Total No. of Questions: 4]

SEAT No. : ____

P7372

[Total No. of Pages :3

[6184]-51
S.Y.B. Arch.
BUILDING CONSTRUCTION AND MATERIALS-IV
(2019 Pattern) (Semester-IV) (2201927)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***All questions are compulsory***
2) ***Answers to the two sections shall be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks***
5) ***Assume suitable data if necessary.***

SECTION-I

Q1) A 1800 long Balcony, projecting 900 mm is to be designed for a room that is 3000×4000mm in size. The balcony is located on the center of the 4000mm side. Draw the Following **[20]**

a) A key marking plan indicating the room slab and the Balcony slab along with the basic framing and spanning, showing how the balcony is supported at a scale of 1:50.

b) Detailed Plan of the Balcony and room slab with dimensions and annotations indicating the all required reinforcement details of ONLY THE BALCONY SLAB at a scale of 1:20.

c) Complete Section through the balcony and room slab indicating supporting beams and all reinforcement details of ONLY THE BALCONY SLAB with all relevant dimensions and annotations Scale 1: 10

OR

The common wall between two rooms of size 3200×3200 each, is to be removed and replaced with an sliding folding door system so that they can either be used as two rooms or combined into one room when required. Draw the following details. **[20]**

P.T.O.

a) Plan of the door showing the configuration of its shutters in Fully OPEN position. Location of shutters in CLOSED position shall be indicated in dashed lines. All relevant dimensions and annotations to be shown. Scale 1:10. Entire plan with both rooms is NOT to be shown only draw the relevant part plan showing the door. (Assume all walls arc 230 Thick)

b) Elevation of the door from any one side indicating the CLOSED position of shutters showing the hardware and All relevant dimensions and annotations to be given. Scale 1: 10

Q2) Answer ANY THREE Questions of the following **[15]**

a) Draw a neat detailed sketch section of the track and its fixing of a single track sliding door.

b) Draw sketch section showing the reinforcement details at the upper landing of a straight flight staircase when the supporting beam is at the outer end of the landing

c) Sketch a detail of the outer 135 degree corner of a Teak wood bay window in plan showing any one side fixed and the other openable.

d) Draw a sketch of ONE step of a typical precast closed spiral staircase

e) Draw a neat sectional detail sketch of the water proofing detail at the junction of a brick masonry parapet wall and RCC terrace slab.

SECTION-II

Q3) Answer ANY TWO of the following **[20]**

a) Write a short note on what is Light weight concrete. Enlist any three types of light weight concrete giving a brief description of each.

b) Enlist any four types Plastics used in Building construction. Describe the properties, uses / Applications of any two types of plastic in detail.

c) Write a short note on escalators & their application. Make a comparison of elevators and escalators listing the advantages and limitations of each.

Q4) Answer ANY THREE of the Following **[15]**

a) Write any three Advantages of using any type of Plastic pipes in water supply or drainage instead of any other available material

b) Mention any three advantages and two disadvantages of Ferro-crete.

c) Write a note the various problems caused by dampness / water in buildings and why water proofing is required.

d) List & describe any Three properties/ Characteristics of GLASS that make it such a popular building material.

e) Mention any two locations in a building where a sealants would be required and list any Three types / materials of sealants available in the market.

Total No. of Questions : 8]

SEAT No. :

P-7373

[Total No. of Pages : 4

[6184]-52
S.Y. B.Arch.
THEORY OF STRUCTURES - IV
(2019 Pattern) (Semester - IV) (2201929)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***Question No 1 and 5 are Compulsory in each Section. Any two out of Q. 2,3,4 in section I and Any two out of Q. 6,7,8 in section II need to be attempted.***
2) ***The Plan given at the end of question paper is for Q.1 and has to be attached with the answer sheet after marking answers on it.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data where necessary only.***
5) ***Use M 25 Grade concrete and Fe 500 grade steel.***
6) ***Every R.C.C Design should be accompanied by relevant Schedule and Reinforcement Sketch.***
7) ***Use of non-programmable Calculators and Standard Steel Tables of Plastic Design Allowed.***

SECTION - I

Q1) The plan of a Load Bearing Structure as shown in Figure 1 is attached at the end of question paper. It has some basic flaws in transfer of load to the walls. **Correct any five flaws** in the plan and attach the plan with answer paper, indicating the corrections, such that its a feasible Load Bearing Structure.**[11]**

Q2) Design Doglegged staircase for an office building. Flight is supported on 230mm wide beams at the outer edges of the landings Width of Flight = Width of Landing = 1250mm, each flight has 9 Treads, Riser is 160 mm Flight of 275mm each floor-to-floor Height = 3200mm Consider Floor Finish = 1.25 kN/m^2. Use 12 mm diameter bars for main steel and 8 mm diameter bars for distribution (secondary steel). **Write your answers in the Form of a Schedule**. **[12]**

P.T.O.

Q3) A room of residential building having clear dimensions 6.5 m × 3.5 m has a balcony of 1.5 m × 6.5 m with 1.5 m clear overhang. Design R.C.C. overhanging slab for the same if beams supporting overhang slab have 230 mm width. Consider Live Load = 4 kN/m^2 and Floor Finish = 2kN/m^2. Use 10 mm diameter bars as main steel, clear cover of 20 mm. Draw RCC sketch only. **Make schedule no need to draw reinforcement details**. **[12]**

Q4) Answer **any three** of the following : **[12]**

a) Sketch out conceptually the different ways in which a Balcony Projecting Slab can be supported.

b) Write Short Notes on Balanced Sections, Under- Reinforced Sections, Over-Reinforced Sections.

c) Explain Plastic sections & Compact sections

d) A Beam of size 230mm × 500mm is reinforced with 3no 20mm Bars. Calculate its Moment of Resistance.

SECTION - II

Q5) Design rectangular RCC Cantilever Beam of clear overhang length 2.4 m. These Beams are subjected to U.D.L of 34 kN/m including self weight of the beam. If the beams are fixed to 230 mm wall support at one end. **Design the beams for Flexure** using 20 mm dia bars. **Do Not Design for Shear**. Consider width of beam 230 mm. **[11]**

Q6) Design a Steel Girder using ISMB for a Clear Span of 3.25 m, udl (service load) of 22 kN/m, simply supported on 230mm wide supports on each side. Select a Section for Flexure. Classify the Section and Check for Shear Strength only. **[12]**

Q7) Design a Stanchion for the following conditions. Load = 800kN. The Height along ZZ direction is 8m with both ends fixed. The Height along YY Direction is 6m with both ends fixed. (Assume Stress = 120N/mm^2). **[12]**

Q8) Answer any three of the following : **[12]**

a) Explain with sketch : RCC details of a section of three span one way continuous slab.

b) What is to be done to avoid lateral bending in load bearing structure (explain with sketches)

c) Draw and explain structural elements of a Typical Factory Building in Section.

d) Draw the reinfocement Details of a i) Central spine beam staircase & ii) Folded Plate Staircase.

Classification of Sections into Plastic , Compact, Semi Compact Sections

Table 1. Limits on Width to Thickness Ratio of Plate Elements

Compression element			Ratio	Class of Section		
				Plastic (β_1)	Compact (β_2)	Semi-compact (β_3)
Outstanding element of compression flange	Rolled section		b/t_f	9.4ε	10.5ε	15.7ε
	Welded section		b/t_f	8.4ε	9.4ε	13.6ε
	Compression due to bending		b/t_f	29.3ε	33.5ε	42ε
Internal element of compression flange	Axial compression		b/t_f	Not applicable		
Web of an I-H-or box section [c]	Neutral axis at mid-depth		d/t_w	84ε	105ε	126ε
	Generally	If r_1 is negative:	d/t_w	$\frac{84\varepsilon}{1+r_1}$ but $\leq 42\varepsilon$	$\frac{105.0\varepsilon}{1+r_1}$	$\frac{126.0\varepsilon}{1+2\,r_2}$ but $\leq 42\varepsilon$
		If r_1 is positive :	d/t_w		$\frac{105.0\varepsilon}{1+1.5r_1}$ but $\leq 42\varepsilon$	
	Axial compression		d/t_w	Not applicable		

Note 1: Section having elements which exceeds semi-compact limits are to be taken as slender cross sections

Note2: $\varepsilon=(250/f_y)^{1/2}$

Note 3: Check webs for shear buckling in accordance when $d/t > 67\,\varepsilon$. Where, b is the width of the element may be taken as clear distance between lateral supports or between lateral support and free edge, as appropriate, t is the thickness of element, d is the depth of the web, D mean diameter of the element.

Note 4: Different elements of a cross-section can be in different classes. In such cases the section is classified based on the least favorable classification.

