2015-16
B.ARC.H. (V. SEMESTER) EXAMINATION
ARCHITECTURE
ISLAMIC ARCHITECTURE
AR-301

Maximum Marks: 60 Credits: 03 Duration: Three Hours

Answer all the questions.
Assume suitable data if missing.
Neat sketches shall have suitable weightage.

Q.No. Question M.M.

1 Explain various factors affecting and responsible for creating an architectural style at macro and micro levels with suitable examples especially with respect to Islamic architecture. OR Explain factors which are common in Islamic architectural styles in the world and factors which lead to differentiate them from one another in detail. [12]

2 Explain any ONE of the following Islamic architecture style in detail. Moorish architecture. Central Asian architecture. Chinese Islamic architecture. [12]

3 Explain Slave/Turkish or Mughal or Sikh dynasty architecture in detail with suitable examples of sketches of important buildings and their salient features. [12]

4 Explain Islamic art and decoration as used in various buildings and any ONE of the following Islamic architecture style in detail. Pathan dynasty architecture. Gujarat architecture. Bengal architecture. Rajput architecture. [12]

5 Write notes on any THREE of the following in Islamic architectural buildings Climatic control, earthquake resistance. Pietra dura. Basic socio-religious values of Islam, Id, ego, super ego and environmental affect on people. [12]
2015-16
B.A.R.C.H. (AUTUMN SEMESTER) EXAMINATION
B.A.R.C.H.-III YEAR
LANDSCAPE DESIGN
AR-303 N

Maximum Marks: 40 Credits: 03 Duration: Three Hours

Answer any four questions.
Draw sketches to support your answer.
Question no 5 is compulsory.

<table>
<thead>
<tr>
<th>Q.No.</th>
<th>Question</th>
<th>M.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Explain with sketches, the four components which form the theory of landscape architecture?</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>What are the different approaches which can be used in developing the minor landscape areas, which approach a landscape architect should adopt and why?</td>
<td>10</td>
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<tr>
<td>3.</td>
<td>Explain with neat sketches the principles of Landscape design, also explain the difference between hard and soft landscaping?</td>
<td>10</td>
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<tr>
<td></td>
<td>OR</td>
<td></td>
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<tr>
<td>3'.</td>
<td>Explain with plan and elevation four trees which are commonly found at Aligarh Muslim University, also give details of their size foliage and botanical name?</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>What are the commonly used elements in the gardens worldwide, explain how water as an element is used differently in gardens of three different countries?</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Draw the Landscape Plan and one section with proper scale and detailing, of a square to be developed at the intersection of road at Aligarh Muslim University. The size of the square is 10 m x 10 m.</td>
<td>10</td>
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</tbody>
</table>
2015-16
B.A.R.C.H. (5TH SEMESTER) EXAMINATION
B.A.R.C.H
INTRODUCTION TO INTERIOR DESIGN
AR-315

Maximum Marks: 40
Credits: 03
Duration: Three Hours

Question

Q.No.   | Question                                                                 |
--------|--------------------------------------------------------------------------|
1      | Explain what Interior scheme with colours you will adopt while designing the interiors of a beach resort. Justify your choice. |
2      | What are the elements/ principles of Interior Design and their applications in designing of spaces? |

OR

2'     | Explain various colour schemes with their psychological impact            |
3      | Design complete interior scheme for chairman chamber having a size of 6m x 8m and a height of 3.25m in department of Architecture and represent your scheme on 1:50 scale with complete specifications. |
Note: (i) Neufert's data and time saver standards are allowed but provision of these is not the responsibility of the department.
(ii) Good drafting shall carry weightage.
(iii) Assume any suitable data wherever desirable.

Design problem

A famous college of Aligarh having arts, commerce, social sciences, sciences and life sciences courses has very old library badly suitable to cater for present needs of the college and hence it desires to establish a well designed modern library in its place. Courses have U.G. P.G and Ph.D. programmes with an intake of (120, 60 and 25) each in arts, commerce and social sciences and (80, 40 and 20) each in science and life sciences respectively. Thinking you as an expert designer of libraries, it appoints you to suggest, guide, supervise and design this aforesaid project with suitable requirements and facilities. Site is of rectangular shape measuring 60m*90m located on east side of 8m wide internal road running north-south, short side of the site facing the road side.

