

ARC2201  
ARCHITETURAL DESIGN-III

MODEL QUESTION PAPER  
(W.E.F 2022-2023 Admitted Batch)

Time: 10 Hrs.

Max. Marks: 50M

(Office Cum Residence)

An office cum residence is to be designed in a plot of 25mX40m. the shorter side is facing a 18m south road. An architectural office and family of six i.e grandparents, parents and children(a boy and a girl).

Following are the requirements of the Project:

For office space

a) Reception	10sqm
b) Principal Architects Room	30sqm
c) Drafting room for Six persons	50sqm
d) Conference room/ presentation room	60sqm
e) Library	30sqm
f) Pantry and dining space	30sqm
g) Toilet	6sqm
h) Rest room	10sqm
i) Store room	10sqm

For Residence

j) Drawing room	20sqm
k) Living room	40sqm
l) Dining room	20sqm
m) Kitchen with store utility	30sqm
n) 5 Bed rooms with attached toilets and walk in wardrobe each ranging from 20sqm to 40sqm (please decide according to the individuals need)	
o) Home theatre	50 sqm
p) Laundry	20 sqm

Space to be provided for Tool room (for garden equipment and house hold equipment)

And a servant's quarters of 40 sqm having a toilet and kitchen counter need to be provided.

Drawings to be submitted

a) Site plan	-- 1:200
b) Floor Plans	-- 1:100
c) Front Elevation and section	-- 1:100
d) Furniture layout for any of a chosen room	-- 1:50
e) Perspective	

ARC2202  
HISTORY OF ARCHITECTURE-III

MODEL QUESTION PAPER  
(W.E.F 2022-2023 Admitted Batch)

Time: 3 Hrs.

Max. Marks: 70M

Answer any FIVE Questions

All questions carry Equal marks

1. Write the following with neat sketches
  - a) Explain about the industrial revolution and the impact on building materials and construction during that period. 7 MARKS
  - b) Discuss about the contributions of Tony Garnier in late Renaissance. 7 MARKS
2. Write about the following:
  - a) Le Art Nouveau movement. 4 MARKS
  - b) Balloon Frame Structure. 4 MARKS
  - c) Plane Surfaces in America. 3 MARKS
  - d) Victor Horta H.P. Berlage. 3 MARKS
3. Discuss about the following:
  - a) Chicago School: Louis Sullivan. 7 MARKS
  - b) Organic Architecture. 7 MARKS
4. Le Corbusier's contribution towards architecture in India, support your answer along with details and examples. 14MARKS
5. Discuss about the works done by Walter Gropius. 14MARKS
6. Discuss about the works done by Louis I Khan with examples. 14MARKS
7. Discuss about the contributions of the following Architects to the field.
  - a) Frank O. Gehry 7 MARKS
  - b) I. M. Pei 7 MARKS
8. Discuss the theories and contribution of architect B. V. Doshi. 14MARKS

ARC2203  
BUILDING MATERIALS & CONSTRUCTION -IV

MODEL QUESTION PAPER  
(W.E.F 2022-2023 Admitted Batch)

Answer any ONE question from Part-1  
Answer any THREE questions from Part-2

Time: 3Hrs. Max.

Marks: 50M

Part – 1

1. Draft the details of false ceiling for an entrance lounge of a hotel of size 9.0M X9.0M. The drawings should include reflective ceiling plan, plan showing grid of metal framing system as per your ceiling design (Mention the standard sizes used for metal framing system), sections and any two details. 20 Marks
2. Draft or sketch, plan, section and any two details of large span roof truss. (Also mentions its standard sizes, and advantages of the roof truss from others. 20 Marks

Part-2

3. Write a short note on the following
  - a) Types of aluminium and wooden partitions 5 Marks
  - b) Triple layered tubular space frames 5 Marks
4. Briefly explain what are the different types of cladding materials used for buildings and structures in the market. State its advantages and disadvantages. 10 Marks
5. Write a short note on the following
  - a) Necessary of damp proofing for buildings and mention the general damp proofing materials used. 5 Marks
  - b) Which steel roof truss would you suggest for an industrial shed, Show some sketches. 5 Marks
6. Discuss why acoustical treatment is necessary for buildings (Mention the building Or spaces typology). Mention any four acoustical materials generally used for good absorption coefficient and noise control. 10 Marks
7. Write a short note on the following
  - a) Use of glass as building material in contemporary buildings (Discuss both advantages and disadvantages 5 Marks
  - b) Sketch the details showing fixing and connections of various steel sections. 5 Marks

ARC2204  
BUILDING SERVICES-II  
(ACOUSTICS)

MODEL QUESTION PAPER  
(W.E.F 2022-2023 Admitted Batch)

Time: 3 Hrs.