Note 5: The stress ratio r_1 and r_2 are defined as

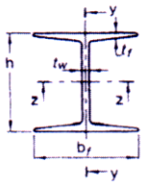
$r_1 = \frac{\text{actual average axial compressive stress}}{\text{design compressive stress of web alone}}$, $r_2 = \frac{\text{actual average axial compressive stress}}{\text{design compressive stress of overall section}}$

End Conditions and effective lengths for Stanchions

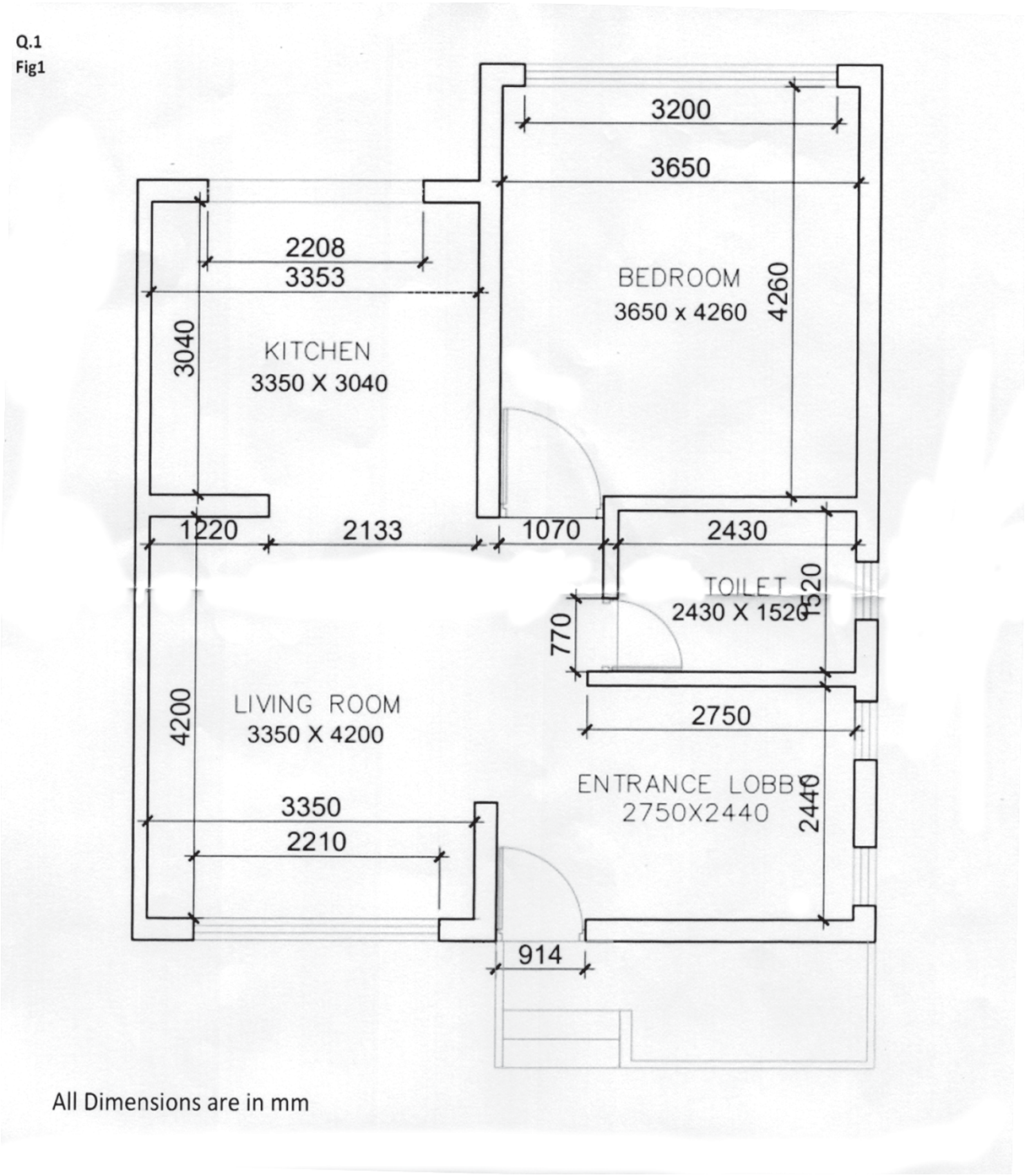
a. Both Ends Fixed Le= 0.65L
b. One End Fixed other end Hinged Le = 0.8L
c. Both Ends Hinged = 1.0L
d. One End Fixed One End Free Le=2L

Table 10 Buckling Class of Cross-Sections

IS 800 : 2007 (*Clause* 7.1.2.2)

Cross-Section (1)	Limits (2)	Buckling About Axis (3)	Buckling Class (4)
Rolled I-Sections 	$h/b_f > 1.2$: $t_f \leq 40$ mm	z-z y-y	a b
	40 mm $< t_f \leq 100$ mm	z-z y-y	b c
	$h/b_f \leq 1.2$: $t_f \leq 100$ mm	z-z y-y	b c
	$t_f > 100$ mm	z-z y-y	d d

Q.1
Fig1


3200
3650
2208
3353
BEDROOM
3650 x 4260
4260
3040
KITCHEN
3350 X 3040
1220
2133
1070
2430
TOILET
2430 X 1520
1520
770
4200
LIVING ROOM
3350 X 4200
2750
ENTRANCE LOBBY
2750X2440
2440
3350
2210
914
All Dimensions are in mm

▽▽▽▽

Total No. of Questions: 4]

SEAT No. :

P7374

[Total No. of Pages : 2

[6184]-53
S.Y.B. Arch.
BUILDING SERVICES-II
(2019 Pattern) (Semester-IV) (2201932)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat diagrams must he drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***
5) ***Answer all questions from Section-I and Section-Il in SEPARATE Answer Book only.***

SECTION-I

Q1) Answer any one of the following with necessary sketches

Explain following passive lighting strategies- Light shelf, monitor roof and sun pipe **[15]**

OR

Explain following wiring systems for electrification- Casing and capping, bus bar and Concealed wiring system.

Q2) Explain with neat and labeled sketches any four of the following: **[20]**

a) Vermicomposting and its two types

b) Direct and indirect lighting

c) Define luminance and illuminance

e) Explain Garbage Chute

f) Explain Fluorescent lamp

g) Lumen method for calculating number of fittings

P.T.O.

SECTION-II

Q3) Answer any one with necessary sketches. **[15]**

a) Explain any two methods of solid waste disposal at a town level

OR

b) What is day lighting? Explain daylight factor with its components through appropriate sketches.

Q4) Answer any four of the following with necessary sketches. **[20]**

a) Explain what is earthing and its types

b) List out difference between day lighting and artificial lighting

c) Explain under floor conduiting for offices

d) Explain Incinerator

e) Write short notes on Cables for low voltage systems

f) What are Circuit breakers

Total No. of Questions : 4]

SEAT No. : ____

P-7375

[Total No. of Pages : 2

[6184]-54

S.Y. B.Arch.

BUILDING CONSTRUCTION & MATERIALS - III

(2019 Pattern) (Semester - III) (2201918)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) A site office of size 3.5m × 2.5m needs to be constructed in RCC frame structure, having 1.2m wide projecting plinth in front along the longer side having steps to climb. The office is divided equally in two cabins with 150mm thick wall having two separate entry doors. Assume plinth as 600mm from ground level. Draw following details to suitable scale.

i) Draw key plan showing above features & draw the framing plan showing plinth beam, columns and foundation. **[10]**

ii) Draw detailed section through steps and plinth up to foundation.**[10]**

OR

b) A slab has to be designed for room of size 3m × 4.5m. Design the appropriate reinforcement details. The drawing has to be drafted at a scale of 1:20.

The drafted plan and 2 sections drawn should contain all the necessary dimensions & nomenelature. **[10+5+5]**

P.T.O.

Q2) **Draw well labelled sketches of <u>any 3</u> out of five given questions. [15]**

a) Sketch raft footing with necessary details.

b) Sketch appropriate eccentric foundation for a common compound wall.

c) Sketch detail section of sunk slab for W.C.

d) Sketch detail of lintel and Chajja for a window of Height 1.2 M.

e) Sketch of non-timber window for span 1.5m.

SECTION - II

Q3) **Answer <u>any two</u> from the following questions. [20]**

a) What are the classification of soil? Explain along with its types.

b) Explain along with sketch any four types of shallow foundation and its application in building construction.

c) Explain with sketch any 4 types of flooring along with its uses/application.

Q4) **Answer <u>any three</u> from the following questions. [15]**

a) What is water cement ratio? Explain properties of cement.

b) Explain in different types of failures in foundations.

c) Explain IPS flooring along with sketch.

d) What is additives and admixtures?

e) What is bulb of pressure? Explain it along with sketch.

f) What is workability of concrete?

▽▽▽▽

Total No. of Questions : 8]

SEAT No. : ____

P-7376

[Total No. of Pages : 3

[6184]-55

S.Y. B.Arch.

THEORY OF STRUCTURES - III

(2019 Pattern) (Semester - III) (2201920)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***Question No. 1 and 5 are Compulsory in each Section, Any two out of Q.2, 3, 4 in Section I and any two out of Q. 6, 7, 8 in Section II have to be solved.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data where necessary only.***
4) ***Use M 25 Grade concrete and Fe 500 grade steel.***
5) ***Use of non-programmable Calculators and Standard Steel Tables of Plastic Design Allowed.***

SECTION - I

Q1) A room of instituitional building having clear size 7 m × 3.4 m has to be covered with RCC simply supported slab resting on two beams having 230 mm width and 7 m length. Consider Live Load = 4 kN/m^2 and Floor Finish = 1.25 kN/m^2. Use 10 mm diameter bars as main steel, 8 mm diameter as distribution steel. Write the answer in the form of schedule. Do not draw RCC details. **[11]**

Q2) A fixed beam of length 6 m, carrying a UDL of 16 kN/m over its entire span. It is also carrying a central point load of 16 kN. Find support reactions and draw shear force and bending moment diagram. **[12]**

Q3) Design a simply supported RCC beam of length of 5 m .The beam is supporting slab load of 4.5 kN/m and wall load of 9 kN/m. Calculate the self weight of beam and design the beam for all the loads mentioned. For flexure use 20 mm dia bars and for shear use 8 mm dia 2 legged stirrups. Width of beam is 230 mm. Consider Wall thicknes of 230 mm. **[12]**

P.T.O.