For the above project provide the following

1. List of requirements with area chart. 06
2. Site plan with parking and landscaping. 06
3. Suitable plans to explain your design. 12
4. Section/sections
5. Elevations and/ views

Viva shall also be conducted to provide you opportunity to explain your concept/design. 08
2015-16
III YEAR B. TECH. V SEMESTER EXAMINATION
CIVIL AND ARCHITECTURE
SOIL MECHANICS
CE-312

Maximum Marks: 60
Credits: 04
Duration: Three Hours

Answer all the questions.
Assume suitable data if missing.
Notations used have their usual meaning.

Q.No. | Question                                                                                                                                                                                                 | M.M. |
------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
1 (a) | Enumerate various soil classification systems. Discuss any one of them in detail                                                                                                                                | 06   |
1 (b) | A 10 cm diameter and 39 cm long soil sample extracted from ground weighs 4.125 kg. A moist specimen of the sample weighs 12.7g and after oven drying 9.2g. Specific gravity of solids is 2.65. Determine the bulk unit weight, voids ratio, degree of saturation and dry unit weight of soil sample. | 06   |
OR    |                                                                                                                                                    |      |
1' (a)| List out various methods for determining the in-situ density of soil. Discuss any one of them in detail.                                                                                             | 06   |
1' (b)| A soil in its natural state has a voids ratio of 0.65 and a water content of 21%. Specific gravity of soil is 2.65. How many additional litres of water per cubic metre of soil is needed to make it a saturated soil with no change in voids ratio? | 06   |
2 (a) | Attempt any TWO of the following:                                                                                                                                                                           | 06   |
      | i) Define seepage stress. Obtain expressions to compute the variation in vertical effective stress when the direction of seepage is upwards and downwards.                                                      |      |
      | ii) Obtain the expression of critical hydraulic gradient. Discuss different kinds of failures due to upward seepage                                                                                       |      |
      | iii) Derive the expression to determine coefficient of permeability using falling head permeability test                                                                                               |      |

Contd....2.
3 (a) Precisely discuss the applications of Boussinesq vertical stress distribution equation.
(b) A rectangular area 5m \times 4m is uniformly loaded with an intensity of 100 kN/m². Calculate the vertical stresses at a point 5 m below one of its corners and centre of the loaded area.

OR

3 (a) Derive the relationship for vertical stress distribution of uniformly distributed circular area.
(b) Draw the isobars for 25% and 30% of point load (Q). Use Boussinesq method.

4 (a) With the help of neat sketch, discuss in detail about laboratory consolidation test.
(b) Over a saturated 7.5 m thick clay layer with drainage at top and bottom, the effective pressure in increasing from 0.05 kg/cm² to 4.5 kg/cm². The coefficient of consolidation of the clay layer is \(1.65 \times 10^{-3}\) cm²/s. Determine the degree of consolidation at 60 days and 450 days.

5 (a) Do any TWO from the following:
   i) Based on drainage conditions, elaborate the three different kinds of tests performed in a triaxial testing system.
   ii) The critical state friction angle of a soil is 28°. Determine the critical state shear stress if the normal effective stress is 200 kPa.
   iii) Discuss Mohr-Coulomb's failure criterion and its application to cohesive soils and cohesionless soils.
(b) Three samples of saturated clay were tested in a triaxial test under drained conditions. The applied stresses are as shown below:

<table>
<thead>
<tr>
<th>Cell Pressure (kPa)</th>
<th>200</th>
<th>400</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviator Stress (kPa)</td>
<td>530</td>
<td>1091</td>
<td>1620</td>
</tr>
</tbody>
</table>

Draw Mohr's circles and obtain the values of shear strength parameters.