Design a primary school building and draw its plan to scale and give schedule of joinery.

a) Describe unity and contrast in context with the architectural design of buildings.

b) What is the reverberation time and how can it be measured.

c) Explain acph in context with the ventilation in the buildings. Give typical values of acph for various occupancy buildings.

d) Explain various methods of building construction which will provide thermal insulation in buildings. Also draw neat sketches for each of them.

OR

What do you mean by the fire resistance of a building and how can it be measured, as per the N.B.C.? How the fire-safety in the public buildings can be ensured.

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Roll No .....

CE/FT-305

B.E. III Semester

Examination, December 2015

Building Design and Drawing

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) What are the recommendations of NBC for foundation of building?

b) The depth of the black cotton soil at a site is more than 3.6 M. Draw a suitable foundation section for two storied residential building showing details of the section.

c) Differentiate between parallel and oblique perspective.

d) What factors are considered to make energy efficient building? Discuss any two in detail.

OR

Draw an oblique perspective view of a flight of 6 steps each 1.6 m wide with a tread of 30 cm and rise of 20 cm. Assume suitable position and height of the observer.

2. a) What are building elements describe any two with figures.

   b) Describe two types of windows.

   c) Describe the methods by which how circulation can be achieved in building.

   d) What are the fire safety measures in residential building?

OR

Plan and draw to a suitable scale a residence for post post-master with the following areas.

Drawing cum dining hall	-	20 sq.m
Bed room -2nos.	-	12.0 sq.m each
Front and floor verandahs	-	2.0 m wide
Kitchen cum store	-	15.sq.m
Study cum office room	-	12 sq.m

Provide suitable porch, passage, toilets etc. Good foundation is available at 1-0 m below ground level. Draw plan, elevation suitable section. Use R.C.C flat roof.

3. a) List out the provisions of National building code. Elaborate few important provisions.

   b) Define importance of Building Byelaws and its Implementation.

   c) What are the principles of planning?

   d) Enumerate and explain the principle of composition.

OR

Plan and draw to a scale of 1:50, a primary school building with the following requirements.

a)	Five classrooms	= 50 m^2
b)	Principal's chamber	= 26 m^2
c)	Staff room	= 30 m^2
d)	Store room	= 35 m^2
e)	Two toilet units separately for	= 15 m^2 each boys & girls
f)	A hall for cultural activities	= 200 m^2

Passages and Verandahs may be provided suitably. Good foundation is available at 1.5m below G/L. Draw plan, elevation and one section showing various details. Use flat R.C.C roof.

4. a) Explain the "One" and "Two" pipe system of plumbing and state the conditions under which one is suitable to the other.

   b) The floor to floor height in a public building is proposed to be 4.50m. Design a suitable staircase for this building. The staircase hall measures 5m × 8m. Draw plan of the staircase and a reaction through one flight of the staircase.

   c) Draw a neat, labelled and proportionate diagram of an under - reamed pile foundation. Show all the details of stem, bulbs, spacing etc.

   d) Draw the dimensioned sketch of a door frame with double door along with the fastenings.

OR