Table 19 Design Shear Strength of Concrete, τ_c, N/mm^2

(*Clauses* 40.2.1, 40.2.2, 40.3, 40.4, 40.5.3, 41.3.2, 41.3.3 *and* 41.4.3)

$100\frac{A_s}{bd}$	Concrete Grade				
	M 15	M 20	M 25	M 30	M 35
(1)	(2)	(3)	(4)	(5)	(6)
≤ 0.15	0.28	0.28	0.29	0.29	0.29
0.25	0.35	0.36	0.36	0.37	0.37
0.50	0.46	0.48	0.49	0.50	0.50
0.75	0.54	0.56	0.57	0.59	0.59
1.00	0.60	0.62	0.64	0.66	0.67
1.25	0.64	0.67	0.70	0.71	0.73
1.50	0.68	0.72	0.74	0.76	0.78
1.75	0.71	0.75	0.78	0.80	0.82
2.00	0.71	0.79	0.82	0.84	0.86

Q4) **Answer any three of the following :** **[12]**

a) Explain the Advantages and Disadvantages of Continuous Beams.

b) Explain why for staircases and Balconies higher Live Load is prescribed.

c) Explain the term water cement ratio and it's importance.

d) Explain different types of Steel Used As Reinforcement in R.C.C.

SECTION - II

Q5) Design a Short Square Column to take a load of 700kN. Show your answer in the form of a Schedule and Sketch. Use 1% Steel. Find spacing of links. Make the schedule and draw a sketch of reinforcement details. **[11]**

Q6) A room of size 9 m × 3.4 m with 230 thick walls on all four sides is to be provided with a loft made of Block Boards 50mm thick to be supported on timber joists 3 in number along the shorter span. The Block Boards are to be finished with 12mm thick timber flooring slats. Design the middle Timber Beam Considering Indian Oak as the type of Timber and Live Load for an Office Building. Let d = 3b where d = depth of the beam, b = width of the beam. Indian Oak has permissible bending stress 12.16 N/mm^2, Modulus of elasticity 12.26 × 10^3 N/m^3, density 8.48 kN/m^3, permissible shear stress 1.67 N/mm^2 and permissible deflection is L/240. **[12]**

Q7) For a room having size 6 m × 4 m, RCC simply supported slab has to be designed using limit state method. Consider load acting on slab as 8 kN/m^2 including dead load, live load and floor finish. Slab is resting on 230 mm wide beams at four edges. No need for schedule or sketch. (Use 10 mm dia steel bars as main steel and 8 mm dia for distribution) **[12]**

Q8) **Answer <u>any three</u> of the following :** **[12]**

a) Explain Compressive Cube Test Procedure.

b) Write a short note on different Locations and Functions for Steel in R.C.C.

c) Explain span to depth ratios and limit state of serviciability.

d) Explain the difference in reinforcement placement between a Simple Supported slab and a Cantilever Slab.

▽▽▽▽

Total No. of Questions : 8]

SEAT No. : ____

P-7377

[Total No. of Pages : 2

[6184]-56
Second Year B.Arch.
BUILDING SERVICES - I
(2019 Pattern) (Semester - III) (2201923)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Answer to Section-I and Section-II should be written in two separate answer sheets.***
3) ***Neat diagrams muse be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION - I

Q1) What is function of a trap in drainage system? Explain any three types of traps used in building drainage system along with neat labeled sketches. **[20]**

OR

Determine the underground water tank size for a residential apartment building having 10 floors and 6 no. of 3BHK dwelling units on each floor. Building is located in an urban locality having intermittent water supply. Also,

a) Sketch the plan, section of UGWT with proper nomenclature.

b) Sketch the schematic layout of the water supply from communication lines to UGWT.

Q2) Write short notes with sketches with label wherever necessary (ANY Three)**[15]**

a) Single stack & double stack system

b) Types of valves (any two)

c) Combined drainage system

d) Manhole

e) Calorifier

f) Centrifugal pumps

P.T.O.

SECTION - II

Q3) Write short notes with sketches with label wherever necessary (ANY Three) **[15]**

a) Anti-Siphonage Pipe

b) Explain working of septic tank with neat sketches (plan and section)

c) Differentiate between pillar tap and bib tap

d) Butterfly valve

e) Instant gas geyser

f) Explain overhead water tank with neat sketches (plan and section)

Q4) Answer the following (ANY Four) : **[20]**

a) Explain safety devices for hot water supply for a house.

b) Write short note on ferrule connection with neat sketches.

c) Explain soak pit with neat sketches.

d) Explain non return valve with neat sketches.

e) Write short note on ventilation in drainage.

f) Explain solar water heater.

Total No. of Questions : 2]

SEAT No. :

P-7378

[Total No. of Pages : 3

[6184]-57

T.Y. B.A.R.C.H.

ARCHITECTURAL DESIGN - V (Enlodge)

(2019 Pattern) (Semester - VI) (3201945)

Time : 12 Hours (Enlodge 6 Hours)] ***[Max. Marks : 100***

Instructions to the candidates :

1) ***The design will be assessed as whole.***
2) ***Assume suitable data where ever necessary***
3) ***Line drawings of plan and section at a scale of 1:200 must be submitted at the end of day one. These drawings will be returned to the students on day 2 in Last one hour.***
4) ***All the drawings should be neat, clear self explanatory and with structural clarity in them.***

Way side Amenity on Expressway

As a part of its endeavour to provide world class infrastructure and related services for the highway network, NHAI (National Highway Authority of India) intends to develop traveller facilities such as wayside amenities (WSA) etc. at properties owned by NHAI.
The model Way side Amenity will provide pause points for the expressway travellers and the drivers for resting and refreshing themselves.
The design criterion of WSA is based on the providing universal access guidelines , creating an appropriate image, ease of circulation and access to all the amenities provided.

Site

The site chosen for this WSA is near Shirdi near the Samruddhi toll plaza,off the expressway.
The plot area of the project is 5400 sqmt. with a 12 mt. wide road on the West side of the plot.
Other details of the plot are as below.
1.Area of the plot - 60mt. × 90 mt. = 5400 sqmt.
2.Maximum ground coverage - 1350 sqmt. (25% of plot area)
3. Set back from road - 6 mt.
4.Set back from all other sides - 4.5 mt.
5.Maximum height of building - 15.00 mt

Area Required :

Facility	units	Area in Sq M	Number of users
Cafeteria and kitchen	1no		200 persons
Seating area		240 sq m	
Billing and coupon		10 sq m	

P.T.O.

Kitchen including Store and washing area		100 sq m	
Shops (packaged food,sundry items, general)	5n os	10sqm each	
Resting Facility			
Driver retiring room (Male) with attached toilet and bath facility	1no	115 sqm	5 persons
Driver retiring room (Female) with attached toilet and bath facility	1 no	115 sqm	5 persons
Retiring rooms (twin occupancy)	4 nos	25 sq m each	8 persons
General Facilities			
First Aid Room		15 sq m	
Help Desk		10 sq m	
Controller Room with clear view of the parking lot and highway		25 sq m	
Travellers waiting lounge		100 sq m	
VIP waiting lounge (Attached toilet facility)		80sq m	
Charging point kiosk	1nos	10 sqm	
Back office	**1 no**	**15 sq m**	
WSA manager cabin	1 no	10sq m	
Drinking Water Fountain			
General Toilet Facility			
Male - 4WC/ 6 urinals/6WHB Female - 5WC/5WHB			

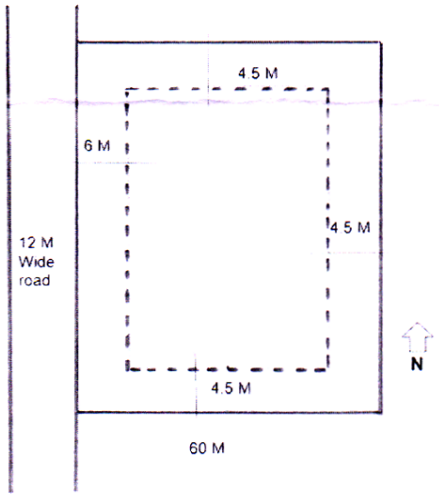
TOTAL SPACE PROGRAM: CARPET AREA 995 sq. mts.
Add 40% towards Circulation, Lobby, Public Toilets, Public Waiting Spaces, Service areas, Wall area etc. – 400 sq. mts.
Total Built up Area 1395 Sq. mts.

Parking Facility:

Ambulance Parking	1 no
Bus Parking	2 no
Four wheeler	6 nos
Two Wheeler (Staff)	10 nos
Charging point for EV	1 no

Final Drawing Requirements:	**Scale**
Site Plan	1:200
Floor Plans	1:100
Two sections through staircase and toilet	1:100
Building Elevations min 2 ns	1:100
Sketch View	

Site:



Total No. of Questions: 8]

SEAT No. : ____

P7379

[Total No. of Pages : 6

[6184]-59
T.Y.B. Arch.
THEORY OF STRUCTURES -VI
(2019 Pattern) (Semester-VI) (3201947)

Time :2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Q No 1 and Q No 5 are compulsory. Out of the Remaining three Solve any two in each Section.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data where necessary only.***
4) ***Use M25 Grade concrete and Fe500 grade steel and L.S.M of Design in R.C.C Problems.***
5) ***For Strcutural Steel Use Steel Fe410 (E250)whose fy=250N/mm^2. Use L.S.M of Design***
6) ***Every R.C.C Design should be accompanied by relevant Schedule and Reinforcement Sketch.***
7) ***Use of non-programmable Calculators Allowed.***
8) ***Use of Approved Standard Steel Tables in LSM and Wind Load Tables allowed.***

SECTION-I

QNo.1 Compulsory. Answer any 2 from QNo 2,3 and 4

Q1) Make the Framing Plan for the Given Ground Floor And First Floor. Framing Plan to be shown on Ground Floor Plan Only **[15]**

Show columns only on Ground Floor, Size colud be 230mm×450mm

Show all Beams. Restrict Depth of Beams to 600mm. Indicate depth on plan and the Span to Depth Ratio considered for type of beam

Show spans of all slabs and indicate Depth considered, Span to Depth Ratio. Slab depths to be restricted to 150mm. you need not show the beams and spans of Staircase Slab

No Columns to be provided within the Main Halls

Window Positions are indicative only and could be changed to adjust for Column Positions.

