Total No. of Questions : 6] **[Total No. of Pages : 2**

P777

[3967] - 1002
F.Y.B.Arch. (Interior Design)
History of Architecture, Art,Culture and Interior Design - I
(Theory) (Annual Pattern)

Time : 3 Hours] ***[Max. Marks :100***

Instructions to the candidates :

1) ***All questions are compulsory.***
2) ***Draw neat illustrative sketches to support the answer wherever necessary.***
3) ***Answers to be written in separate note books for each section.***
4) ***Figures to the right of the questions indicate full marks.***

SECTION - I

Q1) Explain the terms (any Three) : **[15]**

a) Vedic Grama.
b) Swastika.
c) Great bath.
d) Vihara.
e) Pylons.

Q2) Describe the evolution of burial monuments of the ancient Egyptian civilization. **[15]**

OR

Describe the various typologies of Buddhist architecture in detail.

Q3) Write short notes (any four) : **[20]**

a) Chinese gardens
b) Catyl huyuk
c) Dougong.
d) Japanese house interiors.
e) Egyptian Furniture.
f) Gallery graves.

P.T.O.

SECTION - II

Q4) Explain the terms (any three) : **[15]**

a) Narthex

b) Circus

c) Greek theatre

d) Bell tower

e) Domus

Q5) Describe any three public buildings of the classical Roman civilization. **[15]**

OR

Describe the evolution of church architecture from Basilica plan.

Q6) Write short notes (any four) : **[20]**

a) Mosaic.

b) Colloseum.

c) Treasury of Atreus.

d) Megaron.

e) Mesoamerican art.

f) Mayan Vault.

■ ■ ■

Total No. of Questions :8] **[Total No. of Pages : 2**

P773

[3967] - 2001
S.Y. B.Arch. (Interior Design)
THEORY OF STRUCTURE - II
(Yearly Pattern)

Time :3 Hours] ***[Max. Marks :100***

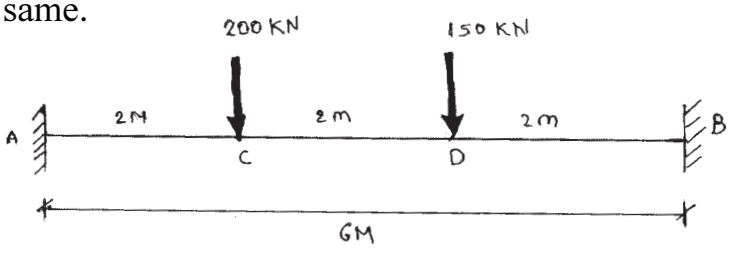
Instructions to the candidates:-

1) ***Answer any 3 questions from each section.***
2) ***Answers to the sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, non-programmable electronic calculator and steel table are allowed.***
6) ***Assume suitable data, if necessary.***
7) ***In RCC design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) a) Differentiate between fixed and simply supported beam. **[6]**

b) Fig.1 show a Fixed Beam AB. Solve the beam and Draw SFD and BMD for the same. **[10]**



FIXED BEAM

Q2) a) Design a simply supported steel beam to carry a UDL of 17.5 kN/m excluding the self weight of beam over its entire span. The effective span of beam is 5.55 m. The compression flanges of beam are having adequate lateral support. Design the beam using ISMB. Check the beam for shear and deflection. Assume Permissible stresses in beam as 165 N/mm^2 and 100 N/mm^2 in bending and shear respectively. **[10]**

b) A hollow square steel column of cross section 100 mm x 100 mm with thickness 4 mm and length 2.6 M is fixed at bottom and free at the top. Determine the critical load on the column. Use Euler's formula. Take $E = 2 \times 10^5$ N/mm^2. **[7]**

P.T.O.

Q3) Design a tension member of truss having effective length of 2 m and carrying a tensile force of 150 kN. Check the same section if it is subjected to a compressive load of 120 kN. Use double equal angle section connected on both side of 8 mm thick gusset plate. Design a suitable bolted or riveted connection for the same. **[16]**

Q4) Write short note on (any four) : **[17]**

a) Flitched beam.
b) Moment distribution method for portal frames.
c) Different steel sections used for steel structures (as per I.S. Code).
d) Stress diagram for concrete.
e) Grades of concrete and steel used in R.C.C. design.

SECTION - II

Q5) A concrete beam has 350 mm width and 700 mm effective depth is subjected to a bending moment of 400 kN-m. Design the beam for bending and shear. Draw the detailed reinforcement diagram. Assume permissible shear stress in concrete 0.4 N/mm^2. **[16]**

Q6) a) Write short note on the deshuttering period (stripping time) for formwork. **[6]**

b) Design an axially load square short column to carry axial load 900kN. Effective height of column is 4000 mm. Draw detailed reinforcement Diagram. **[10]**

Q7) Design a RC slab for a bungalow for the following data : **[17]**

a) Clear Hall size 5.5 M **x** 4.4 M.
b) Width of end support = 300 mm.
c) F.F. load of 1.0 kN/m^2.
d) Live load 2.5 kN/m^2.

Draw reinforcement details.

Q8) Write short notes : (any four) **[17]**

a) Load bearing structures, advantages and disadvantages.
b) Reinforcement details in cantilever chajja.
c) Types of arches, advantages and disadvantages of it.
d) Long and short columns.
e) Effective height of steel columns based on end conditions.

Total No. of Questions : 8] **[Total No. of Pages : 2**

P770

[3967] - 22
S.Y. B.Arch.
THEORY OF STRUCTURE - II
(Yearly Pattern) (2004 Course)

Time :3 Hours] ***[Max. Marks :100***

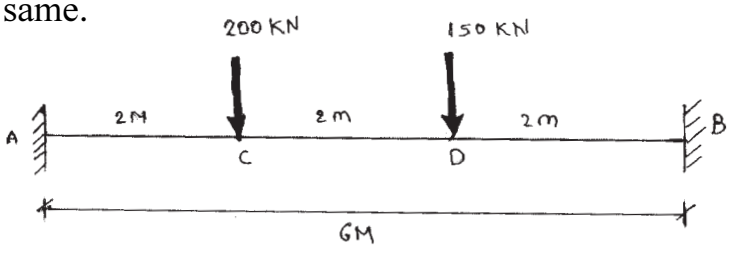
Instructions to the candidates:-

1) ***Answer any 3 questions from each section.***
2) ***Answers to the sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, non-programmable electronic calculator and steel table are allowed.***
6) ***Assume suitable data, if necessary.***
7) ***In RCC design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) a) Differentiate between fixed and simply supported beam. **[6]**

b) Fig.1 show a Fixed Beam AB. Solve the beam and Draw SFD and BMD for the same. **[10]**



FIXED BEAM

Q2) a) Design a simply supported steel beam to carry a UDL of 17.5 kN/m excluding the self weight of beam over its entire span. The effective span of beam is 5.55 m. The compression flanges of beam are having adequate lateral support. Design the beam using ISMB. Check the beam for shear and deflection. Assume Permissible stresses in beam as 165 N/mm^2 and 100 N/mm^2 in bending and shear respectively. **[10]**

b) A hollow square steel column of cross section 100 mm x 100 mm with thickness 4 mm and length 2.6 M is fixed at bottom and free at the top. Determine the critical load on the column. Use Euler's formula. Take $E = 2 \times 10^5$ N/mm^2. **[7]**

P.T.O.

Q3) Design a tension member of truss having effective length of 2 m and carrying a tensile force of 150 kN. Check the same section if it is subjected to a compressive load of 120 kN. Use double equal angle section connected on both side of 8 mm thick gusset plate. Design a suitable bolted or riveted connection for the same. **[16]**

Q4) Write short note on (any four) : **[17]**

a) Flitched beam.
b) Moment distribution method for portal frames.
c) Different steel sections used for steel structures (as per I.S. Code).
d) Stress diagram for concrete.
e) Grades of concrete and steel used in R.C.C. design.

SECTION - II

Q5) A concrete beam has 350 mm width and 700 mm effective depth is subjected to a bending moment of 400 kN-m. Design the beam for bending and shear. Draw the detailed reinforcement diagram. Assume permissible shear stress in concrete 0.4 N/mm^2. **[16]**

Q6) a) Write short note on the deshuttering period (stripping time) for formwork. **[6]**

b) Design an axially load square short column to carry axial load 900 kN. Effective height of column is 4000 mm. Draw detailed reinforcement Diagram. **[10]**

Q7) Design a RC slab for a bungalow for the following data : **[17]**

a) Clear Hall size 5.5 M x 4.4 M.
b) Width of end support = 300 mm.
c) F.F. load of 1.0 kN/m^2.
d) Live load 2.5 kN/m^2.

Draw reinforcement details.

Q8) Write short notes : (any four) **[17]**

a) Load bearing structures, advantages and disadvantages.
b) Reinforcement details in cantilever chajja.
c) Types of arches, advantages and disadvantages of it.
d) Long and short columns.
e) Effective height of steel columns based on end conditions.

Total No. of Questions : 8] **[Total No. of Pages : 3**

P771

[3967] - 33
T.Y.B. Arch.
THEORY OF STRUCTURES - III
(Yearly 2004 Pattern)

Time : 3 Hours] ***[Max. Marks :100***

Instructions to the candidates :

1) ***Answer any three questions from each section.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, non Programmable electronic calculator and steel table are allowed.***
6) ***Assume suitable data, if necessary.***
7) ***In RCC design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) Write short notes on (any Three) : **[16]**

a) Counter-fort retaining wall with reinforcement details.

b) Active and passive earth pressure of soil.

c) Different types of foundations in B.C. soil.

d) Combined footing.

e) Foundation problems on site.

