2015-16
B.ARCHITECTURE (WINTER SEMESTER) EXAMINATION
B.ARC.
CONSTRUCTION AND MATERIALS-III
(AR-204)
CREDIT: 05

Max Marks: 40
Note
Answer all questions.
Neat drafting/sketching shall be given due credit
Assume suitable data and scale wherever necessary

1. Draw plan and section of a dog legged open well staircase for a common residential building when floor finish to terrace level height is 3200 mm. [12]

Or

Draw plan and sectional details of RCC two way slab measuring 3m*5m [12]

2. Draw details of any two the following on suitable scale [4+4]
   a) Reinforcement details of L type RCC column
   b) Single wooden floor
   c) Continuous beam over column
   d) Form work for rectangular column

3. Briefly discuss the following [5x4]
   a) RCC components
   b) Damp proofing in buildings
   c) Cement and Lime
   d) Various types of mortars
2015-2016
B.ARCH. (WINTER SEMESTER) IV SEMESTER EXAMINATION
PRE-MODERN/ WESTERN ARCHITECTURE
AR-210

Maximum Marks: 60
Duration: Three Hours

Answer all questions.
All Questions carry equal Marks
Draw neat sketches to support your answer.

1. Discuss in brief impact of social, religion and geographical conditions on development of Egyptian Architecture. (12)

2. Explain any three.
   a. Agora
   b. Ziggurat.
   c. Mastaba
   d. Vaults.
   e. Flying Buttress

3. Explain Architecture characteristics of Renaissance and Baroque Period. (12)

OR

3' Highlight architecture characteristics of Byzantine, Romanesque and Gothic period with timeline. (12)

4. Differentiate between Greek and Roman Architecture.? (12)

5. Discuss any two (12)
   a) Temple Of Parthenon.
   b) Hagia Sophia, Constantinople
   c) Roman Colosseum,
   d) Great Pyramid, Giza
B.Architecture Winter Semester, Examination
B.Arch. IIrd Yr.
Building Bye Laws and Regulations
(AR-212)

Credits: 03

Duration: Three Hours

Max Marks: 60

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

1. Describe the necessity of building bye-laws. Discuss the problems which are likely to be encountered in the absence of building bye-laws. [12]

OR

1' Discuss in brief U.P. Roadside Land Control Act.

2. Differentiate any Three of the following: [4 x 3]
   a) Ground Coverage and Total Built up Area
   b) Plinth Area and Carpet Area
   c) Incidental open space and shaft
   d) Urban space and Open space

3. Discuss the provisions in the building bye laws with respect to following:- [4 x 3]
   i) Minimum height and size of the Kitchen.
   ii) Exemption to open space.
   iii) Light and ventilation with respect to different climatic zones.

Contd.....2.
4. A Commercial Plot measuring 60m x 90m located on the Ram Ghat road subjected to the maximum ground coverage of 40% and FAR 2.50 with fullest land utilization and uniform floor areas. How many floors can be built on the plot?

Also calculate the total number of cars and area required for parking, if parking is provided
   a) At Basement.
   b) At Stilt floor

5. Write short notes on any Three of the following:
   a) Skip Floor.
   b) Means of Access.
   c) Classifications of Buildings
   d) Floating F.S.I. or transferable development rights (TDR).
Guest House

The authorities of a newly established university located in Lucknow wants to construct a “Guest House” inside its campus. The site measuring 40m X 65 m having approach road towards south on shorter side is located within the campus of university. You are requested to design the said Guest House with following design requirements:-

**Design Requirements:-**

1. Office
2. Reception + Entrance Lobby
3. Double Bed Rooms (with attach toilet) 20 nos 25 sq. m.
   As required
   20 sq m. each
   (including toilet)

4. Triple Bed Rooms (with attach toilet) 5 Nos. 30 sq m. each
   (including toilet)

5. Dining Hall + TV Lounge 80 sq. m.
6. Kitchen(including Pantry, wash, store) 30 sq. m.

7. Toilet for male and female 80 sq. m.

8. Store 30 sq. m.

9. Parking for 4 cars 10 two wheelers

**Drawings Requirements:-**

All Plans (1:100 scale) 25
Elevations 08
Sections 07
1 (a). Explain, in brief, the classification of survey? [04]

1' (a) Explain the purpose of orientation in plane table survey? [08]

1 (b). A 30 m steel tape was standardized on the flat and was found to be exactly 30 m under no pull at 66° F. It was used in catenary to measure a base of 5 bays. The temperature during measurement was 92° F and the pull exerted during measurement was 10 kg. The area of cross section of the tape was 0.08 sq. cm. The specific weight of the steel is 7.86 g/cm³. Take $a = 6.3 \times 10^{-6}$ per °F and $E = 2.1 \times 10^6$ kg/cm². Find the true length of the line.