P.T.O.

Q2) A R.C.C Cantilever Retaining wall is detailed as below. **[10]**

a) Top width of stem - 270mm Width of base - 3100mm S.B.C of soil - 250 kN/m^2

b) Bottom width of stem - 520mm thickness of base - 500mm Density of soil - 17 kN/m^3

c) Height of stem - 5400mm Toe projection - 750mm Coefficient of friction - 0.6

d) Density of Concrete - 25 kN/m^3 Angle of repose - 28^o

Check stability of wall with respect to overturning and sliding

Q3) a) Distances to be observed for Plate Tearing Failure in a Bolted Connection. **[3]**

b) Design a Purlin for the Following Data: **[7]**

i) Spacing of Trusses = 4.25m, Span of Truss = 15m and Height of Truss = 2.5m

ii) Roof Covering = G.I. Sheets

iii) Spacing of Purlins = 1.35m

iv) Neglect Wind Load

Angle Section	Zezz in mm^3
ISA 75x50x6	6700
ISA 75x50x8	8000
ISA 75x50x10	10400
ISA 75x50x12	12700
ISA 80x50x6	7500
ISA 80x50x8	9000
ISA 80x50x10	11700
ISA 80x50x12	14400
ISA 90x60x6	11500
ISA 90x60x8	15100
ISA 90x60x10	18600
ISA 90x60x12	22000

Angle Section	Zezz in mm^3
ISA 100x65x6	14200
ISA 100x65x8	18700
ISA 100x65x10	23100
ISA 100x75x6	14400
ISA 100x75x8	19100
ISA 100x75x10	23600
ISA 100x75x12	27900
ISA 125x75x6	22200
ISA 125x75x8	29400
ISA 125x75x10	36300

Angle Section	Zezz in mm^3
ISA 125x95x6	23100
ISA 125x95x8	30600
ISA 125x95x10	37800
ISA 125x95x12	44800
ISA 150x75x8	41700
ISA 150x75x9	51600
ISA 150x75x10	61200
ISA 150x115x8	44200
ISA 150x115x10	54900
ISA 150x115x12	65300
ISA 150x115x15	80400

Q4) Write Short Notes with relevant sketches on any Two of the Following **[10]**

a) Reinforcement Detailing in a Circular Water Tank with a Rigid Joint at the Base

b) Advantages of Welded Connection

c) Some parameters that will influence Column Positions in a R.C.C. Building

d) Design the Reinforcement of the Stem in Question No 2

SECTION-II

QNo.5 Compuolsory. Answer any 2 from Q No 6,7 and 8

Q5) A Factory Building is to be Built over a Plinth Area of 15.5m x 33m. **[15]**

a) Decide at what centre to centre distance you will place the Stanchions to support Roof Trusses. Accordingly Draw a Key Plan Showing Stanchions, Bracing System Used and Position of Bracing System

b) Use a Pratt Truss. Draw the Single Line Elevation of the Truss Showing Important Dimensions. Show Purlins and Purlin Spacing. Calculate the Live Load based on the angle of the Truss. Suggest an Unequal Angle Purlin (You may use Thumb Rules for the same)

c) Suggest Angle Sections for Top Chord Members and Struts and Slings.

d) Explain the Joint of the Truss and Stanchion as to a Sliding End and a hinged or Fixed End

Q6) Design a Compound Stanchion consisting of 2no ISMC placed front to front with a Battened Lateral system to take a load of 1450kN. Height of the Stanchion is 9.4m, with both ends fixed in both directions. (Hint: Assume Stress = 200N/mm^2). Assume End Battens of Size 200mm x 8mm and Intermediate Battens 150mm x 8mm wide. Draw Sketch **[10]**

Q7) Attempt Any Two **[10]**

a) Write a Short Note on Structural Action of Barrel Vaults

b) Write a Short Note on any Structural System Used in a High Rise Building

c) Write a Short Note on Structural Action on Folded Plates and their Applications

OR

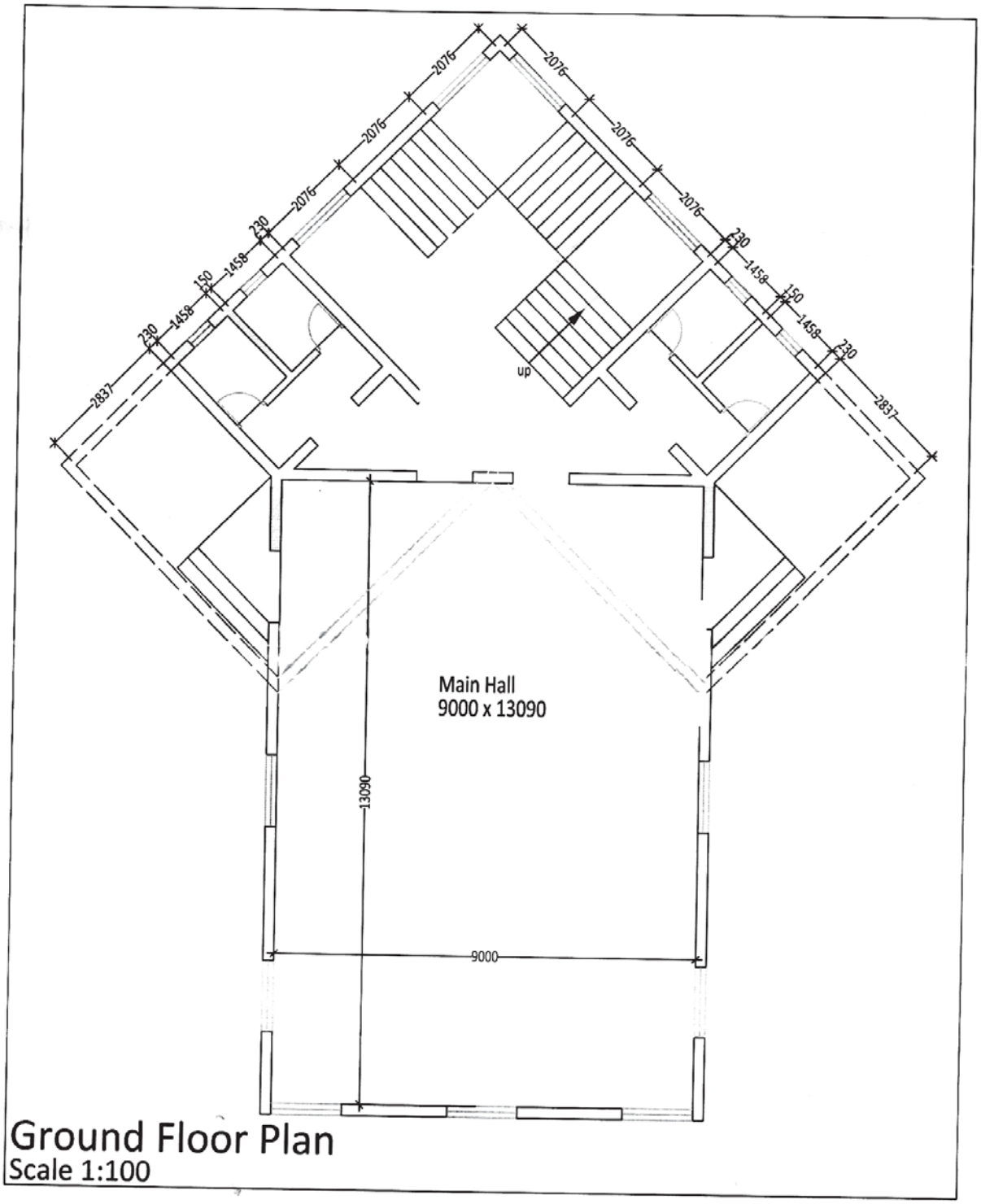
Design a Tension Member to take a Service load of l50kN. It is to be bolted with 20mm Bolts Design the Bolted. Connection. Use $\beta = 1.08$ **[10]**

Q8) Calculate Design equivalent static wind forces on an R.C.C Multistory building having size 11m× 22m x 30m located in Pune in a flat land Average storey height is 3m and frames are spaced at 5m c/c in both directions. The building is oriented with smaller dimension facing the wind. **[10]**