Q2) Design an isolated square footing for column of size 400mm × 400mm carrying an axial load of 900 KN. Assume safe bearing capacity of soil as 290 KN/m^2. Check the footing for One-way or two way shear. Draw the reinforcement details. **[17]**

P.T.O.

Q3) Design a RCC dog- legged staircase for a library building for the Following data : **[16]**

a) Width of flight = 1500 mm

b) Width of landing at both ends of going = 1500 mm

c) Floor to floor height = 3600 mm

d) Riser = 150 mm

e) Tread = 300 mm

The staircase is supported on 350 mm wide beams at outer Edge of landings. Draw neat details of reinforcement.

Q4) Check the stability of concrete dam for the following data : **[17]**

a) Density of water = 10 kN/m^3

b) Height of the dam = 10M

c) Base width of dam = 7M

d) Top width = 1.7M

e) Coefficient of friction = 0.5

f) Safe bearing capacity of soil = 250 kN/m^2

g) Density of concrete = 24 kN/m^3

SECTION - II

Q5) Write short notes on (any three) : **[16]**

a) Plate girder.

b) Ductility detailing for Earthquake Resistant Structure.

c) Difference between limit state method and working stress Method of design.

d) Over head water tank.

e) Safe bearing capacities of different types of soil.

Q6) a) Explain coffered slab with sketches. State its advantages and disadvantages. **[7]**

b) Explain the following terms : **[10]**

i) Sections of compound column and Lacing system.

ii) Differentiate between Prestressed concrete and RCC.

Q7) A compound Stanchion of a factory building consist of 2-ISMC 200 placed back to back. Calculate the spacing between the two section to take maximum load. What will be the load carrying capacity if the length of the column is 4.2m with One end fixed and another hinged. Design a suitable Batten system for the same. **[17]**

Q8) a) Design a suitable purlin of a factory building for a roof truss for the following data : **[8]**

i)	Span of Truss	=	12m
ii)	Spacing of Truss	=	3.6m c/c
iii)	Slope of the roof	=	30^{o}
iv)	Spacing of Purlins	=	1.4m c/c
v)	Roof Coverage	=	G. I. Sheets

Neglect wind pressure. Use Unequal angle section.

b) A prestressed concrete beam of overall size of 300 × 600 mm is simply supported over a span of 6m. The beam carries a point load of 25 KN at its center. The beam is prestressed with a prestressing Force of 960 KN. The prestressing tendons are located at the 100 mm from bottom face. Calculate the extreme fiber stresses in the beam at mid span. **[8]**

■ ■ ■

Total No. of Questions : 10] [Total No. of Pages : 2

P776

[3967] - 4002

Fourth Year B.Arch. (Interior Design)

CONSTRUCTION, SERVICES & MATERIALS CSM - IV

(Annual 2006 Pattern) (413482)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Write answers to each section in a separate answerbook.***
2) ***Q.1 from Section I is compulsory. Solve any two of the remaining questions from Section I.***
3) ***Q.5 from Section II and Q.8 from Section III are compulsory. Solve any one of the remaining questions from Section II & Section III.***
4) ***Support your answer with neat sketches.***
5) ***Figures to the right indicate full marks for the question.***

SECTION - I

Q1) Draw to a suitable scale details of any one of the following structures (neatly hand - drawn sketches to appropriate scale shall also be acceptable) : **[30]**

a) One Typical bay of Seating in a Cricket Stadium of approx. 20.0 m in width showing :
   i) Supporting columns, raker beams and seating in RCC beams & Slab.
   ii) Roof structure with supporting columns, trusses, purlins and roofing sheets.
   iii) Rainwater gutter and downtake pipes.

OR

b) Swimming Pool in a Housing Colony of approx. 75 Sq. Mt. Area and a maximum depth of 1.5 mts., showing
   i) Overall Plan and Section showing structural system & filteration plant.
   ii) Details of Inlet & outlet of water.
   iii) Water proofing system & materials.

Q2) State how good construction practices & construction management are important for earthquake resistance of buildings. **[10]**

P.T.O.

Q3) What are the important factors in the design & construction of a multi-level basement? **[10]**

Q4) What are the important factors in the design of Auditorium seating? **[10]**

SECTION - II

Q5) Write short notes on <u>any three</u> of the following : **[15]**

a) Adhesives.

b) Class & its fixtures for Curtain Walls.

c) Finishing materials used for Swimming Pools.

d) Fire resistant building materials.

e) Surface finishes for furniture.

Q6) What are the roof covering materials used for long span structures? Discuss suitability & limitations of each material. **[10]**

Q7) What materials are used for sound & heat insulation? Discuss their properties and application. **[10]**

SECTION - III

Q8) Write short notes on <u>any three</u> of the following : **[15]**

a) Automatic sprinklers.

b) Bio-metric identification systems.

c) Smart systems for control of day-light.

d) Smart systems for HVAC.

e) Smart Graphic Signage.

Q9) Describe salient features of modular furniture with sketches. **[10]**

Q10) Describe intelligent systems for fire safety in buildings. **[10]**

Total No. of Questions : 8] **[Total No. of Pages : 3**

P772

[3967] - 302
T.Y.B.Arch. & I.D.
THEORY OF STRUCTURES - III (b)
(2008 Pattern)

Time :3 Hours] ***[Max. Marks :100***

Instructions to the candidates:

1) ***Answer any 3 questions from each section.***
2) ***Answers to the sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***
5) ***Use of logarithmic tables, slide rule, mollier charts, nonprogrammable electronic calculator and steel table are allowed.***
6) ***Assume suitable data, if necessary.***
7) ***In RCC design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) Write short notes on (any Three) **[16]**

a) Counter-fort retaining wall with reinforcement details.

b) Active and passive earth pressure of soil.

c) Different types of foundations in B.C. soil.

d) Combined footing.

e) Foundation problems on site.

Q2) Design an isolated rectangular footing for column of size 300mm x 500mm carrying an axial load of 700 kN. Assume safe bearing capacity of soil as 300 kN/m^2. Check the footing for two way shear. Draw the reinforcement details. **[17]**

Q3) Design a RCC dog-legged staircase for a residential building for the following data:

a) Width of flight. = 1200 mm.

b) Width of landing at both ends of going. = 1200 mm.

c) Floor to floor height. = 3000 mm.

P.T.O.

d) Riser. = 170 mm.

e) Tread. = 250 mm.

The staircase is supported on 230mm wide beams at outer Edge of landings. Draw neat details of reinforcement. **[16]**

Q4) Check the stability of U.C.R. retaining wall for the following data:

a) Density of U.C.R. = 26 kN/m^3.
b) Height of the wall. = 6 M.
c) Base width of wall. = 4.5 M.
d) Top width of wall. = 1.0 M.
e) Coefficient of internal friction. = 0.5.
f) Safe bearing capacity of soil. = 250 kN/m^2.
g) Angle or repose. = 30 degrees.

Vertical face of wall is on the back fill side. **[17]**

SECTION - II

Q5) Write short notes on (any three). **[16]**

a) Plate girder.
b) Ductility detailing for Earthquake Resistant Structure.
c) Under ground water tank.
d) Type of loading on column.
e) Safe bearing capacities of different types of soil.

Q6) a) Write a short note on combined footing for two columns. Explain the design steps and draw general reinforcement details. **[9]**

b) Explain the following terms:

i) Sections of compound column and Lacing system.
ii) Differentiate between prestressed concrete and RCC. **[8]**

Q7) A compound Stanchion of a factory building consist of 2-ISMC 250 placed back to back. Calculate the spacing between the two section to take maximum load. What will be the load carrying capacity if the length of the column is 4.8m with both ends fixed. Design a suitable Batten system for the same. **[17]**

Q8) a) Design a suitable purlin of a factory building for a roof truss for the following data:

i) Span of Truss = 15 m.

ii) Spacing of Truss = 4.5 m c/c.

iii) Slope of the roof = 25°.

iv) Spacing of purlins = 1.75m c/c.

v) Roof Coverage = G.I. Sheets.

Neglect wind pressure. Use Unequal angle section. **[8]**

b) A prestressed concrete beam of overall size of 300 x 600 mm is simply supported over a effective span of 7.2m. The beam carries a UDL of 15 kN/m at its entire span excluding the self weight of beam. The beam is prestressed with a prestressing force of 850 kN. The prestressing tendons are located at the 85mm from bottom face. Calculate the extreme fiber stresses in the beam at mid span. **[8]**

♦♦♦♦

Total No. of Questions : 4] [Total No. of Pages : 2

P682

[3967] - 24
S.Y. B.Arch.
BUILDING SCIENCE & SERVICES - I
(Yearly Pattern) (2004 Course)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate books.***
2) ***Figures to the right indicate full marks.***
3) ***All questions are compulsory.***

SECTION - I

Q1) Answer any two questions of the following questions : **[2 × 15 = 30]**

a) What are the functions of Traps? Draw and explain any three types of Traps used in sanitation system.

b) Draw and label all the parts of a septic tank.

c) Sketch and explain the working of any three types of valves.

Q2) Write short notes of the following (draw sketches wherever necessary) (any four) : **[4 × 5 = 20]**

a) Different materials used for water pipe.

b) Pillar cock.

c) Vent pipe.

d) Tapping of water supply from the mains.

e) Soakage pit.

f) Storm water Drainage.

P.T.O.

SECTION - II

Q3) Answer any two questions of the following questions : **[2 × 15 = 30]**

a) What is Daylight Factor? What are the different components to calculate DF?

b) What are the different components of wiring systems used in building electrification?

c) Explain Indirect and Direct systems of hot water supply in a building.