Max. Marks: 70M

Answer any FIVE questions

All questions carry Equal marks

1. Differentiate between Greek and Roman Amphitheatres with neat sketches and examples. 14 Marks
  
2. Write a short note on
  - a) Reverberation 3 Marks
  - b) Flutter Echo 4 Marks
  - c) Noise Reduction Coefficient 4 Marks
  - d) Attenuation 3 Marks
  
3. Explain the Term Sound Absorption and Sound Absorption Coefficient. Discuss in detail the characteristics of typical sound absorbers. 14 Marks
  
4. Write the following with neat sketches
  - a) Lindsay's wheel of acoustics 7 Marks
  - b) Classification of sound waves 7 Marks
  
5. Calculate the RT for a lecture hall 11M (L) X 13M (B) X 4.2M (H) which is 1/3 occupied and seating capacity is 85. All walls are masonry walls with 12MM with fibre board of solid backing with absorption coefficient 0.15, Flooring – sheet rubber hard surface 6MM thick with absorption coefficient 0.05, Acoustical Ceiling is 3.5M high from the floor level with absorption coefficient 0.60 and absorption coefficient of occupied and unoccupied seating is 0.60 and 0.45. 14 Marks
  
6. Explain the behaviour of a sound in an enclosed space. How do shape and volume of the room affect acoustical performance? 14 Marks
  
7. Discuss on any four Contemporary acoustical building materials currently in use for noise control along with its uses and its applications. 14 Marks
  
8. Briefly explain Acoustic requirements and space design requirements for conference and board rooms with neat sketches. 14 Marks

ARC2205  
CLIMATOLOGY-II

MODEL QUESTION PAPER  
(W.E.F 2022-2023 Admitted Batch)

Time: 3 Hrs.

Max. Marks: 70M

Answer any FIVE Questions

All questions carry Equal Marks

- 1 Write short notes on the following
  - a. Design of chajja in different regions of India. (7 M)
  - b. Write short notes on skylight (7 M)
- 2 Write short notes on the following.
  - a. Dehumidification (4 M)
  - b. Stack effect (4 M)
  - c. Evaporative cooling (3 M)
  - d. North light (3 M)
- 3 Elaborate on Sun control through various elements of building. (14M)
- 4 What do you understand by “passive methods of cooling”? Explain any two methods in detail with sketches. (14M)
5. List the different simulation program software and their application. (14M)
- 6 Briefly discuss the significance of GRIHA rating system. (14M)
- 7 Describe the basic concept of “vertical shadow angle”.  
Assuming suitable data about the position of opening and orientation of wall, explain how the concept can be used to design a horizontal shading device to protect a given opening from direct solar radiation. (14M)
- 8 Discuss the Effect of built environment on air movement and ventilation. (14M)

ARC2206  
DESIGN OF STRUCTURES -I

MODEL QUESTION PAPER  
(W.E.F 2022-2023 Admitted Batch)

Time: 3 Hrs.

Max. Marks: 70M

Answer any FIVE Questions  
All questions carry Equal Marks  
(IS 456: 2000 is allowed in Examination)

1.
  - a) Draw Stress-strain relationship for steel. [4]
  - b) Design a singly reinforced beam to carry a live load of 14.5 kN/m. The clear span of the beam is 5.5 m. The bearing at each end is 300 mm. Use M20 concrete and Fe415 steel. [10]
2.
  - a) A rectangular section 250 mm X 550 mm overall is to be designed as a doubly reinforced beam for a factored moment of 225 kNm. Use M20 and Fe415 steel. [7]
  - b) Design a cantilever beam with a clear span of 2.5 m which carries a superimposed load of 20 kN/m. Use M15 mix and mild steel. [7]
3.
  - a) What are the factors affecting shear strength of concrete? [4]
  - b) A rectangular beam of size 230 mm width and 450 mm effective depth is reinforced with four bars of 20 mm diameter. Determine the required vertical shear reinforcement to resist the factored shear force of 250 kN. Consider concrete of grade M25 and steel of grade Fe 415. [10]
4.
  - a) What are the general considerations for design of slabs? [4]
  - b) Design a simply supported RCC slab for a roof of a hall 4 m X 10 m (inside dimensions) with 230 mm walls all around. Assume a live load of 4 kN/m<sup>2</sup> and finish 1.0 kN/m<sup>2</sup>. Use M25 grade concrete and Fe415 grade steel. [10]
5.
  - a) Briefly discuss the behaviour of short columns. [4]
  - b) Design a column having on effective length of 4.75 m to support a factored load of 1650 kN. Consider the reinforcement ratio to be in the range of 1.5 and 2.0 percent and the effective cover to longitudinal steel of 55 mm. Use M25 grade concrete and Fe415 grade steel. [10]

6. Design a Reinforced concrete isolated footing for a column of size 450 mm X 450 mm transmitting an axial load of 1200 kN and uniaxial bending moment of 450 kNm at service state. Unit weight of soil is 19 kN/m<sup>3</sup>, Bearing capacity of soil is 150 kN/m<sup>2</sup> and angle of repose is 30°. Use M20 concrete and Fe415 steel. [14]
7. Design the Dog-legged reinforced concrete staircase for an office building. Given height between floor=3.2 m, riser=160 mm, tread=270 mm, width of flight=width of landing=1.25 m. Assume stair to be supported on 230 mm thick wall at the outer edges of landings. Use M20 concrete and Fe 415 steel. [14]
8. Write short notes on:
- (a) Limit state method [3]
  - (b) Briefly explain the type of loads and load combinations. [4]
  - (c) Soil Pressure under Footings [4]
  - (d) Loads on Stair Slabs [3]

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ARC2207

COMPUTER LANGUAGE PROGRAM – PYTHON PROGRAMMING

MODEL QUESTION PAPER

(W.E.F 2022-2023 Admitted Batch)

Time: 3 Hrs.

Max. Marks: 70M

**Common with other Engineering Branches**



ARC2208

COMPUTER LANGUAGE PROGRAM – PYTHON (LAB)

MODEL QUESTION PAPER

(W.E.F 2022-2023 Admitted Batch)

**VIVA – VOCE**

ARC2209  
INDIAN TRADITIONAL KNOWLEDGE  
MODEL QUESTION PAPER  
(W.E.F 2022-2023 Admitted Batch)

**NC**