

THIAGARAJAR POLYTECHNIC COLLEGE, SALEM

Autonomous Final Semester 2020 Examinations

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

Reg. No. **STRUCTURAL DESIGN**

Year/Sem: III / VI (EVEN-III)

Time : 2 hrs

Date & Session: 23.09.2020/AN

Max. Marks : 50

Note: i) IS 456-2000&IS 800-2007 and Steel tables are permitted.

ii) Assume suitable data if necessary.

PART-A**(4 x 2 = 8 Marks)****Note: (i) Answer any FOUR questions. (ii) All the questions carry equal marks.**

- 1 What do you mean by characteristic strength of concrete?
- 2 Define moment of resistance.
- 3 What is torsional reinforcement in slab?
- 4 Mention the different forms of shear reinforcement provided for beams.
- 5 Define slenderness ratio for columns.
- 6 Specify the critical section for punching shear in an isolated RC footing.
- 7 Define shape factor.
- 8 What do you mean by tread and rise of a stair?

PART-B**(4 x 3 = 12 Marks)****Note: (i) Answer any FOUR questions. (ii) All the questions carry equal marks.**

- 9 Explain the purpose of providing reinforcement.
- 10 Differentiate between one way slab and two way slab.
- 11 Explain the principles of shear design.
- 12 How will you plan a staircase?
- 13 State the IS code provisions regarding the longitudinal reinforcements and lateral reinforcement in RC columns.
- 14 Explain isolated and combined footing with sketches.
- 15 Mention and draw any three shapes of steel compression members.
- 16 What is meant by middle strip and edge strip? Draw sketches.

PART-C**(3 x 10 = 30 Marks)****Note: i) Answer any THREE questions ii) All the questions carry equal marks.**

- 17 A simply supported beam of rectangular cross section of 230mm x 500mm overall size is reinforced with 4 numbers of 16mm \varnothing Fe 415 grade steel bars in the tension zone. M20 grade concrete is used. Calculate the moment of resistance of the section at the limit state of collapse. 10
- 18 Design a singly reinforced rectangular beam to carry an UDL of 30kN/m (inclusive of self weight) over an effective span of 8m for the limit state of collapse in flexure using M20 grade concrete and Fe 415 grade steel. 10
- 19 Design a simply supported one way slab for a clear span of 3.8m with 300mm walls. Use M20 and Fe 415 steel. Adopt live load of 5000 N/m² and a floor finish load of 500 N/m². 10

Contd....2

- 20 A simply supported rectangular beam has an effective depth of 600mm and breadth of 400mm. The beam is reinforced with 3 bars of 22mm dia as tension reinforcement at support. The beam is subjected to a factored shear force of 200 kN at support. Check the shear stress and design the shear reinforcement. M20 grade concrete and Fe415 steel grade are used. 10
- 21 Design a rectangular column to carry an axial load of 1500 kN using M20 and Fe415. Effective length of column is 3.1m. 10
- 22 Design a steel column using a single rolled steel I-Section to carry an axial load of 800 kN. Both ends of the column are restrained against translation and rotation. The actual length of the column between intersections is 8m. The yield stress of steel is 280 Mpa. 10
-

THIAGARAJAR POLYTECHNIC COLLEGE, SALEM

Autonomous Final Semester 2020 Examinations

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

Reg. No.

PROJECT MANAGEMENT

Year/Sem: III / VI (EVEN-III)

Time : 2 hrs

Date & Session: 24.09.2020/AN

Max. Marks : 50

PART-A

(4 x 2 = 8 Marks)

Note: (i) Answer any FOUR questions.

(ii) All the questions carry equal marks.

- 1 State the role of an architect.
- 2 What is arbitration?
- 3 Define work order.
- 4 State the types of tender.
- 5 State any two needs of project management.
- 6 Define slack.
- 7 Distinguish between receipt and voucher.
- 8 State the various types of banks.

PART-B

(4 x 3 = 12 Marks)

Note: (i) Answer any FOUR questions.

(ii) All the questions carry equal marks.

- 9 State the various stages for the fee collection.
- 10 Define an architect.
- 11 State any three salient features of architect's Act 1972.
- 12 Define tender document.
- 13 What do you mean by check measurement?
- 14 Differentiate event and activity.
- 15 State the Fulkelson's Rule for numbering and forming the network.
- 16 Explain Building Insurance scheme.

PART-C

(3 x 10 = 30 Marks)

Note: i) Answer any THREE questions

ii) All the questions carry equal marks.

- 17 Calculate the architects fee for a commercial complex worth of Rs. 10 crores. 10
- 18 Briefly explain:
 - i) Normal Services 5
 - ii) Special services 5
- 19 Explain role of council of architecture in India. 10
- 20 Explain briefly the procedure being followed in the preparation, Checking and Payment of bills for the work done. 10
- 21 The precedence relationship and durations of various activities of a project are as follows. Draw the network diagram and mark EST, EFF, LST, LFT for each activity. Locate critical path and Estimate the project duration. 10

Activity	A	B	C	D	E	F	G
Pre-activity	None	A	A	A	B	C & E	D & F
Duration in days	6	7	18	12	10	7	5

- 22 What are the various forms of deposits and explain any two types of deposits. 10

THIAGARAJAR POLYTECHNIC COLLEGE, SALEM

Autonomous Final Semester 2020 Examinations

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

Reg. No.

TOWN PLANNING

Year/Sem: III / VI (EVEN-III)

Time : 2 hrs

Date & Session: 25.09.2020/AN

Max. Marks : 50

PART-A

(4 x 2 = 8 Marks)

Note: (i) Answer any FOUR questions. (ii) All the questions carry equal marks.

- 1 Mention any two uses of surveying.
- 2 Classify the residential building.
- 3 What are the methods adopted for slum clearance?
- 4 What is town center?
- 5 What is meant by satellite town?
- 6 Define precincts.
- 7 Define floor space index.
- 8 What is meant by ribbon development?

PART-B

(4 x 3 = 12 Marks)

Note: (i) Answer any FOUR questions. (ii) All the questions carry equal marks.

- 9 Classify the three stages of town development according to Lewis Mumford.
- 10 What is sky scraper?
- 11 What are the necessities of master plan?
- 12 What is island?
- 13 What are the requirements of a good city road?
- 14 Define green belt.
- 15 What is meant by cul-de-sac streets?
- 16 State the maximum height of residential and public buildings.

PART-C

(3 x 10 = 30 Marks)

Note: i) Answer any THREE questions. ii) All the questions carry equal marks.

- | | |
|---|----|
| 17 Define zoning. Explain in detail about aspects of zoning. | 10 |
| 18 i) Explain about the classifications of residential buildings. | 5 |
| ii) What are the various agencies for housing? Explain any one. | 5 |
| 19 What are the causes and effect of slum? Explain. | 10 |
| 20 Explain in detail about the classification of parks. | 10 |
| 21 Explain the objects and various methods of traffic control. | 10 |
| 22 Explain the principles to be observed while framing building bye-laws. | 10 |