Q4) Write short notes of the following (draw sketches wherever necessary) (any four) : **[4 × 5 = 20]**

a) Garbage disposal containers.

b) Incandescent Lamp.

c) Accent lighting.

d) Bio Gas Plant.

e) M.C.B.

f) Rain water harvesting.

P683

[3967] - 31
T.Y. B.Arch.
ARCHITECTURAL DESIGN - III
(Yearly Pattern) (2004 Course) (Backlog)

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

Instructions to the candidates:-

1) ***The design will be valued as a whole.***
2) ***Assume suitable data if necessary.***
3) ***Line drawings of plan and section 1:100 must be submitted at the end of first day. This drawing will be returned 30 min. before the end of second day.***
4) ***All drawings should be clear and self explanatory.***

A Playgroup and Kindergarten School, Mumbai.

A residential locality in Mumbai has land reserved for a Playgroup and Kindergarten School. The rectangular piece of land which is 4200 sqm. (42 m × 100 m) is amidst low rise residential buildings on the east and has a park situated adjacent to it on the south and 12 m wide main road on the north along the 100m length.

The school philosophy promotes an all-round development of the child, hence besides the regular classrooms. There also should be large interactive areas, play areas, informal outdoor areas where classes could be held in dance, drama, singing and art.

The school should have a friendly atmosphere so that the children feel at home. The design of various spaces must consider anthropometry of the child, the design should be simple and there should be easy movement and orientation so the child knows his way to his class.

Three mini school vans are provided by the school however the parents have a choice of bringing the child themselves.

Front (road-side) margin along the 100m length is 4.5 m and side margins 3.0 m.

Design Requirements :

Academic Areas :

Type	*Age Group*	*No. of Students*	*No. of Classes*	*Area*
1. Playgroup	2.5 to 3.5 yrs.	20	02	50 sqm.
2. Lower KG	3.5 to 4.5 yrs.	20	02	50 sqm.
3. Upper KG	4.5 to 5.5 yrs.	20	02	50 sqm.
4. Hobby class	common	20	01	80 sqm.
5. Assembly hall (with stage)	common	200	01	400 sqm.
6. Two Toilets for children (Girls + Boys) 4 WCs, 6 WHBs				30 sqm. each

Non - Academic Areas :

Type	*Age Group*	*No. of Students*	*No. of Rooms*	*Area*
1. Tiffin room	common	100	01	80 sqm.
2. Pantry	--------	-----	-----	20 sqm.
3. Medical room	common	02	01	20 sqm.
4. Sleeping room	common	10	01	50 sqm.

Administrative Areas :

Type	*No. of Rooms*	*Area*
1. Entrance lobby + waiting	01	40 sqm.
2. Principals cabin with attached toilet	01	20 sqm.
3. Office for 4 persons	01	40 sqm.
4. Staff room for 10 persons	01	40 sqm.
5. Toilets for staff and office staff	01 Ladies + 01 Gents	15 sqm. each
6. Store	01	20 sqm.

Total Built up area = 2185 sqm. + 30% circulation i.e. 656 sqm. = 2841 sqm.

Outdoor areas :

1. Landscaped areas as required
2. Outdoor play area – 4 swings, 2 slides, sandpit
3. Parking – 3 mini vans, 10 four wheelers and 25 two wheelers

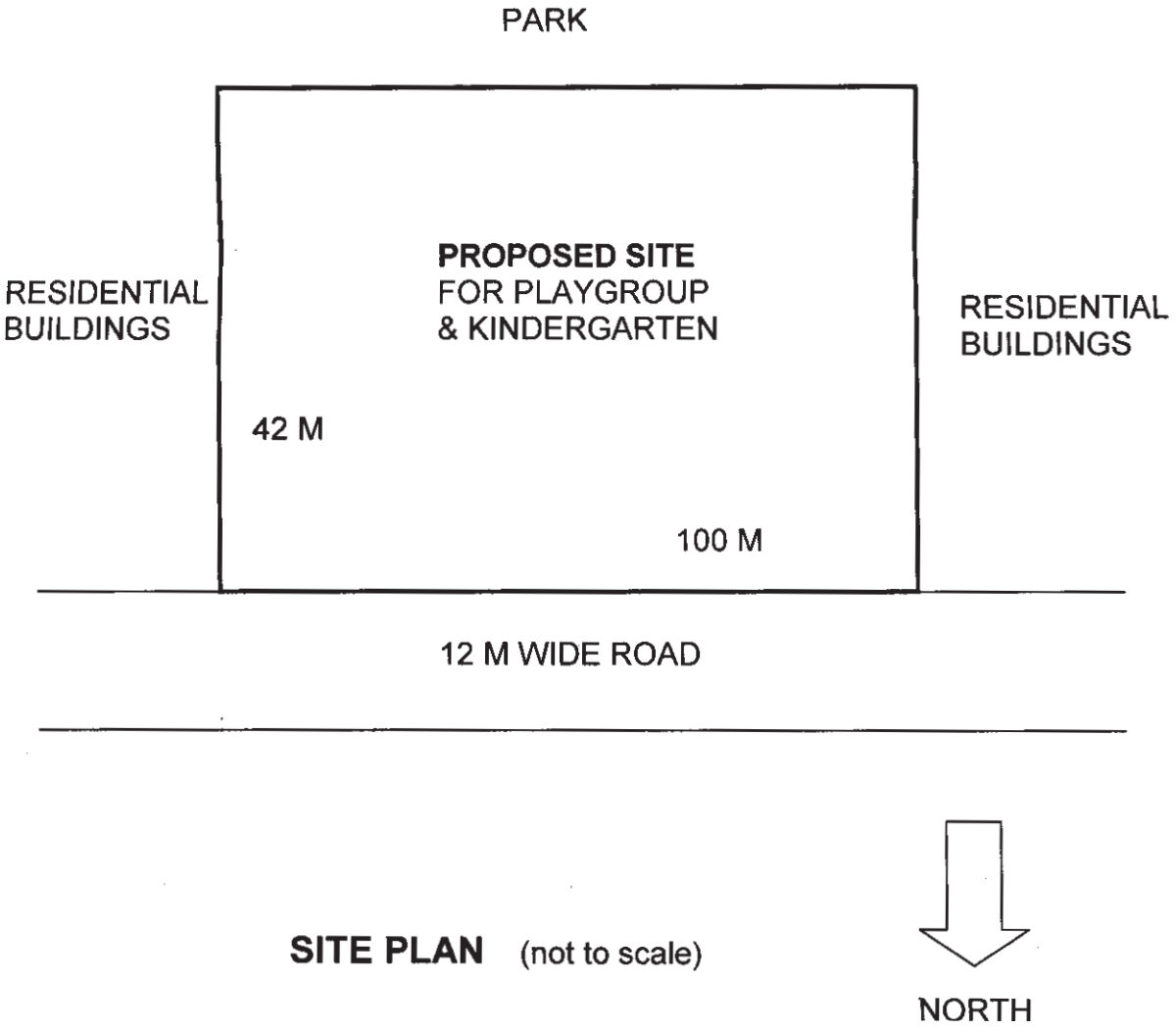
---

Drawing requirements :

1. Site Plan with roof plan of structure and landscape, roads, parking and pathways at 1:200 scale
2. Ground floor plan with all furniture (1 class in detail) along with part outdoor areas at 1:100

   (Note: This tracing with built form will be submitted as first day sketch)
3. Two sections or sectional elevations at 1:100
4. Two elevations at 1:100
5. Structural plan showing column and beam positions at 1:100
6. View

TOPIC : <u>A Playgroup and Kindergarten School, Mumbai</u>



SITE PLAN (not to scale)

✪✡✪✡

Total No. of Questions : 4] [Total No. of Pages : 2

P684

[3967] - 32
T.Y. B.Arch.
BUILDING CONSTRUCTION & MATERIALS - III
(Yearly Pattern) (2004 Course)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answer two questions from Section I and one question from Section II.***
2) ***Answers to the two sections should be written in separate 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) Draw plan and section showing reinforcement detail of cantilever balcony on the longer side of a one-way slab, having room size of 5.00 m × 3. 00 m. Balcony projection is 1.20 m. (scale 1:20). **[15]**

b) Draw sketches showing different types of balconies and canopies. **[15]**

Q2) a) Draw plan, elevation and section of partly glazed and partly panelled T.W. partition of size 3.6 m × 3.0 m to the scale of 1:10. Also draw two joinery details to the scale of 1:5. **[20]**

b) Draw sketches of partitions using different materials. **[10]**

Q3) Write short notes with neat sketches (Any Three) : **[30]**

a) External tanking for single basement.

b) R.C.C. retaining wall and its types.

c) Roofing systems developed by CBRI.

d) Bay windows and its types.

e) Three types of pile foundations.

P.T.O.

SECTION - II

Q4) Explain in brief with neat sketches wherever necessary (Any Five) : **[40]**

a) Castellated beam.

b) Long span structures in R.C.C.

c) Setting-out of a structure.

d) Reinforced brick work.

e) Types of lifts.

f) Method of painting new woodwork.

g) Use of glass in building industry (different types).

h) Light weight concrete and readymix concrete.

Total No. of Questions : 5] [Total No. of Pages : 2

P685

[3967] - 34
T.Y. B.Arch.
BUILDING SCIENCE & SERVICES - II
(Yearly Pattern) (2004 Course)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Answers to the TWO SECTIONS should be written in separate books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data if required.***
4) ***All questions are compulsory.***

SECTION - I

Q1) Calculate the no. of exhaust fans required for a Lecture hall measuring 18m x 10 m x 4.m. Show the positions of the fans in a sketch plan and section. **[15]**

Data :

Diameter of fan	Air handling capacity of fan in cu.m/hr.
1. 305 mm	1900
2. 380 mm	4000
3. 457 mm	6800
4. 610 mm	7900

OR

Describe and draw the refrigeration cycle in the process of Air Conditioning.

