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14ARC2.2

**Second Semester B.Arch. Degree Examination, Dec.2015/Jan.2016**  
**Materials and Methods in Building Construction – II**

Time: 4 hrs.

Max. Marks:100

**Note: 1. Answer any FIVE questions, selecting ONE full question from each module.**  
**2. All questions must be answered on the drawing sheets only.**

**MODULE – 1**

- 1 A dining area measuring (8m × 15m) on a beach front development is required to be roofed with Mangalore tiles on King post truss. Supported on 1½ brick thick walls on either sides draw plan and elevation in a scale of (1:20). Draw any two details in a scale of (1:20). (20 Marks)
- 2 a. Write a detailed note on G.I. and aluminium sheet as roof covering. Describe the method of laying and fixing them with the aid of sketches. (10 Marks)  
 b. Define the following terms used in pitched roof construction with sketches:  
 i) Ridge  
 ii) Valley  
 iii) Template  
 iv) Eaves  
 v) GABLE (10 Marks)

**MODULE – 2**

- 3 Explain in detail reinforced cement concrete? Properties of Reinforced concrete. Advantages and failure of reinforced concrete. (20 Marks)
- 4 Explain in detail:  
 a. Storage of cement (05 Marks)  
 b. Types of Portland cement. (15 Marks)

**MODULE – 3**

- 5 Explain with sketches the following :  
 i) Grillage foundation  
 ii) Raft foundation  
 iii) Isolated footing  
 iv) Combined footing (20 Marks)
- 6 Write short notes on :  
 i) Curing of concrete  
 ii) Sampling and testing of concrete  
 iii) Form work  
 iv) Chemical admixtures. (20 Marks)

**MODULE – 4**

- 7 Draw a plan (1:20) and sectional elevation (1:20) of RCC stairs to access a height of 3150mm with in a staircase room whose internal dimension are 4200mm × 2100mm with minimum 3 details. (20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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- 8** a. Write short notes with sketches on:
- i) Going of flight
  - ii) Stair case
  - iii) Pitch of stair
  - iv) Rise of flight
  - v) Necessary of cover in RCC stairs. **(10 Marks)**
- b. Draw to suitable scale the following fixing details of timber stairs:
- i) Tread and riser
  - ii) Landing platform
  - iii) Tread and riser to stringer
  - iv) Handrail & baluster to stringer. **(10 Marks)**

**MODULE – 5**

- 9** Draw to scale of (1:20) plan and elevation of (wrote iron) spiral stairs to access the terrace from first floor balancing of the house along with details. **(20 Marks)**
- 10** Explain through sketches, composite stairs
- i) Brick/stone
  - ii) Concrete / wood
  - iii) Steel / glass
  - iv) Steel / timber. **(20 Marks)**

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