2023-2024
B.ARCH. (V SEMESTER) EXAMINATION
B.ARCH.-III rd YR.
BUILDING BYE LAWS
(ARC3090)
Credits: 03

6476

Max Marks: 60   Time: Two Hours

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

1. a)   Describe the necessity of demolition of buildings and steps to be taken before the demolition.
    b)   Write down the parameters that govern in specifying FAR of any locality.

                                                                                                     [2x6]

                                            OR
    i)   Write down the minimum height, size and essential requirements of a kitchen as per the NBC.
    ii) Essential requirements of Boundary Wall as per the NBC.

2. Discuss the provisions in the building bye laws with respect to following: [3 x 4]
       i.   Minimum Size of ventilation shaft according to height of the buildings.
       ii. Width and length of means of access (Residential Buildings).
       iii. Area excluded from the covered area.

3. Differentiate any **Three** of the following: [3 x 4]
       a) Fire Blankets and Fire Buckets
       b) Floating FAR and Compensatory FAR.
       c) GRIHA and LEED
       d) Pathways and Cul de Sacs

4. i)   A Commercial Plot measuring 70m x 110m located on the Medical Road road subjected to the maximum ground coverage of 30% 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   [8]
    ii) Calculate the minimum aggregate area of opening having the room size of 5.0mx4.0m in Hot Climate and Warm- humid Climate   [4]

5. Write short notes on any **Three** of the following: [3 x 4]
       a)   Rights and ownership of Apartment owners.
       b)   Front and Side open Space of buildings
       c)   Applicability of Building Bye laws
       d)   Skip Floor
       e)   National Building Code

2023-24
B.ARCH. (III SEMESTER) EXAMINATION
ARCHITECTURE
ISLAMIC ARCHITECTURE
ARC3110

Maximum Marks: 60   **Credits: 03**   **Duration: Two Hours**

Answer all the questions.
Use of sketches to explain your answers carry due weightage.
All questions carry equal marks.

Q.No.	Question	M.M.
1	What do you understand of religious architecture and its utility specially in the context of Islamic architecture. Explain its characteristics in detail.	[15]
2	Explain any one important type of Islamic architecture of India in details	[15]
3	Explain any one important type of Islamic architecture style practiced outside India.	[15]
4	Write notes on any three of the following:	[15]

a. Thermal/climatic control in Islamic architecture

b. The concept of the unity of the God and equality of mankind in Islam

c. Earthquake resistant design in Islamic architecture

d. Pietro-dura and arabesque in Islamic architecture

e. Optical corrections as applied in Taj calligraphy

f. Relevance of Islamic architecture in present times specially in the context of sustainable architecture.

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Department of Architecture
Z.H. College of Engineering and Technology , AMU, Aligarh
Question Paper (Final Semester Examination, 2023-24 Session)
Class : Third Year , V'th Semester;
Subject : Specification, Estimation & Costing (ARC 3130)

Time Allowed - 2 Hours   Cr. 04   **Maximum Marks** – 60

Note – Please read questions carefully and answer as per the directions in questions.

Q. 1 - Write General specification for any two of the following items of work ? (6 Marks)
    (i) Foundation and Plinth ;
    (ii) Superstructure ;
    (iii) Finishing ;

Q.2 - Explain detailed specification for any one of the following ;   (6 Marks)
    (i) RCC work ;
    (ii) Brickwork ;

Q. 3 – Make development Plan for a 15.0 M X 25.0 M plot with following datas ;
    (i) Maximum Flood Level   = 98.50 M ;
    (ii) Gradient (slope) in pucca area   = 1 : 200 ;
    (iii) Gradient (Slope) in Katchcha area   = 1 : 100 ;
    (iv) Left and Right Side Offsets   = 3.0 M ;
    (v) Front and Rear side offset   = 5.0 M ;
       Calculate Levels at (i) Entrance Gate , (ii) to (v) all the four (4) corners of the plot &
    (vi) Plinth Level ;   (10 Marks)

Q. 4 - What is the purpose of analysis of rates ? Write systematic procedure to be followed in **"Analysis of Rates"**.   (8 Marks)

Q.5 - (a) Write systematic procedure for preparation of preliminary estimate ?   (5 Marks)

    (b) Prepare Preliminary estimate for a building with the following data particulars as on date ;   (10 Marks)
    (i) Plinth Area – 65.0 SqM
    (ii) Unit Rate – Rs 21,000/- per SqM ;
    (iii) Extra Floor Height – 0.95 M ;
    (iv) Unit rate for every 0.30 M additional Floor Height – Rs 421/- per SqM ;
    (v) Plinth Height – 0.80 M ;
    (vi) Extra for every 0.30 M additional Plinth Height – Rs 360/- per SqM ;
    (vii) Add extra for internal and external Water supply and Sanitary Installation
    (viii) Add extra for internal and external Electrical Installations ;

Q.6 - (a) Explain in detail the **"Methods of Estimation"** ?   (8 Marks)
    (b) Write procedure for preparation of Detailed Estimate ?   (7 Marks)
                      Or
    (b) Draw neat sketch of section of an **"Isolated Footing"** Or **"Load bearing Foundations"** and label them clearly showing dimensions of different sections , Ground Level, Formation Level and Plinth Level .   (7 Marks)

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2023-24
B.ARCH. (ODD SEMESTER) EXAMINATION
**ARCHITECTURE**
BUILDING SERVICES III (MECHANICAL)
ARC3150

Maximum Marks: 60   **Credits: 03**   **Duration: Two Hours**

Assume suitable data if missing.