Q2) Explain with the help of neat sketches the various methods of natural ventilation. **[15]**

OR

Explain with the help of neat sketches, Stack effect, wind towers and cross ventilation

P.T.O.

Q3) Write short notes on any **FOUR** : **[20]**

a) Types of fans used in mechanical ventilation.

b) Fan coil units.

c) Types of filters used in Air Conditioning.

d) Evaporator.

e) Cooling towers in Air-conditioning.

f) Window A.C. Unit.

SECTION - II

Q4) State Sabines formula and calculate the time of reverberation for a lecture hall admeasuring 12m x 5m x 4m. Assume seating capacity of hall to be 30

State the optimum time of reverberation for a lecture hall.

Data :	No.s	Size	Description
Doors	2No.s	1m x 2.1m	T.W. fully panelled doors.
Windows	4No.s	2m x 1.2m	Fully glazed windows.
Walls	-	230 thk.	Brick wall with Neeru finished plaster.
Flooring	-	-	Marble Mosaic tiles.

Assume all windows to be open, all doors closed and full occupancy. **[20]**

OR

Explain the principles of auditorium acoustics with the help of neat sketches.

Q5) Explain with the help of neat sketches any **FIVE** : **[30]**

a) Sprinklers and smoke detectors.

b) Dry and wet risers.

c) Any four acoustical defects.

d) Public address system.

e) Effects of plan shapes on hearing conditions within a built space.

f) Methods of cutting off air borne noise.

g) Two types of fire hydrants.

Total No. of Questions : 8] [Total No. of Pages : 3

P686

[3967] - 35
T.Y. B.Arch. (Theory)
QUANTITY SURVEYING AND SPECIFICATION WRITING
(Revised Course 2003 Yearly Pattern) (313440)

Time : 3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Answer all questions from each section.***
2) ***Answer to the two sections should be written in separate answer books.***
3) ***Neat diagram must be drawn wherever necessary.***
4) ***Figure to the right indicate full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
6) ***Assumed suitable data, if necessary.***

SECTION - I

Q1) Work out the quantities for the following items of work (Any Five) for the structure shown in the accompanying diagram (Fig. 1) Based on the details and data given : **[30]**

a) Earth work in excavation.
b) P.C.C. in Plinth.
c) R.C.C. column below ground and up to plinth level only.
d) R.C.C. plinth beam only.
e) 23cm thk. brick work in plinth only.
f) T.W door.
g) R.C.C. stair waist slab and step.
h) Neeru finish plaster for living hall and bed room only.
i) Inspection chamber, gully trap.
j) Bib cock and stop cock.
k) Oil paint for door only.

Q2) Write a short Note on (Any two) : **[10]**

a) Bill of quantity
b) Schedule of rate
c) Methods of calculation for load bearing structure
d) Spot item.

Q3) Rate analyses for the following item based on the material and labour cost as indicated below : (Any Two) **[10]**

P.T.O.

a) R.C.C column (1:2:4)
b) 35 cm brick masonry
c) Neeru finish plaster
d) P.C.C in foundation (1:4:8)

[**Material** = cement – Rs. 250/bag, sand- Rs. 1000/cum, Brick – Rs. 4000/
brass(1000no.), Neeru – Rs. 80/bag.
Labour = 1. Beam – Rs. 750/m^3,2 Brick work – Rs. 150 / m^3, 3. Neeru finish plaster – Rs. 50 / m^2, 4. P.C.C (1:4:8) – Rs. 160 / m^3]

Q4) Indent of material for items calculates quantities from Q.1. (Any Two) **[10]**
From Q.1 out of Ten quantities work out any two.

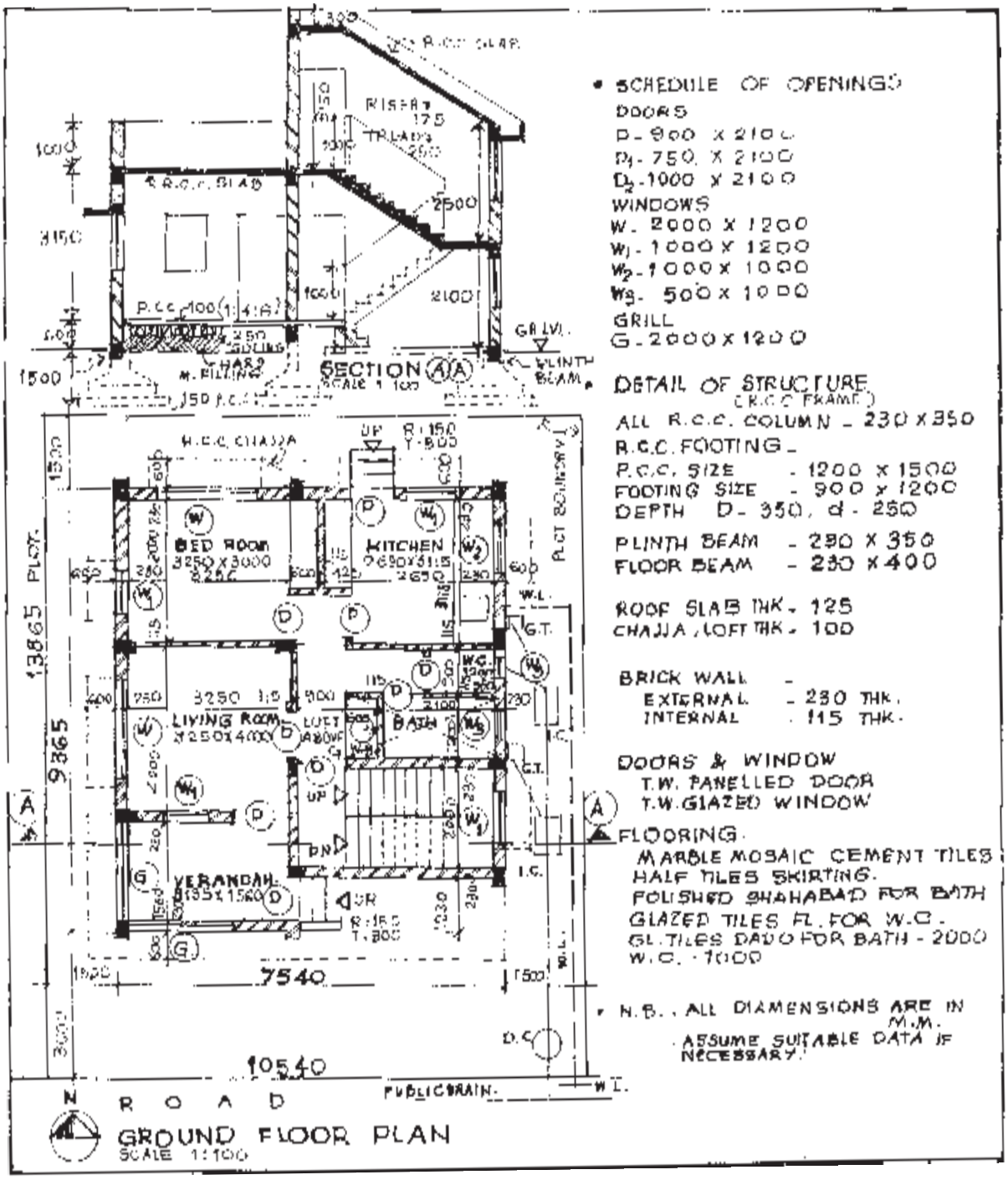
SECTION - II

Q5) a) How does specification writing help the architect and client. **[5]**
b) Write the general check list / sequence of writing specifications for any item of construction work. **[5]**

Q6) Write detailed material specifications of (any two) : **[10]**
a) Bricks.
b) Cement.
c) Cement tiles.
d) Sand.

Q7) Write in brief specifications on workmanship (any two) : **[10]**
a) 1:4 cement plaster with neeru finish.
b) Uncoursed rubble masonry.
c) White or colour wash.
d) Painting of wood work.

Q8) Specify following materials by trade / manufacturer's name (any ten) : **[10]**
a) Laminates for furniture.
b) Clay roofing tiles.
c) Lifts.
d) Cement paint
e) Glass films.
f) Kitchen sinks.
g) Ceramic tiles.
h) W.C. Pan.
i) G.I. pipes.
j) Electric Cables.
k) 43 Grade cement.
l) Modular switches.


SECTION A-A
SCALE 1:100
GROUND FLOOR PLAN
SCALE 1:100
BED ROOM
KITCHEN
LIVING ROOM
BATH
VERANDAH
7540
10540
13865
9365
ROAD
PUBLIC DRAIN
SCHEDULE OF OPENINGS
DOORS
D - 900 X 2100
D1 - 750 X 2100
D2 - 1000 X 2100
WINDOWS
W - 2000 X 1200
W1 - 1000 X 1200
W2 - 1000 X 1000
W3 - 500 X 1000
GRILL
G - 2000 X 1200
DETAIL OF STRUCTURE
(R.C.C. FRAME)
ALL R.C.C. COLUMN - 230 X 350
R.C.C. FOOTING -
P.C.C. SIZE - 1200 X 1500
FOOTING SIZE - 900 X 1200
DEPTH D - 350, d - 250
PLINTH BEAM - 230 X 350
FLOOR BEAM - 230 X 400
ROOF SLAB THK. - 125
CHAJJA / LOFT THK. - 100
BRICK WALL -
EXTERNAL - 230 THK.
INTERNAL - 115 THK.
DOORS & WINDOW
T.W. PANELLED DOOR
T.W. GLAZED WINDOW
FLOORING -
MARBLE MOSAIC CEMENT TILES
HALF TILES SKIRTING.
POLISHED SHAHABAD FOR BATH
GLAZED TILES FL. FOR W.C.
GL. TILES DADO FOR BATH - 2000
W.C. - 1000
N.B. - ALL DIAMENSIONS ARE IN M.M.
ASSUME SUITABLE DATA IF NECESSARY.