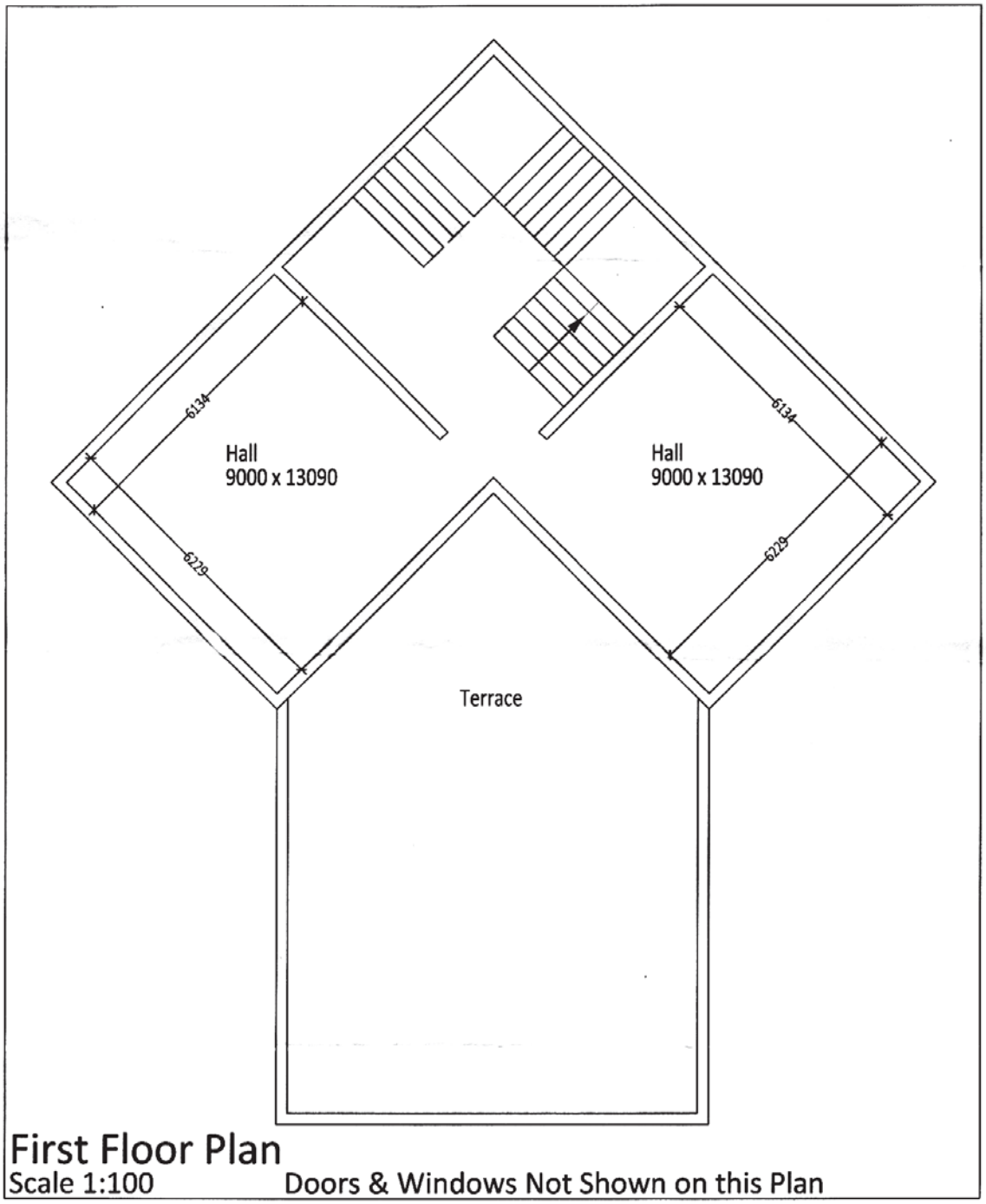
vb = 39m/s, k1 = 1, k3 = 1, k4 = 1, kd = 0.9, ka=0.9, kc = 0.95, cf =1.35. k2 as per following table

k2 = 0.91, 0.97, 1.01, 1.06 at height of l0m, 15m, 20m, 30m

Calculate the Design Nodal Wind Load on all floors above the fifth floor Explain k3 = Topography Factor



Ground Floor Plan
Scale 1:100


6134
Hall
9000 x 13090
6229
6134
Hall
9000 x 13090
6229
Terrace
First Floor Plan
Scale 1:100
Doors & Windows Not Shown on this Plan

Total No. of Questions: 4]

SEAT No. : ____

P7380

[Total No. of Pages :2

[6184]-60
T.Y.B. Arch.
BUILDING SERVICES-IV
(2019 Pattern) (Semester-VI) (3201950)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer to the two sections should be written in separate answer books.***
2) ***Answer all questions.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks***

SECTION-I

Q1) a) Explain reverberation Time. Calculate Reverberation Time of a multipurpose hall of size 10 m X 06 m and height 4.5 m of capacity 40 people. Assume all doors are closed, windows are open and halls fully occupied. **[15]**

Item	Nos.	Size	Description
Door	2	1.2 X 2.4 m	30mm thk. T.W. fully panelled doors
Window	4	2.1X 1.5 m	Fully glazed and openable
Wall	-	-	230 mm thick brick Masonry with P.O.P finish
Flooring	-	-	Glazed vitrified tile
Slab	-	-	RCC slab with P.O.P. finish
Seating	40	-	upholstered

OR

b) Explain in detail all aspects considered in Auditorium acoustics with neat proportionate sketches. **[15]**

P.T.O.

Q2) Write short notes (any four) **[20]**

a) Acoustical materials used for sound absorption

b) Propagation of sound

c) Masking effect of sound

d) Echo and flutter echo

e) Sound Amplification System

f) Method of cutting structure-borne noise

SECTION-II

Q3) a) State the building regulations formulated for high rise buildings in terms of fire-fighting and fire escape. **[15]**

OR

b) What are different types of fixed fire extinguishing systems used in a building? Explain sprinkler system with sketches. **[15]**

Q4) Write short notes (any four) **[20]**

a) Fire resistant door

b) Signages inside building for fire sasfety

c) Public address system

d) Classification of fire

e) Fire resistant rating

f) Fire escape staircase

Total No. of Questions : 3]

SEAT No. :

P-7381

[Total No. of Pages : 2

[6184]-61
T.Y. B.Arch.
BUILDING CONSTRUCTION AND MATERIALS - V
(2019 Pattern) (Semester - V) (3201936)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***
5) ***Answer all questions from Section-I on Drawing Sheets and from Section-II in Answer Book only.***

SECTION - I

Q1) Draw Reflected Plan & section of suspended ceiling for a living room of size 4.5 M × 3.5 M. Draw Plan & section to 1:20 scale **[20]**

Draw enlarge light fixing detail & fan fixing detail to suitable scale. **[10]**

OR

Draw plan, elevation & section of sandwich partition (proprietary or non-proprietary system) proposed for a meeting room. Size of partition of 3 M in length & 3 M in height with a glass window of size 1.2 M × 1.2 M located at center.

Draw A plan to scale of 1:10 **[10]**

Draw Elevation & Section to scale of 1:10 **[10]**

Draw any Two enlarged Details **[10]**

Q2) Draw sketches of the following (any one): **[5]**

a) Detail in plan of fixing wardrobe shutter to the side ply.

b) Any two alternatives of joinery in plywood.

c) Fixing of Ceiling spot light and fluorescent lamp tray in suspended ceiling.

P.T.O.

SECTION - II

Q3) Answer any Seven (07) of the following with necessary sketches if required. **[35]**

a) Laminate & Veneers.

b) Advantages of timber derivatives over solid wood.

c) Concept of shallow and deep foundations different soil conditions.

d) Prestressed slabs and Beams.

e) Explain Retaining wall and it's types.

f) Open grid suspended ceiling.

g) Explain flat plate, flat slab, ribbed slab, waffle slab, band beam and slab.

h) Ingredients of Paints.

i) MDF and plywood.

▽▽▽▽

Total No. of Questions: 8]

SEAT No. : ____

P7382

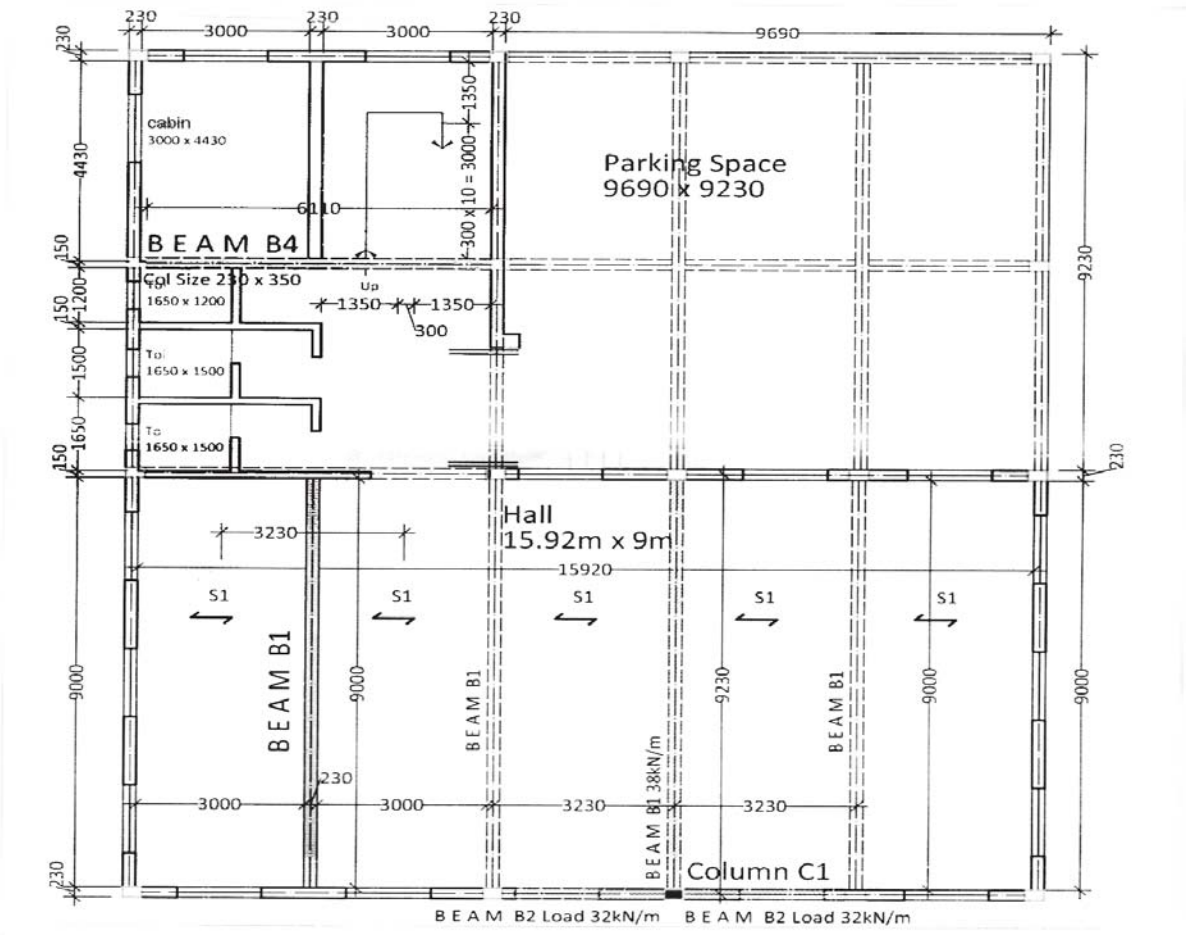
[Total No. of Pages : 4

[6184]-62
T.Y.B. Arch.
THEORY OF STRUCTURES-V
(2019 Pattern) (Semester-V) (3201938 (P))