Q.No.	Question	M.M.
1	Write short notes on: (Attempt any 04)	[5X4=20]
(a)	Natural Ventilation	
(b)	Class C Fires	
(c)	Quality of service in lifts	
(d)	Fieldbus in BAS	
(e)	Cooling system options	
(f)	Split air conditioning system	
2	Calculate the heat load and tonnage requirements of the room using the following data:	[10]
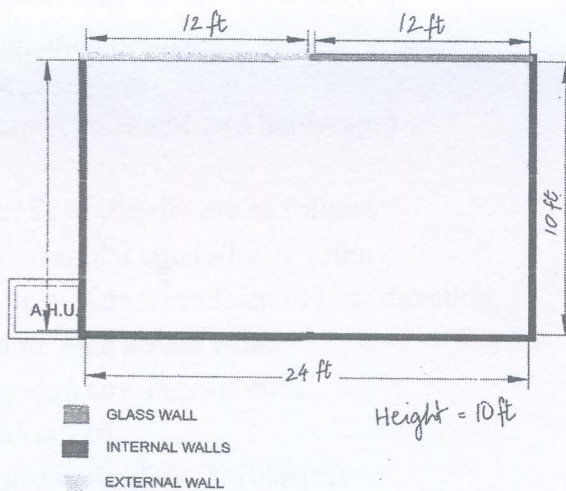
R (air)= 0.25, R(plaster)=0.12, R(brick)= 0.2, R(RCC)=.08, SC= 0.85, SCL= 43

3   Explain the following briefly: (Attempt any 02)   [5X2=10]
(a)   Hardware and software interfaces in building automation systems
(b)   Types of materials used for Ducting
(c)   Dry fire sprinkler system

4   What are the differences between Addressable and Conventional Fire Alram   [10]
    System

OR

4'   Explain Mechanically Assisted Ventilation Systems with the help of neat sketch.

5   Draw a labelled sketch of an escalator and explain its functioning.   [10]

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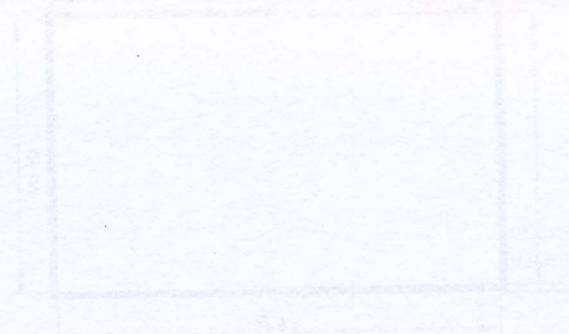
2023-24
B.ARCH. (Vth SEMESTER) EXAMINATION
B. ARCH-IIIrd Year
ARCHITECTURE DESIGN-IV
ARC-3650

Maximum Marks: 40   **Credits: 07**   **Duration: Six Hours**

Assume any missing data.

1   A Motel provides travellers with lodging and free parking facilities, typically a roadside hotel having rooms adjacent to an outside parking area or an urban hotel offering parking within the building. Such a motel is proposed on Nainital road. You are required to submit a design proposal for an occupancy of 60 people, focusing on the following:

  ➤ Typology of units for different occupancies
  ➤ Functional organization of floor/carpet area space, on the basis of anthropometric study, activity/circulation study etc.
  ➤ Space management and efficient services.
  ➤ Form and aesthetics of the structure.

The spatial requirements of the project are as follow:

i. Reception + Administration Area.
ii. Restaurant (with dining 50 persons capacity)
iii. Dwelling units/rooms
iv. Parking
v. Landscape (Softscape and hardscape)

The details of the site are as follows:

- Rectangular site (80m X 130m),
- Longer side faces front in East direction.
- 24 m wide access Road
- Ground coverage of 40%
- FSI is 120
- Parking (0.25 ECS/100sqm)

The submission requirements are as follows:

a) Site plan   10
b) Floor plan(s)   15
c) Elevation(s)   05
d) Section(s)   05
e) Concept and Viva voce   05

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2023-24
B.ARCH. (VIth SEMESTER) EXAMINATION
B. ARCH-IIIrd YR.
ARCHITECTUREAL DESIGN- V
(ARC-3660)

Maximum Marks: 40   **Credits: 07**   **Duration: Six Hours**

Answer all the questions.
Support your answers with neat sketches.
Notations used have their usual meaning.