✪✡✪✡

Total No. of Questions : 3] [Total No. of Pages : 2

P687

[3967] - 42
Fourth Year B.Arch.
BUILDING CONSTRUCTION & MATERIALS - IV
(Yearly Pattern) (2004 Course)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Answers to the TWO SECTIONS should be written in SEPARATE BOOKS.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data if required.***
4) ***All questions are compulsory.***

SECTION - I

Q1) An Industrial shed of size 30 m x 50 m is to be constructed. Diffused natural light is required to be provided for the same. The minimum height of working space required for the shed is 6 m. Design an appropriate roofing system giving details of natural lighting, ventilation and rain water drainage to any appropriate scale, with plan and section at a scale of 1:200.

OR

A multipurpose hall of size 60mx 25m is to be constructed in a housing complex. Draw a plan to a scale of 1:100, and a detail section showing all structural details and a Suitable roofing system giving details of lighting, ventilation and rain water disposal to a scale of 1:50. **[30]**

Q2) Explain with neat sketches **ANY TWO** of the following : **[20]**

a) Rectangular and diagonal grid coffered slab.

b) Short and long span barrel vaults.

c) Raking and flying shores.

d) Expansion joints.

P.T.O.

SECTION - II

Q3) Write short notes on **ANY FIVE** with neat sketches. **[50]**

a) Two types of expansion joints for slabs and beams.

b) Any one system of curtain walling.

c) A cross section of a 12 m. wide road through a housing society, showing the necessary Surface water drainage, footpaths etc.

d) RCC north light barrel vault.

e) Construction of diaphragm retaining walls for multi basements.

f) A skimmer unit detail for a swimming pool.

g) Any two structural systems used to resist swaying problems in high rise buildings.

h) Hyperbolic Para bolides.

Total No. of Questions : 5] **[Total No. of Pages : 1**

P688

[3967] - 5001
Fifth Year B.Arch. (Term II)
PROFESSIONAL PRACTICE - II
(Yearly Pattern) (513482) (Theory)

Time :2 Hours] ***[Max. Marks :50***

Instructions to the candidates:-

1) ***Question 1 is compulsory.***
2) ***Solve any three of the remaining questions.***

Q1) Write short notes on any four of the following (5 Marks each) : **[20]**

a) Value, Price & Cost

b) Depreciation

c) Salvage Value & Scrap Value

d) Years purchase

e) Dominant Heritage

f) Customary Rights

g) Solatium

Q2) Describe the Land & Building Method of Valuation and its suitability. **[10]**

Q3) What is Arbitration? What are the advantages of arbitration? **[10]**

Q4) What is the process of Land Acquisition under the Land Acquisition Act? **[10]**

Q5) Define easement rights and give details of how they are acquired. **[10]**

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Total No. of Questions : 4] [Total No. of Pages : 2

P689

[3967] - 301
T.Y. B.Arch. (Interior Design) (Annual)
Building Technology and Materials - III (b)
(2008 Pattern) (313423) (Common to ID)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Use drawing sheet for Section I and Answer book for Section II.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***All questions are compulsory.***
5) ***Assume suitable data if necessary.***

SECTION - I

Q1) Solve any two out of given three. **[35]**

a) Draw plan & section showing Reinforcement detail of spine wall cantilever folded type staircase of flight width of 1.200mm and floor height of 3200mm to the scale 1 : 10.

Draw detail of folded riser and tread reinforcement (scale 1:5),

Draw detail at landing with railing fixing detail.

b) Provide a partly luminous suspended ceiling to an air-conditioned conference room of size 3000 X 4500.

Draw reflected ceiling plan showing framing. (scale 1:20)

Draw section to a scale 1:20 and

Draw details to a suitable scale.

c) Design and draw a single bed of Plan size 900mm X 2000mm in timber to the scale 1:20.

Draw plan and enlarged sections of the bed.

Give framing and bearing joinery details.

Draw isometric sketch.

P.T.O.

Q2) Draw details of the following (any three) : **[15]**

a) Modular co-ordination by C.B.R.I.

b) Pre-cast Pile foundation.

c) Bay-window in wood.

d) Ridge and eaves/gutter fixing details for a steel truss roof with GI. sheeting.

e) Types of R.C.C. retaining walls.

SECTION - II

Q3) Write notes on the following (any five) : **[30]**

a) Describe two types of basement waterproofing in short.

b) PVC Door & Window.

c) Use of glass products in building industry.

d) Reinforced brick work.

e) Explain the method of polishing a NEW wooden surface.

f) Cavity walls.

g) Role of reinforcement bars in column and beam.

Q4) Explain along with sketch any two of the following : **[20]**

a) Explain planning concepts, terminology and general construction of Escalator and elevators.

b) R.C.C. stub columns & stanchion fixing details.

c) Partition and paneling.

d) Balconies and Canopies.

Total No. of Questions : 4] [Total No. of Pages : 2

P690

[3967] - 303
T.Y. B.Arch. & (Interior Design)
Building Services - I (b)
(2008 Course) (Common to ID)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Answers to the TWO SECTIONS should be written in SEPARATE BOOKS.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data if required.***
4) ***All questions are compulsory.***

SECTION - I

Q1) Answer any **TWO** questions from the following :

a) What are the different types of filters used in an air-conditioning system? Explain with sketches. **[15]**

b) Calculate the no. of exhaust fans required for a community kitchen measuring 15m x7m x4m. Show the positions of fans in sketch plan and section. **[15]**

DATA

Diameters of fans in mm	Air handling capacity (cu.m/hr)
305	1900
380	4000
475	6800

c) What is 'refrigeration Cycle'? Explain the different components of an Air-conditioning System with appropriate sketches. **[15]**

Q2) Write short notes with neat sketches (Any four) : **[20]**

a) Fan coil units.

b) Cooling tower.

c) Plenum systems of mechanical ventilation.

d) Axial flow fan.

e) Types of extract grills.

f) Split A.C.

P.T.O.

SECTION - II

Q3) Answer any **TWO** questions from the following :

a) Explain structure born-noise. Explain the methods to control it through walls and floors. **[15]**

b) State Sabine's formula for calculating the time of reverberation and also state the optimum time of Reverberation for speech, music and meditational spaces. **[15]**

c) State the building regulations formulated for basements and high rise buildings in terms of fire escape. **[15]**

Q4) Write short notes with neat sketches (Any four) : **[20]**

a) Explain structure born-noise.

b) Masking effect of sound.

c) Cutting off air borne noise.

d) Flutter & echo.

e) Any one type of fire extinguisher.

f) Sprinkler system.

Total No. of Questions : 5] [Total No. of Pages : 4

P691

[3967] - 304
T.Y. B.Arch. (Interior Design)
QUANTITY SURVEYING & ESTIMATING (b)
(2008 Course) (313430) (Theory) (Common to ID)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

1) ***Answer all questions from each section.***
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 equally distributed.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Work out the quantities for the following items of work (Any eight) for the structure shown in the accompanying diagram (Fig. 1) Based on the details & data given : **[40]**

i) Excavation for column footings (only).

ii) C.C. (1 : $1\frac{1}{2}$: 3) column footings.

iii) C.C. (1 : $1\frac{1}{2}$: 3) columns in G. floor (only).

iv) B.B Masonry in C.M. (1:6) 230 thick - G.Floor (only).

v) Niroo Plaster to walls in C.M. (1:4) - Guest Rooms (only).

vi) 30 mm C. Flush door shutters to D_1 & D_2.

vii) C.C. (1 : $1\frac{1}{2}$: 3) floor slabs - 130 thick

viii) Polished kota floors excluding toilets.

ix) Ceramic Tile Dado (Ht = 2.10m) in toilets.

x) Aluminium Fully Glazed windows & ventilators. (Data - All Footing size 1200 × 1200, D = 360, d = 150 All columns - 230 × 450, All Floor beams - 230 × 450 mm All floor slabs - 130 mm, All lintols- 230 × 230 mm, bearing for lintols - 300 mm, All skirtings - 100 mm, floor to floor height 3200 mm, internal window jambs 50mm).

P.T.O.

b) State the unit of measurements for the following items of work as per IS 1200. **[10]**

i) P/C B.B. Masonry 110mm thick.

ii) P/F corrugated G.I. sheet cladding.

iii) P/F P.O.P. False ceilings.

iv) P/F 100 mm dia. C.l. soil pipes.

v) Structural steel in roof trusses.

vi) Overhead P.V.C. water tank.

vii) P/F T.W. door frames.

viii) Polish kota skirtings - 100mm Height.

ix) P/F Europeon W.C.

x) P/F Mangalore tile ridges.

SECTION - II

Q2) Write short notes on (Any two) : **[12]**

a) Schedule of Rates.

b) Characteristics & uses of Preliminary Estimates.

c) Overheads & Profit.

d) Rules for deductions for D/W/O from plaster.