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Question No 1 and 5 are Compulsory out of remaining three solve any two in each Section.***
2) ***The Plan given Below applies to questions in Both Sections.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data where necessary only.***
5) ***Use M 25 Grade concrete and Fe 500 grade steel.***
6) ***Every R.C.C Design should be accompanied by relevant Schedule and Reinforcement Sketch.***
7) ***Use of non-programmable Calculators and Standard Steel Tables of Plastic Design Allowed.***



P.T.O.

SECTION-I

Q1) Figure 1 shows plan of a building having Parking + 5 floors. Find the Load acting on column Cl per floor. Load acting on beam B1 is 37 kN/m and effective span of B1 = 9.23 m. Load acting on each beam B2 is 34 kN/m and effective span of each B2 = 3.23 m. Calculate Load on every Floor. Design Column of 230mm width on fourth Floor using 1% steel and M25 Grade Concrete. Keep the Size same and Design Column on third Floor. Make Schedule and Draw Sketch of reinforcement of both the columns **[13]**

%steel	M25	M30	M35
1	13.25 Ag	15.23Ag	17.21 Ag
1.5	14.875 Ag	16.845Ag	18.815Ag
2	16.5Ag	18.46Ag	20.42Ag
2.5	18.125 Ag	20.075 Ag	22.025Ag
3	19.75Ag	21.69Ag	23.63Ag

Q2) a) Design beam B1 as T Beam (Shown Dark Hatched) across Effective span 9.23 m. Calculate Load (Do not take load as per q no 1). Overall depth can be obtained by span to depth ratio L/do=15. Assume slab Depth=120 mm of slab S1. Take Live Load as 3 kN/m^2. Design for Flexure only. Assume N.A. position within flange **[8]**

b) State need of doubly reinforced beams in structures. **[3]**

Q3) a) Design Beam B4 as a Doubly Reinforced Beam of Clear Span 6.11m to carry an u.d.l of 37 kN/m. Beam width is 230 mm while overall depth is restricted to 500mm. Design for flexure only. Consider 2 rows of 20mm bars as Ast (tension reinforcement). **[8]**

b) State the IS456 specifications to calculate effective width of flange for L beams **[3]**

Q4) a) Write Short Notes on any two of the Following drawing sketches wherever necessary **[8]**

i) Expiain various types of flat slab construction

ii) Write a short note on Coffered slab with typical RCC details and applications.

iii) Write a short note on raft foundaiton

iv) Necessity of combined footing

b) Write a short note on various types of pile foundation. **[3]**

SECTION-II

Q5) Beam Bl of Effective span 9.23m is to be replaced by ISMB 450 with Zp=1553347mm^3. Calculate the load it can carry if welded with Flange Plates of 200mm x 10mm on each side. Check for Shear Strength. How is adding flange plate to the steel I section advantageous? **[13]**

OR

a) Calculate the Load taken by ISHB 450 @ 859 N/m of Area 11114.35 mm^2 if it is welded with Flange Plates of 350mm x 20 mm on each side. lyy of Bare Section = 29852000 mm^4 and is the Governing Axis. Length = 4800 mm with both ends Hinged. Design Compressive Stress for S.R of 40,50 and 60 is 198,183 and 168N/mm^2 respectively. **[8]**

b) Write a Short Note on plate Girder. **[5]**

Q6) An U.C.R Masonry wall is to be provided to retain Earth on its Vertical Face Density of Retained Earth = 17kN/m^3, Density of Masonary = 21 kN/m^3 Top Width of Wall = 1.3m, Take Bottom Width of wall = 0.6h, Height of Wall = 5.lm = h, Angle of Repose = 27°, Coefficient of Friction μ.= 0.6, S.B.C of Soil = 230 kN/m^2 Check the Stability of the wall with respect to Overturning and Sliding **[8]**

b) What is active and passive earth pressure? **[3]**

Q7) a) List the Advantages of Pre- Stressed Constructions over conventional R.C.C Construction. **[3]**

b) A Pre- stressed beam of size 300mm x 600mm is used as Beam B1 It carries an udl of 38kN/m over its entire span of 9.63 m inclusive of its self-weight. It is pre-stressed by tendons supplying 1500 kN force which are placed at 80 mm below theneutral axis. Calculate the extreme fiber stresses at end span (support) and at mid span and End Span **[8]**

Q8) Design the Isolated Pad Footing of a Column 230mm x 600mm Cl to carry a load of Service Load of l500kN in a Soil of S.B.C 250kN/m^2. Assume Design Shear Stress for concrete in footing as 0.36N/mm^2 . Design for flexure, Do not Design or Check for Double Shear. **[11]**

Total No. of Questions : 4]

SEAT No. : ____

P7383

[Total No. of Pages : 2

[6184]-63

T.Y. B.Arch.

BUILDING SERVICES-III

(2019 Pattern) (Semester-V) (3201941)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer to the two section should be written in separate answer books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***All questions are compulsory.***
4) ***Figures to the right indicate full marks.***

SECTION-I

Q1) Explain in detail with sketches: (any one) **[15]**

a) What is Artificial Ventilation. Difference between it & Natural its uses.

OR

b) Calculate the number of exhaust fans required for a Laboratory in college measuring.

6m × 10m × 3.5m Show the position of fans in plan and section.

Data to be assumed:	Fan dia. (mm)	Air handling capacity (cu.m/hr.)
	230	860
	300	1060
	450	4400

Q2) Write short notes on any four of the following. **[20]**

a) Importance of air changes.

b) Explain Ducted system of ventilation.

c) Wind Tower

d) Explain working of Co Axial fan & its uses.

e) Natural ventilation system.

f) Evaporative cooling.

P.T.O.

SECTION-II

Q3) Explain in detail with sketches: (any one) **[15]**

a) Describe in detail with neat sketches, the Refrigeration Cycle in air-conditioning.

OR

b) What are the different types of Air Conditioning Units? Describe with sketches.

Q4) Write short notes on any four of the following. **[20]**

a) The working of condenser in Air conditioning system

b) Expansion Valve

c) Use of Chillers air-conditioning system

d) How Split Air Conditioning Works.

e) Describe package Unit Air Conditioner

f) Describe Plenum system in Air Conditioning

Total No. of Questions: 6]

SEAT No. : ____

P7384

[Total No. of Pages :4

[6184]-64
Fourth Year B. Arch.
QUANTITY SURVEYING & SPECIFICATION WRITING-II
(2019 Pattern) (Semester-VIII) (4201965)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Solve section I and II in separate answer books.***
3) ***Figure on the right hand side shows the maximum Marks for the question.***
4) ***Assume suitable data wherever necessary.***
5) ***Draw the required formats, Diagrams in the answer sheet wherever necessary.***
6) ***Use of Logarithmic table, Electronic Scientific calculators, Steel table is allowed.***

SECTION-I

Q1) a) Define Rate analysis. What are the essential factors of 'Rate Analysis'? **[1×10=10]**

OR

b) Define Overheads. List out Primary & Secondary Overheads.

Q2) a) Prepare Rate Analysis (Any Two) **[2×5=10]**

i) Plain Cement Concrete (PCC) 1:2:4 mix

ii) Stone masonary in C.M. 1:6

iii) External Sand faced plaster 18mm thick in C.M. 1:4 in river sand

iv) Vitrified Tile Flooring with 35mm thick CM. 1:6 as sub base

Material Rates

1) Cement Rs. 320/- per Bag
2) Crush Sand — Rs. 1150/-per Cu. M.
3) Stone Metal — Rs. 1050/-per CuM.
4) Stone — Rs. 650/- per Cu.M.
5) River Sand — Rs. 3175/- per Cu. M.
6) Vitrified Tile — Rs. 700/-per Sq.M.

P.T.O.

Labour Rates

A) PCC - Rs. 1800/-per Cu.M.

B) Stone Masonary - Rs. 900/-per Cu.M.

C) Sand faced Plaster - Rs. 300/- per Sq.M.