TRANSITORY ACCOMMODATION:

It is well identified that lots of daily visitors to the cities come for a day or two either for their official or private work. It is obvious that for this transitory stay they do not carry any extra luggage i.e. bedding etc. These visitors generally belong to the H.M.I.G. or M.I.G. and are in a position to pay a reasonable amount for a hygienic well planned sophisticated transitory accommodation which include essential living facilities.

DESIGN CRITERIA:

The identification and rationalization of required facilities for a transitory period is most crucial in the design of such accommodation. The design should be an outcome of :

i) Identifying the rationalized, facilities to be provided to visitors for their short stay of a day or two.

ii) Functional organization of floor/carpet area space, on the basis of anthropometric study, activity/circulation study etc.

iii) Aesthetics of External as well as internal space arrangement of its individual components.

REQUIREMENTS:

Reception + Administration Area.
Single Bed Unit   08-10 Rooms
Double/ Triple Beds Unit   04-05 Rooms
One family (of 04 members) Unit   04-05 Rooms
Restaurant (with dining 50 persons capacity)
Park and parking (consists of 4 and 2-wheelars parking according to services provided and occupants)

THE SITE:

A rectangular site with dimension-	90x150m, frontage facing East direction
Road abutting to the site,	24m wide R/W
Location:	Maris Road, Aligarh
Area :	13500sqm.
Ground coverage;	40%
FSI	120
Parking	0.25 ECS/100sqm

DRAWINGS REQIRED:

Concept and philosophy (Evaluated through viva)	05
All Plans	10
Site Plan	10
Elevation(s)/Section(s)	05
Views /Sketches	10

2023-2024
B.ARCH. (AUTUMN SEMESTER) EXAMINATION
STRUCTURAL DESIGN – I
CEA - 3110

Maximum Marks: 60   **Credits: 04**   **Duration: Two Hours**

Answer all the questions.
Assume suitable data if missing.
Notations used have their usual meaning.
Use of IS : 456 – 2000 is Permitted

Q.NO.	Question	M.M	COs.
Q. 1	Design a rectangular simply supported beam for 6 m effective span which is subjected to a dead load of 25 kN/m and a live load of 15 kN/m. Use M 30 mix concrete and Fe 550 grade steel. Use span to effective depth ratio as given in clause 23.2.1 of IS 456. Assume width of the beam as 300 mm.	[15]	CO 1

OR

Q. 1′	Design a Rectangular Beam for an effective span of 6.0 m. The superimposed load is 60 kN/m and the size of the beam is limited to 300 mm x 600 mm. Use M 20 Mix and Fe 415 Grade Steel	[15]	CO 2
Q. 2(a)	Define development length and anchorage length.	[5]	CO 2
Q. 2(b)	Determine the shear reinforcement of the simply supported beam of effective span 5.0 m whose width and effective depths are 300 mm and 450 mm, respectively. Factored shear force is 250 kN. Use M 20 concrete and Fe 500 steel. Take area of steel as 1610 mm².	[10]	CO 2 CO 3

OR

Q 2'(b)	A RC wall footing has a width of 1.8 m and supports a 300 mm thick wall, as shown in the Fig.1 Check whether there is sufficient space for 20 mm dia. bars to develop the required bond, if they are stressed fully. Assume M 25 concrete and Fe 500 steel.	[10]	CO 1 CO 3

Fig.1
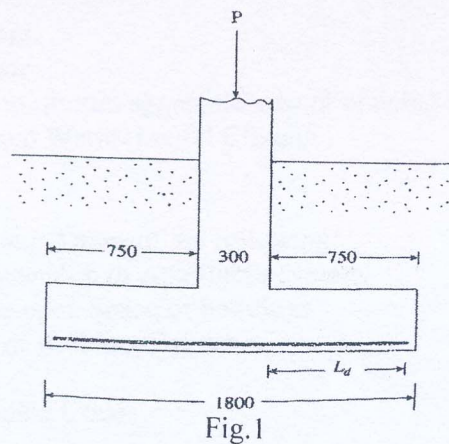
Q. 3 Design a floor slab for a room, with clear dimensions of 4.0 m × 9.0 m. The slab is resting on 230 mm thick brick walls. Assume live load of 3.5 kN/m² and dead load due to finish, partition, etc as 1.0 kN/m². Use M 20 concrete and Fe 500 steel. [15] CO 1

CO 3

Q. 4 A simply supported beam with overall depth of 500 mm and width of 300 mm is reinforced with 6–20 mm and 3–16 mm diameter bars in tension zone and 2–16 mm diameter bars in compression zone. Use 8 mm diameter steel bars as stirrups. Decide the cover for 2-hour fire resistance rating and severe condition of exposure. Using suitable clauses of IS code and with the help of a neat sketch, show in section the following: [15] CO 2

CO 3

(i)   Nominal Cover

(ii)   Clear Cover

(iii) Effective Cover

(iv) Placement of tension and compression steel

(v)   Anchorage of stirrups