Q3) Based on material & labour costs as indicated below, analyse & work out the "UNIT - RATES" for the following items of work. (Any Two) : **[14]**

a) P/L P.C.C. (1:3:6) levelling courses.

b) P/C B.B. Masonry in C.M (1:6) walls more than 230.

c) P/C C.C. ($1 : 1\frac{1}{2} : 3$) slabs (excl. rein) for floor slabs.

d) P/A 20-25 mm sand faced plaster in C.M. (1:4).

(Material rates - cement - 250 / bag, Aggregates - (700/cum), sand (av.) – 1200 / cum, std. Bricks - 4000/- per thousand)

(Labour Rates (a) Rs. 400/cum (b) Rs. 450 / cum (c) 2200 / cum (d) 130 / sq. Mt.)

Q4) Describe the items of work as described in Bill of Quantities (Any Two) stating the UNIT of measurement **[12]**

a) P/F 600×600×10 vitreous Tile Floorings.

b) P/C 450×900×1.5m invert Inspection chambers.

c) P/A 12-15 mm Niroo finished plaster in C.M. (1:4).

d) Plinth filling with murum from excavated stuff.

Q5) Indent the materials required for the following items of work (Any Two) :**[12]**

a) P.C.C. (1:4:8) levelling courses – Quan . 40 cum.

b) U.C.R. in C.M. (1:6) - Quan. 30 cub. Mt.

c) B.B.M. (1:6) 350 thick – Quan. 80 cub. Mt.

d) Ceramic Tile Floors (300 × 300) - Quan. 120 Sq. Mt.

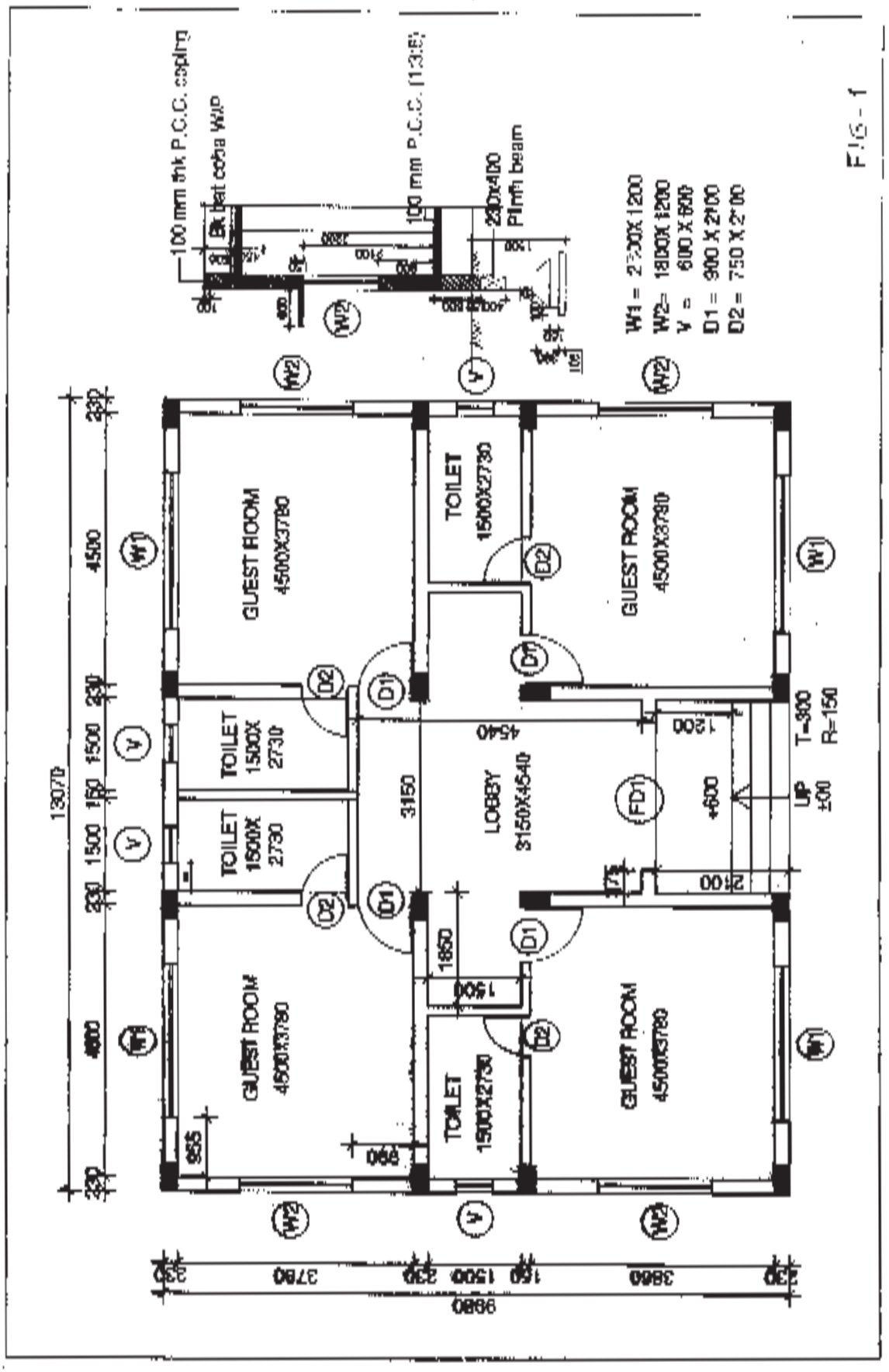
100 mm thk P.C.C. coping
Ek flat coba W/P
100 mm P.C.C. (1:3:6)
230x450
Plinth beam
W1 = 2700X1200
W2= 1800X1200
V = 600 X 600
D1 = 900 X 2100
D2 = 750 X 2100
GUEST ROOM
4500X3780
TOILET
1500X2730
LOBBY
3150X4540
UP
±00
T=300
R=150
13070
9980

FIG - 1

✪✡✪✡

Total No. of Questions : 10] [Total No. of Pages : 2

P692

[3967] - 305
T.Y. B.Arch. (Interior Design)
SPECIFICATION WRITING - (b)
(Annual Pattern 2008) (Common to ID)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:-

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

SECTION - I

Q1) Define Specification writing. Explain the importance of Specification writing in a contract document. **[10]**

Q2) Explain types of Specification giving example of one of the types Explain what you mean by restricted specifications. **[10]**

Q3) Discuss the relationship between working drawings & Specification writing. Discuss the relationship between bill of quantities & Specification writing.**[10]**

Q4) Write brief Specifications for (any two) : **[10]**

a) External brick wall

b) Sand face cement plaster

c) R.C.C. Slab

d) Ceramic tile flooring

Q5) Write Material Specifications for (any two) : **[10]**

a) Stone

b) M.S. Reinforcement

c) Cement

d) Timber

P.T.O.

SECTION - II

Q6) Write short notes on (any two) : **[10]**

a) Types of waterproofing
b) W. B. M. Road
c) Solar panels
d) Elevators

Q7) Explain the function of (any four) : **[10]**

a) Inspection chamber
b) Water seal in traps
c) Fuse
d) Filters in air conditioners
e) Septic tank
f) Earthing

Q8) Write short notes on (any two) : **[10]**

a) Earthing
b) Renewable energy applications
c) Types of fencing for a plot
d) Types of electric wiring

Q9) Write detailed specifications for **[10]**

a) Door for toilet for a disabled person
b) Specifications for Ramp for a disabled person

Q10) Write names of manufacturer for the material (any ten) : **[10]**

a) Laminate
b) Lift
c) External paint
d) Drainage pipes
e) Cement
f) Glazed tiles
g) Wash basin
h) A.C. Sheets
i) Air conditioner
j) Water storage tank
k) Roofing tiles
l) Aluminium windows

Total No. of Questions : 10] **[Total No. of Pages : 2**

P693

[3967] - 2002
S.Y. B.Arch. (Interior Design)
HISTORY OF ARCHITECTURE, ART, CULTURE AND INTERIORS DESIGN - II
(Annual Pattern)

Time :3 Hours] ***[Max. Marks :100***

Instructions to the candidates:-

1) ***Question 1 from section I and Question 6 from Section II are compulsory.***
2) ***Solve any three of the remaining in Section I and Section II respectively.***
3) ***Answers to be written in separate note books for each section.***
4) ***Figures to the right of the questions indicates full marks.***

SECTION - I

Q1) Write short notes with appropriate sketches (Any four) : **[20]**

a) Indo Islamic arches

b) Pendentives

c) Urushrungas

d) Column order-Gupta

e) Arabesque

f) Amalaka

g) Chaumukh Temple

Q2) Describe the evolution of tombs with ref. to Indo Islamic Architecture. **[10]**

Q3) Describe the Bijapur provincial style of architecture. **[10]**

Q4) Describe the early Chalukyan style of temple architecture with one suitable example. **[10]**

Q5) Describe salient features of Chola temples. **[10]**

P.T.O.