D) Tile Flooring - Rs. 375/- per Sq.M.

b) Prepare Indent of Material (Any One) **[1×5=5]**

i) RCC Footing in 1:1.5:3 mix - 60 Cu.M.

ii) Internal Neru finish plaster 15mm thick in C.M. 1:4 - 180 Sq.M.

iii) T.W. Door frame of size l00m × 2.l0m with 150mm × 75mm wood cross section - 8 Frames

Q3) Short Answers (Any Two) **[2×5=10]**

a) Direct Cost

b) Role of Skilled Plumber

c) Check List for 230mm thick masonary work

d) Site Establishment Charges (Overheads)

SECTION-II

Q4) Work out quantities for Steel structure from the FIG 1 attached (Any Three) **[3×5=15]**

a) Purlines

b) Tie members

c) Principle rafters

d) Roofing sheets

e) All struts

Q5) Write Short Answers (Any Two) **[2×5=10]**

a) Write specification for 'Water Supply Line' based on

i) Types of Material,

ii) Pipe Diameter and

iii) Pipe Joinery System

b) Explain 'Gully Trap' and 'Bottle Trap'

c) Five 'Fire Fighting Equipment'

d) Write note on 'Toilets for Disabled People'

Q6) Write Manufacturer's Name (One each) **[10×1=10]**

a) Reinforcement Steel

b) Cement

c) Plywood

d) Aluminium Sections

e) Vitrified tiles

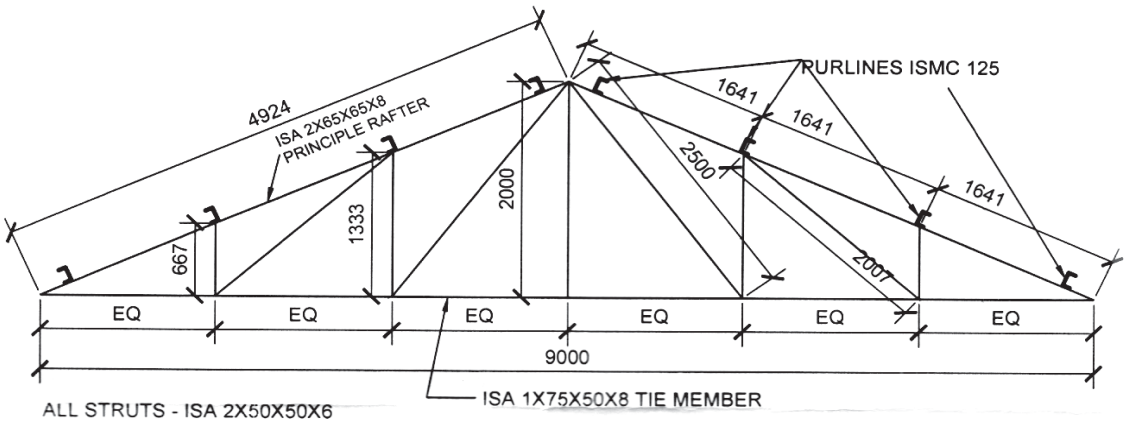
f) Wall Paint

g) Elevators

h) Electrical Switches

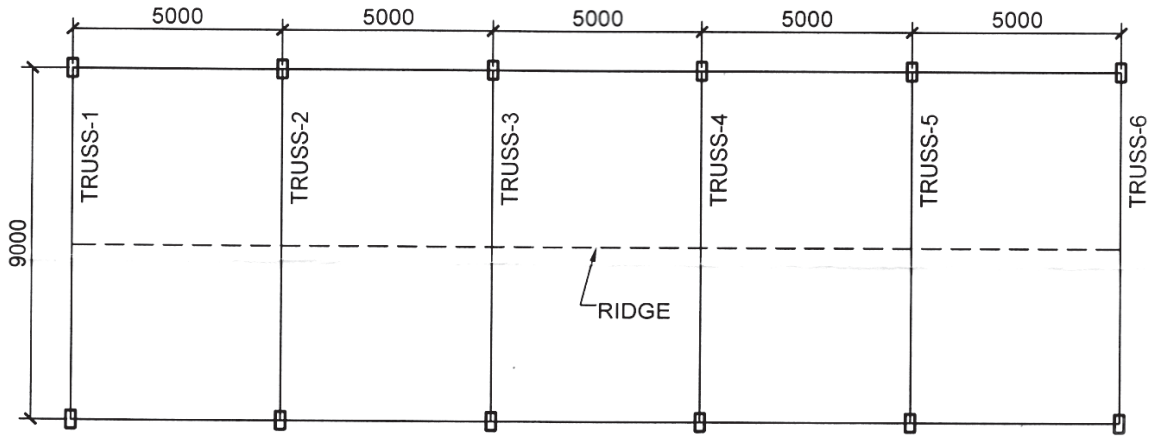
i) Sanitaryware

j) Air Conditioning unit



ELEVATION OF THE TRUSS

WEIGHT PER RMT FOR STEEL MEMBERS
1. 75X50X8 = 7.40 kg/mt
2. 65X65X8 = 7.70 kg/mt
3. 50X50X6 = 4.50 kg/mT
4. PURLINES - ISMC 125 = 13.10 kg/mt



SCHEMATIC PLAN OF THE FACTORY SHED

FIG. - 1

Total No. of Questions : 8]

SEAT No. : ____

P-7385

[Total No. of Pages : 3

[6184]-65
Fourth Year B.Arch.
PROJECT MANAGEMENT
(2019 Pattern) (Semester - VIII) (4201966)

Time : 2½ Hour] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***Answer to the two Sections are to be Written in Separate Answer Books.***
2) ***Q.No. 1 is Compulsory Question in Section I and Q.No. 5 is compulsory Question in Section II***
3) ***Answer any Two Questions of Question no. 2, 3 and 4 in Section I and any Two Questions of Question no 6,7 and 8 in Section II.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain Project, Program and Portfolio with examples. Explain the Statement "Every Construction Project is also a Program". **[11]**

Q2) Write Short Notes on any 3. **[12]**

a) Role of an Architect as a Project Manager Who Integrates everyone.

b) Traditional Project Management with examples.

c) 5M's of Construction Management.

d) Policy : Definition and Examples.

e) External Project Environment.

Q3) Answer any 3 questions. **[12]**

a) Various types of Feasibility Studies Undertaken

b) Processes in Construction Project Execution Phase

c) Major Differences between Project Management and Construction Management w.r.t Objective, Responsibility, Types, Scope of Work.

d) Explain S.M.A.R.T Goals

e) Processes in Construction Project Planning Phase

P.T.O.

Q4) Answer any 2 questions. **[12]**

a) Explain the Knowledge Area of Project Scope Management w.r.t Importance, Need and the Involved PMP.

b) Explain an Architect's Role in Monitoring Time and how he should not get blamed for Time Overrun.

c) Explain the concept of the Integrated Management in Construction Management.

d) Explain an Architects Role in Maintaining Quality.

SECTION - II

Q5) Compare between B1, B2, C Type tender with respect to the following Points. **[11]**

Scrutiny of Tender

Balance

Work Load For Architects

Commencement of Work

Detailed Drawings to be made

Extra Work

Q6) Write Short Notes on any 3. **[12]**

a) Two Envelope Open Tender

b) Security Deposit Account

c) Defects Liabilty Period

d) GFC Drawings

e) Billing, Measurement of Works and Payments

Q7) Write Short Notes on any 3. **[12]**

a) Introduce the Knowledge Area of Project Resource Management and list the PMP involved.

b) Introduce the Knowledge Area of Project Procurement Management and list the PMP involved.

c) What should be the Frequency of Site Visits and What Is to Be Observed and Noted by The Architect during His Visit to A Site.

d) Explain how does an Architect Manage Verbal Instruction on Site.

Q8) Explain any 3 the following. **[12]**

a) How to we ensure Safety on Construction Sites through the Tender Process.

b) Explain the Process of Importance of Construction Safety Management.

c) What are the Types of Financial Management?

d) Explain the Types of Facilities Management and what aspects are included in it.

Total No. of Questions : 6]

SEAT No. : ____

P-7386

[Total No. of Pages : 4

[6184]-66

F.Y. B.Arch.

QUANTITY SURVEYING & SPECIFICATION WRITING - I

(2019 Pattern) (Semester - VII) (4201958)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Solve section I and II in separate answer books.***
3) ***Figure on the right hand side shows the maximum Marks for the question.***
4) ***Assume suitable data wherever necessary.***
5) ***Draw the required formats, Diagrams in the answer sheet wherever necessary.***
6) ***Use of Logarithmic table, Electronic Scientific calculators, Steel table.***

SECTION - I

Q1) **Write short notes on the following (Any Three) :** **[3 × 5 = 15]**

a) Quantity surveying and estimation

b) Qualities of an estimator

c) Accompaniments of an estimate

d) Two types of estimate

e) Methods of taking out quantities

Q2) **Answer the following in detail (Any One) :** **[1 × 10 = 10]**

a) What is the relation between working drawings and bill of quantities?

OR

b) Types and classification of Specifications.

Q3) **Workout Quantities of the following items from the Fig.-A attached (Any Two) :** **[2 × 5 = 10]**

a) Excavation for foundation.

b) Filling in plinth.

c) Random Rubble Masonry in foundation and plinth.

d) Coping.

P.T.O.

SECTION - II

Q4) **Workout Quantities of the following items from the Fig.-B attached (Any Three) :** **[3 × 5 = 15]**

a) RCC footings

b) RCC columns in super structure

c) RCC slab

d) Internal masonry walls

e) External plaster for walls of Hall and Lobby

f) Flooring in Hall and Lobby

Q5) **Answer the following (Any Three) :** **[3 × 5 = 15]**

a) Explain the classification of Strata as per IS-1200.

b) Write brief specification for 'Filling in Plinth'.

c) Write specifications for 'Burnt Bricks'.

d) Write specifications for 'Cement'

e) What is the importance of standard mode of measurements?

Q6) **Write the mode of measurement for the following (Any Five) :** **[5 × 1 = 5]**

a) PCC at plinth.

b) Damp proof course.

