- (i) Dressing of stones
 - (ii) Testing of stones