SECTION - II

Q6) Write short notes with appropriate sketches (Any four) : **[20]**

a) Triforium gallery

b) Rib and panel vault

c) Grand Cornice

d) Incan Stone work

e) Angor wat

f) Bell Tower

g) Forbidden city

Q7) Describe the Palladian Villa highlighting the characteristic features. **[10]**

Q8) Differentiate between French Gothic and English Gothic Architecture. **[10]**

Q9) Discuss the salient features of Renaissance art and Baroque art. **[10]**

Q10) Describe the salient features of Romanesque architecture. **[10]**

Total No. of Questions : 5] [Total No. of Pages : 2

P694

[3967] - 2003

S.Y. B.Arch. (Interior Design)

CONSTRUCTION SERVICES AND MATERIALS - II

(Theory) (Annual Pattern)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***All the sections and questions are compulsory.***
2) ***Answers to Section I, Section II and Section III to be written in separate answer sheets.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures on the right indicate full marks.***
5) ***Assume suitable data wherever necessary.***

SECTION - I

Q1) An office of size 3.6m x 5.0m is to be provided with a suspended ceiling using suitable materials. Also provide for the lighting fixtures. Draw a reflected ceiling plan indicating framing and a section to the scale of 1:20. **[10]**

Any 2 enlarged details to the scale of 1:5. **[10]**

OR

A steel window of size 1.2m x 1.2m with sill level of 900mm is to be provided in an apartment. Draw plan, section and elevation of the window to the scale of 1:10. **[15]**

Enlarged details of glass fixing to the frame to the scale of 1:5. **[5]**

Q2) A timber truss roof is to be provided for a workshop 10m x 15m with GI sheet roofing, with 750mm overhang on both sides, clear internal height is 4.5m and external walls are 350mm thk in brick, strengthened with 450mm x 450mm brick piers at 3.0m c/c.

Draw key plan & section showing trusses & members to 1:50 scale. **[15]**

Draw enlarged details of fixing of sheets. **[5]**

OR

An entrance of a bungalow is to be provided with a double leaf TW paneled door in the opening of size 1.2m x 2.1m. Draw plan, elevation & section of the door to the scale of 1:10. **[15]**

Any one important detail to the scale of 1:5. **[5]**

P.T.O.

Q3) Explain with sketches any two of the following : **[10]**

a) Sketch the reinforcement details of RCC chajja & lintel.

b) Draw the section through the Load bearing compound wall up to foundation.

c) Draw the Lintel detail for the Cavity wall.

d) Draw the neat sketches for hollow concrete Lintel, Beam and Sill block.

SECTION - II

Q4) Write short notes on any 5 of the following : **[25]**

a) Types of taps.

b) Domestic Water distribution systems.

c) Differentiate between artificial and natural light.

d) Three phase electric supply.

e) Importance of acoustics in Interiors.

f) Sound diffusion techniques.

g) Over Head tanks and Under Ground Tanks.

SECTION - III

Q5) Write short notes on any 5 of the following : **[25]**

a) Write short note on IPS flooring.

b) Vault & Dome Construction in masonry.

c) Types of Pointing.

d) Slump test

e) Explain various types of flexible DPC materials.

f) Workability of concrete.

g) Vitrified tiles.

Total No. of Questions : 11] **[Total No. of Pages : 2**

P1180

[3967] - 1151

F.Y. M.Arch.

(Architectural Conservation)

INTRODUCTION TO CONSERVATION

(2008 Pattern) (Theory) (Sem. - I) (New Course)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Answers to the two sections to be written in separate answer books.***
2) ***Attempt any four questions from Section - I***
3) ***Q.No. 7 is Compulsory and answer any 3 questions from the remaining questions in Section - II.***
4) ***Neat diagrams / sketches must be drawn wherever necessary.***
5) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain in detail the causes of decay in a cultural property. **[10]**

Q2) Give a critical appraisal of Burra Charter. **[10]**

Q3) Trace the history of Conservation in Europe. **[10]**

Q4) List out four World Heritage sites. Also explain in brief the significance of those. **[10]**

Q5) Write Short Notes on: **[10]**

a) John Ruskin.

b) George Gilbert Scott.

Q6) Describe the steps associated with Documentation of Historic Sites. **[10]**

P.T.O.

SECTION - II

Q7) Write Short Note (any one): **[5]**

a) Authenticity.

b) Integrated Conservation.

Q8) Explain the development of Archeology in India. **[10]**

Q9) Discuss the detail program for the maintenance of a heritage structure. **[10]**

Q10) Discuss the salient features of 'Charter on built vernacular heritage'. **[10]**

Q11) Explain 'Degrees of Intervention' in detail. **[10]**

Total No. of Questions : 11] **[Total No. of Pages : 2**

P1181

[3967] - 1153

F.Y. M.Arch. (Architectural Conservation)

STRUCTURAL CONSERVATION MATERIALS AND TECHNIQUES - I

(2008 Pattern) (Theory) (Sem. - I)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Section - I and Section - II have to be solved in separate sheets.***
2) ***Q.No. 7 from section II is Compulsory and answer any 4 questions from Section - I and any three from the remaining questions in Section - II.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Describe the various types of decay occurring in timber roof construction. **[10]**

Q2) Differentiate between Ferrous and non ferrous metals. Elaborate on the use of ferrous metals in different parts of built heritage. **[10]**

Q3) Elaborate any two major defects observed in Cuprous metal also describe the methods to conserve the same. **[10]**

Q4) Classify the types of lime and elaborate on the precautions to be taken before and during lime work construction. **[10]**

Q5) Describe in detail the any two types of stone preservation techniques. **[10]**

Q6) Enumerate the types of clay used in clay construction and describe the common defects observed in clay construction. **[10]**

P.T.O.

SECTION - II

Q7) Write Short Note (any one): **[5]**

a) Efflorescence in brick masonry.

b) Structural cracks in timber.

Q8) What are the various interventions to strengthen masonry wall constructions. **[10]**

Q9) Enlist the different weathering agents that cause defects in masonry. **[10]**

Q10) Give a brief account of measures followed to strengthen the domes and vaults in masonry constructions. **[10]**

Q11) The Royal palaces in Maharashtra are decorated with plethora of exquisite fenestration. Suggest the remedial measures to repair the defects caused due to weathering and neglect. **[10]**

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1182

[3967] - 1154

F.Y. M.Arch. (Environmental Architecture)

SOCIO-ECONOMIC ASPECTS OF PLANNING

(Sem. - I) (New Syllabus) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Q.No. 4 from Section - I and Q.No. 8 from Section - II are compulsory. Answer any 2 questions from Section - I and any 2 questions from Section - II from the rest.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures at right indicate full marks.***
4) ***Draw neat diagrams wherever necessary.***

SECTION - I

Q1) Discuss problems associated with urban land use. **[10]**

Q2) What is role of government in the distribution of economic activities? What are tools available to government in distribution of industries and what are limitations to government's role? **[10]**

Q3) 'Migration is a selective process'. Explain. **[10]**

Q4) Write short notes on any 4 of the following: **[20]**

a) Urban land market.

b) Age-sex pyramid.

c) Spread effect & Back wash effect.

d) Market area analysis for industrial location.

e) Role of private sector in infrastructure management.

P.T.O.

SECTION - II

Q5) Most major problems are due to industrial capitalization i.e. growth of urbanization etc. What solutions and alternatives do you find practicable in India. **[10]**

Q6) 'Globalization is affecting urban design and architecture'. Support the statement with illustrations. **[10]**

Q7) Explain man and environment relationship in the context of urban and rural life. **[10]**

Q8) Write short notes on any 3 of the following: **[15]**

a) Industrial revolution and its environmental impacts.

b) Agglomeration economies.

c) Cost benefit analysis.

d) SEZ.

Total No. of Questions : 6] **[Total No. of Pages : 2**

P1183

[3967] - 1155

First Year M.Arch. (Environmental Architecture)

EA 102 : URBAN AND REGIONAL PLANNING

(Sem. - I) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Question numbers 1 and 2 is compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Your answers will be valid as whole.***

SECTION - I

Q1) Why cities should be made beautiful? How it affects 'Image of City". How it matters to city? Is it spending or an investment? Discuss important city beautiful movements in world. What shall be done priority basis in Indian scenario? **[15]**

Q2) Match ***any five*** from the following: **[5]**

1.	Egyptian Architecture	Finance Based Planning
2.	Ian Mcgarh	New Landscape
3.	Charles Correa	Image of City
4.	Kevin Lynch	Design with Nature
5.	City Development Plan	Planning as Social and Political Tool
6.	Development Plan.	Legal Based Planning.

Q3) Write short notes on ***any three***: **[15]**

a) Ian Mcgarh.

b) Effects of Industrial Revolution.

c) Negative and Positive Aspects of Special Townships in India.

d) Five Year Planning in India.

P.T.O.

SECTION - II

Q4) Explain the term '*Land Pooling*' and discuss the various acts, which allow land pooling as technique. Also mention implemented government and private projects using land pooling. Also discuss the merits and demerits of land pooling. State the importance of land pooling in implementing Development Plan. **[15]**

OR

State the rationales of planning? Debate about following:

a) Development Plan vs. City Development Plan.

b) Legal Planning Approach vs. Advisory Planning Approach.

Also state which of the above policies nation like should adopt considering present scenario.

Q5) State about the 'Urban Renewal' and also explain its roots. State its relevance, validity and principles. What is Jawaharlal Nehru Urban Renewal Mission in India? How it is related to the 'Urban Renewal'? **[15]**

Q6) Write short answers on ***any two***: **[10]**

a) Population Studies.

b) Land Suitability Analysis and Its application.

c) Discuss current tools of implementation of infrastructure projects.

Total No. of Questions : 4] **[Total No. of Pages : 2**

P1184 **[3967] - 1156**

First Year M.Arch. (Environmental Architecture)

EA 103 : HOUSING ENVIRONMENTAL PLANNING & POLICIES

(2008 Pattern) (New Course) (Theory Paper) (Sem. - I)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) **Write briefly (Any Two):** **[10 marks each]**

a) Write briefly about the various Green Building Rating Systems. How do the Green Buildings contribute to the environmental commitment of a city?

b) Express your opinion about Pune's transportation issues. What, in your opinion, is the way forward to achieve Sustainable Transportation strategies in Pune.

c) Write in detail about the National Environmental Policy of India. Discuss what are the priorities established by the Environmental Policy of India.