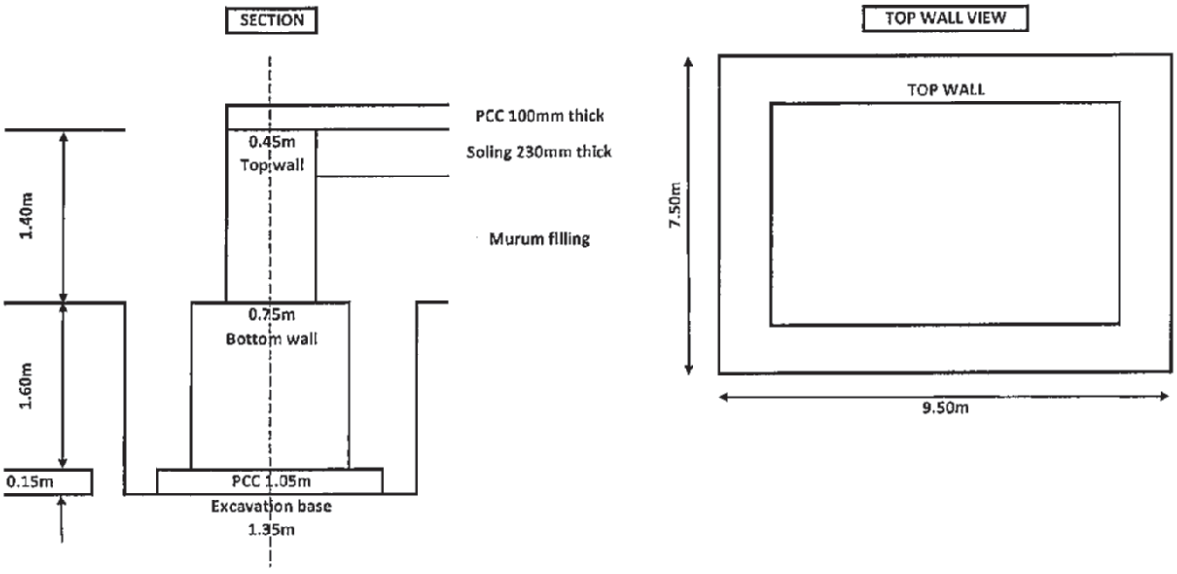
c) RCC Slab

d) European water closet

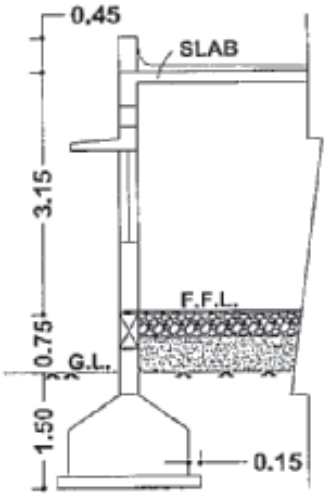
e) Kitchen

f) 600 mm thick UCR masonry in foundation

g) Overhead water tank


SECTION
PCC 100mm thick
Soling 230mm thick
0.45m
Top wall
Murum filling
1.40m
0.75m
Bottom wall
1.60m
0.15m
PCC 1.05m
Excavation base
1.35m
TOP WALL VIEW
TOP WALL
7.50m
9.50m

DRAWING 'A'

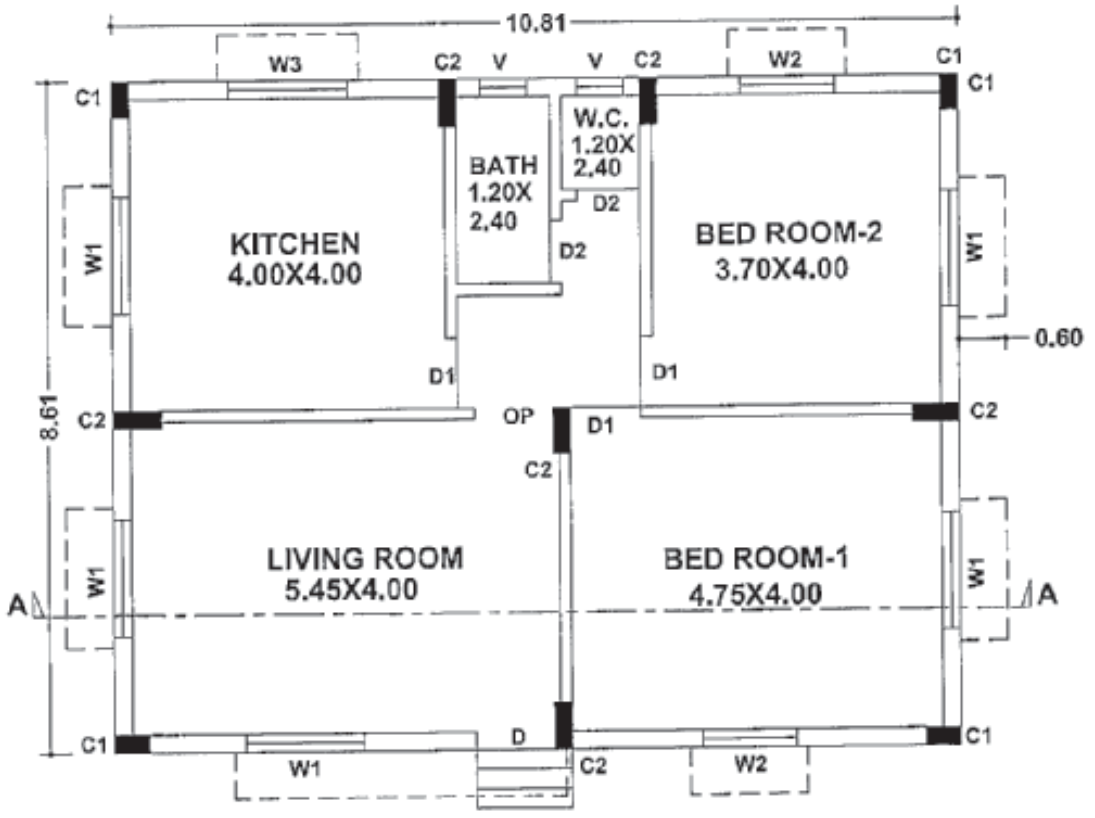


TYPICAL SECTION

SCHEDULE OF OPENING	
D = 1.00 X 2.10	W1 = 1.50 X 1.20
D1 = 0.90 X 2.10	W2 = 1.20 X 1.20
D2 = 0.80 X 2.10	W3 = 1.50 X 0.90
OP = 1.00 X 2.10	V = 0.60 X 0.90

SPECIFICATIONS:-

PCC IN FOUNDATION M15 GRADE 150 m.m. Thick.
RCC FOOTING - C1 - 1.25 X 1.25 , D - 0.45 / d - 0.15.
C2 - 1.50 X 1.50 , D - 0.60 / d - 0.20.
RCC COLUMN - C1 - 0.23 X 0.45 , C2 - 0.23 X 0.60.
RCC FLOOR BEAM - 230 X 450 m.m.
RCC SLAB - 125 m.m. Thick.
RCC LINTEL BEAM - 230 X 300 m.m.
RCC CHAJJA - 100 m.m. Thick.
PCC AT PLINTH TOP M10 GRADE 100 m.m. Thick.
ALL EXTERNAL WALLS - 230 m.m. Thick.
ALL INTERNAL WALLS - 150 m.m. Thick.
230 Thick RUBBLE SOLING IN PLINTH.
INTERNAL NERU FINISH PLASTER TO WALL & CELING.
EXTERNAL SAND FACED PLASTER.



GROUND FLOOR PLAN

FIG - B

⌘⌘⌘

Total No. of Questions: 10]

SEAT No. : ____

P7387

[Total No. of Pages :2

[6184]-67
Fourth Year B.Arch.
PROFESSIONAL PRACTICE
(2019 Pattern) (Semester-VII) (4201959)

Time : 2½ hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answers to the two Sections-I & II - must be written on SEPARATE Answer Books.***
2) ***Answers to Q.1 from Section-I, and Q.6 from Section II are COMPULSORY.***
3) ***Attempt ANY TWO out of the remaining Questions in EACH section.***
4) ***Figures to the right of each Question indicate Full Marks.***

SECTION-I

Compulsory Question:

Q1) What do you know about The Indian Institute of Architects? Give its History in brief, and its Role and Activities as a professional organisation of Architects ? **[11]**

Answer any TWO of the following:

Q2) Write a note on the Duties, Liabilities, Conduct of a Professional Architect, highlighting his specific role and Image in Society. **[12]**

Q3) What is the Council of Architecture ? How and when was it established? What is its composition, and its role in Architectural Profession in India **[12]**

Q4) Distinguish between ANY TWO of the following (6 Marks Each) **[12]**

a) Savings and Current Bank Accounts

b) Trade Business and Profession

c) Architect and Engineer

d) Project and Construction Management

P.T.O.

Q5) Write Short Notes on ANY TWO of the following: (6 Marks Each) **[12]**

a) Role of a Clerk of Works in a construction project.

b) tages of Work in a typical Architectural project

c) General organisation of an Architects Office

d) Role of allied / specialist Consultants in Architecture

SECTION-II

Compulsory Question:

Q6) What are the advantages and disadvantages of Architectural Design Competitions ? What are the different types of Competitions? **[11]**

Answer ANY TWO of the following:

Q7) Write a comprehensive note on prospects and avenues of service available for Architects after graduation with a B.Arch qualification **[12]**

Q8) What are the stages of an Architects work from introduction of a project by a client to its completion and occupation by the client? **[12]**

Q9) Compare and Contrast ANY TWO of the following (6 marks each) : **[12]**

a) Estimation and Valuation

b) Cost and Price

c) Deficient Service and Negligence

d) Proprietory and Partnership Practice

Q10)Write Short Notes on ANY TWO of the following (6 marks each) : **[12]**

a) Site Supervision by Architects

b) Professional Liability Insurance

c) Income Tax and Professional Tax

d) Advertising of Services by Architects