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**Knowledge Resource & Relay Centre (KRRC)**


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AIKTC/KRRC/SoA/ACKN/QUES/2021-22 /

Date: 02/08/2022School: SoA-CBSGSBranch: SoASEM: VI

To,  
Exam Controller,  
AIKTC, New Panvel.

Dear Sir/Madam,

Received with thanks the following <sup>Reg.</sup> **Semester/Periodic** question papers from your exam cell:

Sr. No.	Subject Name	Subject Code	Format		No. of Copies
			SC	HC	
1	Architectural Building Construction			✓	
2	Theory and Design of Structures			✓	
3	Architectural Building Services			✓	
4	Humanities			✓	

Note: SC – Softcopy, HC - Hardcopy

(Shaheen Ansari)  
Librarian, AIKTC

SEMESTER - 6.

DATE - 13/04/22.

TIME - 11.00 am to 2.00 pm.

Sub: Architectural Building ServicesIV (BARC608)

Year: 3<sup>rd</sup>

Sem: 6<sup>th</sup>

Date:

Marks: 50

Passing: 20

Duration: 2 Hr

Note:

Section One is compulsory.

Write any three questions from Section two.

Assume suitable data wherever necessary.

Draw neat, well labelled sketches wherever necessary.

Q1 Write short notes with neat sketches on any 4 of the following. (20)

- a) Lift machine room
- b) Fire Dampers
- c) Static tank
- d) Bus bar
- e) Break pressure tank
- f) Smoke detectors

Q2. Enumerate the different types of Lifts as per their usage and give a schematic section through a standard lift pit, shaft and machine room. (10)

Q3 Explain water supply for high rise buildings. (10)

Q4 Enumerate the design requirements of staircase enclosures for Fire Safety for a high rise building as per NBC. (10)

Q5 Explain the electrical distribution in high rise buildings. (10)

Q6 Discuss wet Riser and Dry riser along with neat sketches. (10)

Semester - 6.

TOS .

DATE - 18/04/2022.

TIME - 11.00am to 1.00 pm.

(2 Hours)

(Total Marks :50)

N.B.: (1) Q.1 is compulsory. Attempt any two questions from Q.2 to Q.5

(2) Figures to the right indicate full marks

(3) Assume suitable additional data, if necessary and state clearly the same.

(4) Questions on RCC can be solved either by 'Limit State Method' or by 'Working Stress Method'

(5) Use of non-programmable scientific calculator is permitted.

Q.1 Write short notes on (any five) (20)

- Workability of concrete and chemical admixture
- Curing of concrete
- Long and short columns
- Precast concrete
- Compaction of Concrete
- Grid floor
- Constituents of cement

Q.2 (a) Explain one-way and two-way slab. (3)

(b) Design a One way simply supported slab for the following requirements:

Slab span = 4 m,

Live load = 4 KN/M<sup>2</sup>Floor finish = 1.0 KN/M<sup>2</sup>

The slab is supported by 230mm wide brick wall . Use M40 grade concrete and Fe 500 grade steel. Draw a neat sketch showing the details of reinforcement. (12)

Q.3 (a) Explain singly and doubly reinforced sections. (3)

(b) An RCC beam 400 mm x 700mm overall in section, is reinforced with 12 bars of 20 mm dia. in tension zone and 4 bars of 20 mm dia in compression zone with an effective cover of 25 mm. Assume M40 concrete and Fe 500 steel.

Calculate Moment of resistance of beam. (12)

Q.4 Design a footing for a column 300mmx 500mm to carry an axial load of 2500 KN. Assume safe bearing capacity of soil to be 300 KN/M<sup>2</sup>. Use M30 concrete and Fe 500 steel . Draw a neat sketch of design .DO NOT DESIGN FOR ONE WAY AND TWO WAY SHEAR (15)

Q.5 (a) Describe how shear reinforcements of beam are designed (3)

(b) Design a short column to carry an axial load of 4000 KN . Draw a neat sketch of design. Use M40 concrete and Fe 500 steel. (12)

SEMESTER 6 (FIRST HALF 2022)  
DATE — 12/04/2022 .  
TIME — 11.00 am to 1.00 Pm.

1A00116//TY B Arch (SEM-VI) (CBSGS)  
Subject (paper code) 10702//Humanities – VI

Time = 2 hours  
marks

Total marks = 50

- i) Part 1 and Part 2 are compulsory
- ii) All questions of Part 1 carry 5 marks each and Part 2 carry 10 marks each
- iii) Attempt four questions from Part 1 and three questions from Part 2

Part 1 (20 marks)

Solve any 4 out of 6 Questions (5 marks each)

- 1) What do you understand about the process of "urbanisation"? How does it change your everyday life in the city? Use examples to demonstrate your point.
- 2) Briefly discuss the 'push-pull factors' that cause rural-to-urban migration.
- 3) Informal markets play an important role in the Indian economy. Enumerate the statement giving suitable examples.
- 4) Explain any one positive impact of globalization on the COVID-19 pandemic in your home town.
- 5) Give examples of satellite / dormitory towns stating the primary city to which they belong and the nature of socio-economic transactions between the two and its implications.
- 6) Explain the role of public open spaces in ensuring urban health.

Part 2 (30 marks)

Solve any 3 out of 4 Questions (10-marks each)

- 7) In the wake of urbanization and migration in various cities of India, affordable public housing is a must. Choose a mass housing proposal in any city of India and discuss its appropriateness with respect to its urban context.
- 8) Discuss the role of public transport in addressing traffic congestion in your city by giving specific examples.
- 9) An old heritage structure built by the British was once a popular tourist spot within the city. However, due to ill-maintenance and neglect, people have abandoned visiting the spot. How would you advise the Municipality to restore and revive the area for future?
- 10) It has been observed within a hostel facility for an institution; that the recreational area that consists of a gymnasium, playground, and garden and indoor sports area is being used predominantly by men. Identify possible reasons for such disparity in its usage and suggest ways in which you would go about making it all-gender friendly. Conduct studies to understand the space usage during different times of the day and identify the patterns in which it gets occupied by different genders.

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SEMESTER 6.

DATE - 11/04/2022.

TIME - 11.00 am TO 02:00 Pm.

Subject (Paper Code) : 10701 // Architectural Building Construction VI

Duration : 3 hours

Marks : 50

- Note:
1. Question no.1 is compulsory
  2. Attempt any three from the remaining questions
  3. Draw neat sketches and give illustrations wherever necessary
  4. Write question nos. appropriately beside the sketches drawn and answer attempted.

- Q.1 An office floor of a multi storey structure having floor plate size of 18 m X 28 m excluding service cores and toilets to be designed using flat slab flooring system with floor height of 3.5 m.
- a) Draw plan at suitable scale showing columns, column strips and middle strips with dimensions (10) and also, one enlarged grid bound by 4 columns with reinforcement details.
  - b) Give part section through column and column strip showing reinforcement details. (10)
- Q.2 Explain advantages and disadvantages of Precast construction system and also describe different (10) precast concrete building components.
- Q.3 Explain Diagrid floor for a free-standing pavilion of size 24 M X 24 M.
- a) Draw key plan to proportionate scale. (05)
  - b) Reinforcement details of Diagrid Beams and Edge Beams. (05)
- Q.4 Explain with the help of neat sketches:
- a) Terracotta units in Hollow Slab (05)
  - b) Castone Floor units in Hollow Slabs. (05)
- Q.5 a) Explain with the help of neat sketches One-way ribbed floors. (05)
- b) Draw details at the junction of edge beam and one-way ribbed floor. (05)
- Q.6 Discuss measures you will take to resist punching shear in advanced floors. (10)