OR

The following bearings were observed in running a closed traverse.

<table>
<thead>
<tr>
<th>Line</th>
<th>Fore bearing</th>
<th>Back bearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>N 75° 05' E</td>
<td>S 74° 20' W</td>
</tr>
<tr>
<td>BC</td>
<td>S 64° 40' E</td>
<td>N 63° 25' W</td>
</tr>
<tr>
<td>CD</td>
<td>S 14° 25' E</td>
<td>N 14° 25' W</td>
</tr>
<tr>
<td>DE</td>
<td>S 44° 50' W</td>
<td>N 44° 05' E</td>
</tr>
<tr>
<td>EA</td>
<td>N 55° 10' W</td>
<td>S 54° 55' E</td>
</tr>
</tbody>
</table>

At what station do you suspect local attraction? Determine the true bearings of the lines if the magnetic declination was 5° 10' east.

2(a). Define the following terms:
(i) Datum (ii) Bench Mark (iii) Line of Collimation (iv) Height of Instrument [04]

2(b). The following consecutive readings were taken with a dumpy level, the instrument was shifted after fourth, seventh and tenth readings:
2.650, 3.745, 3.835, 5.270, 4.645, 0.385, 0.960, 1.645, 2.840, 3.485, 4.680 and 5.265 m. The first reading was taken with the staff held upon a bench mark of elevation 132.135 m. Enter the readings in the level book form and reduce the levels by using height of instrument or rise and fall method. Also apply the usual arithmetical checks. [08]

3(a). What is the advantage of braced quadrilaterals over single and double chain of triangles? Justify your answer with neat sketches. [04]

3(b). What points will you keep in mind while selecting the site for base line of a triangulation system? [04]

3(c). List the various types of signals used in triangulation and describe any one of these. [04]

OR

3'(a). What is meant by reduction to centre? [04]

Contd......2.
3(b). From an eccentric station S, 12.25 m to the east of the main station B, the following angles were measured: $\angle BSC = 76^\circ 25' 32''$ and $\angle CSA = 54^\circ 32' 20''$. The stations S and C are to the opposite sides of the line AB. Calculate the true angle ABC, if the lengths AB and BC are 5286.50 m and 4932.20 m respectively.

4(a). What are different types of curves used in highways and railways? Describe each with neat sketches.

4(b). Two tangents intersect at a chainage of 2032 m. Calculate the necessary data for setting out a circular curve of 50 m radius to connect the two tangents if the deflection angle is $86^\circ 30'$. Take the peg interval as 5 m. Use the method of radial offsets from the tangent.

OR

4'(a). What is transition curve? When and why it is provided? Also write the advantages and conditions to be fulfilled by a transition curve.

4'(b). A compound railway curve ABC is to have the radius of arc AB 500 m and that of BC 350 m. The intersection point V of the straights is located at a chainage of 1385.48 m and the deflection angle is observed to be $45^\circ 30'$. If the arc AB is to have a length of 250 m, find the chainages of tangent points and point of compound curvature.

5 (a) Differentiate between loose and fast needle methods of theodolite traversing.

5 (b) Determine the gradient of the line AB from the following observations:

<table>
<thead>
<tr>
<th>Instrument Station</th>
<th>Point sighted</th>
<th>Horizontal angle</th>
<th>Vertical angle</th>
<th>Staff reading (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>upper</td>
</tr>
<tr>
<td>O</td>
<td>A</td>
<td>00° 00' 00&quot;</td>
<td>10° 05' 20&quot;</td>
<td>2.585</td>
</tr>
<tr>
<td>O</td>
<td>B</td>
<td>40° 10' 30&quot;</td>
<td>00° 00' 00&quot;</td>
<td>3.100</td>
</tr>
</tbody>
</table>

Take tacheometric constants K and C as 100 and 0 respectively.