Q2) **Write Short Notes on (Any Four):** **[5 marks each]**

a) Eco Housing Pune.

b) Sustainable Site management.

c) Role of an Environmental Planner.

d) Sustainable Development.

e) Citizen Participation.

P.T.O.

SECTION - II

Q3) **Write briefly (Any Two):** **[10 marks each]**

a) Express your opinion about the Maharashtra State Housing policy. What are the salient features of this policy and how does it impact the housing sector in Maharashtra.

b) Describe in detail the Real Estate scenario in Pune. How can the stakeholders in the real estate sector move towards bringing in energy efficiency in this sector?

c) Write briefly about the various Rural Housing programmes established by the central and state government in India.

Q4) **Write Short Notes on (Any Three):** **[5 marks each]**

a) GRIHA.

b) Co-operative Housing.

c) Affordable Housing.

d) Slum redevelopment schemes.

e) Housing Density Vs FSI calculations.

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1185

[3967] - 1157

M.Arch. (Landscape Architecture)

NATURAL SCIENCES

(Sem. - I) (Backlog) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Q.No. 1 and Q.No. 6 are compulsory.***
2) ***Out of remaining in Section - I solve any three and in Section - II Solve any one.***
3) ***Neat sketches must be drawn wherever necessary.***
4) ***Section - I - 40 Marks and Section - II - 35 Marks.***

SECTION - I

Q1) Make a comparison of Metamorphic and Sedimentary Rocks. **[10]**

Q2) Explain the impact of weather on the rocks. **[10]**

Q3) Explain soil components and different types of soils. **[10]**

Q4) Explain Artesian wells and Dykes **[10]**

Q5) With the help of sketches explain the occurrence and movement of ground water. **[10]**

P.T.O.

SECTION - II

Q6) Short notes on any of the following (Any 5). **[5 Marks Each]**

a) Soil - Plant Relationship.

b) Solar Radiation.

c) Wetland Biome.

d) Atmosphere.

e) Osmosis.

f) Long day Plants.

Q7) Write short notes on the following: **[10]**

a) Plant Succession.

b) Trees as Micro-climatic control.

OR

Q8) Describe in brief classification of forests across the world. Types of Indian forests among with dominant species. **[10]**

Total No. of Questions : 7] **[Total No. of Pages : 2**

P1186

[3967] - 1158

M.Arch. (Landscape Architecture)

LANDSCAPE TECHNOLOGY - I

(Sem. - I) (Backlog) (New 2008 Course) (Credit System Syllabus)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Section - I carries 40 marks and Section - II carries 35 marks.***
3) ***Base drawings related to questions are enclosed if any.***
4) ***Drafting equipment and calculators may be used, if required.***
5) ***Assume necessary data if required.***
6) ***Answer questions of each section on SEPARATE answer sheets.***

SECTION - I

Q1) What does a contour line signify? Explain the characteristics and uses of contour lines showing suitable examples. Illustrate the answers with diagrams. **[10]**

Q2) What are the different methods of retaining earth? Explain with sketches. **[10]**

OR

What are the effects of urbanization on storm water run-off? Explain the measures for reducing and delaying storm water run-off in urban areas.

Q3) Write short notes on **any two** of the following: **[10]**

a) Retention and Detention ponds.

b) Rain Water Harvesting.

c) Manning's and Continuity equation.

Q4) A 20-acre drainage area consists of 5-acre parking area (C = 0.9), 7 acres of lawn (C = 0.3) and remaining area with trees (C = 0.3). Intensity of 10 yr design storm is 4 inches per hr. Calculate the peak rate of runoff. **[10]**

P.T.O.

SECTION - II

Q5) A 10 m grid is marked on the site. The spot levels given are as under. Mark the positions of all the whole number contours passing through them. Assess the gradient between A1 and B2.

A1	76.7	A2	75.8
B1	75.5	B2	74.8
C1	75.1	C2	74.7

[10]

Q6) What is soil erosion? Explain the causes and the methods to control soil erosion. **[10]**

OR

What are the methods of computing cut and fill volumes? Explain any one method with supportive sketches.

Q7) Draw a plan, cross section of a typical road (8 m wide + 1.5 m wide swale on both sides) and minimum 2 contour signatures for the same with reference spot level as 25 meter on the centerline of the road. **[15]**

Given:

a) Longitudinal slope for the road: 4%.

b) Road crown: 0.10 m.

c) Longitudinal slope for the swale: 4%.

d) Swale depth: 0.10m.

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1187

[3967] - 1159

M.Arch. (Landscape Architecture)

THEORY OF LANDSCAPE ARCHITECTURE - I

(Sem. - I) (Backlog) (New 2008 Course)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Q.No. 1 and Q.No. 6 are compulsory.***
2) ***Out of remaining in Section - I solve any three and in Section - II Solve any one.***
3) ***Neat sketches must be drawn wherever necessary.***
4) ***Section - I - 40 Marks and Section - II - 35 Marks.***

SECTION - I

Q1) Make a comparison of the French and English Landscape design. **[10]**

Q2) Explain the historical influences which you think have had an effect on contemporary attitudes to the design of landscapes in India today. **[10]**

Q3) On the basis of a set of common design aspects compare the use of water in any two traditions or styles of landscape design. **[10]**

Q4) Explain the basic principles embedded in Babylonian gardens. **[10]**

Q5) With the help of sketches explain the salient features of Mughal gardens in Kashmir, what principles do they demonstrate about siting and the relationship between a designed landscape and its surroundings? **[10]**

P.T.O.

SECTION - II

Q6) Short notes on any five of the following: **[5 Marks Each]**

a) Chinese gardens.

b) Red Books.

c) Vaux le Vicomte.

d) Landscape in the colonial period in India.

e) Egyptian Gardens.

f) Andre - le - Notre.

Q7) Write short notes on the following: **[10]**

a) William Kent.

b) Capability Brown.

OR

Q8) Explain briefly Renaissance landscape Architecture. **[10]**

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1188

[3967] - 1160

M.Arch. (Computer Applications)

INTRODUCTION TO COMPUTER APPLICATIONS

(Sem. - I) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Assume suitable data, if necessary.***
2) ***Solve any 3 questions from each section.***
3) ***Answers to the two sections should be written in separate books.***
4) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) a) What is building automation? Explain its importance in today's life. **[6]**

b) How we can differentiate sensors & how these sensors can be used in building automation. **[7]**

Q2) a) Design a lighting system for conference room having seating capacity of 20 persons. **[6]**

b) How can you control the access of any IT building? **[7]**

Q3) a) What is Architectural visualization? Describe advantages of computer applications in visualization in architecture. **[6]**

b) What are the presentation techniques to make an architectural project successful? **[7]**

Q4) a) Explain in brief parametric modeling. **[6]**

b) i) What is RGB model and CMYK model? **[3]**

ii) What is data visualization and knowledge visualization. **[3]**

P.T.O.

SECTION - II

Q5) a) What is GIS and describe its components and applications. **[6]**

b) Explain basic concept & characteristics of remote sensing. **[6]**

Q6) a) Which are the types of Map Projection? **[7]**

b) i) How we can say GIS is a part of information system? **[3]**

ii) What is raster and vector data. **[3]**

Q7) a) Describe needs and importance of MIS & define MIS. **[6]**

b) Which objectives & functions of MIS can be useful for management Information system? **[7]**

Q8) a) Describe failure reasons of MIS & How we can overcome this problem. **[6]**

b) What is the use of MIS in building industry? **[6]**

Total No. of Questions : 10] [Total No. of Pages : 2

P1189

[3967] - 1161

M.Arch. (Computer Applications)

HUMAN COMPUTER INTERFACE

(Theory) (2008 Course) (Sem. - I)

Time : 3 Hours] *[Max. Marks :75*

Instructions to the candidates:

1) ***Answer any THREE questions from each section.***
2) ***Answer to the two sections should be written in separate 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) What is the need to study "Human Computer Interaction" for producing good quality interactive software? **[6]**

b) Explain the similarities and differences in human memory and computer memory. **[6]**

Q2) a) What is reasoning? Explain different types of reasoning with example? **[6]**

b) Explain eight golden rules of interface design. Give suitable examples to justify your answer. **[6]**

Q3) a) Explain the guidelines for data display and data entry. **[6]**

b) Explain GOMS model. Create a GOMS description of task hierarchies for "cut and paste Word" in a word document. Identify Goals, sub goals, methods, Operators and Selection Rules. **[6]**

Q4) a) State and explain pillars of interface design process. **[6]**

b) Explain navigation design with example. **[6]**

Q5) Write short note on following (Any Two): **[13]**

a) Prevention of errors.

b) Principle of Diversities.

c) Participatory design.

d) Scenarios.

P.T.O.

SECTION - II

Q6) a) Explain virtual environment. How virtual reality help in good interactive design? **[6]**

b) Enumerate different usability evaluation and testing techniques. **[6]**

Q7) a) Explain individual and multiple windowing design. **[7]**

b) Explain dialog design notation. **[6]**

Q8) a) Explain the difference and similarities between online help and printed manuals. **[6]**

b) Discuss important design issues involved in designing a webpage. **[6]**

Q9) a) Explain issues in face to face communication for CSCW. **[6]**

b) State and explain techniques to design an interface to assure its error free usage. **[6]**

Q10) a) Role of HCI in animation. **[6]**

b) Explain OAI model as applied to website design. Which different interface objects metaphors and interface action handles are used while designing a webpage? **[7]**

Total No. of Questions : 10] [Total No. of Pages : 2

P1190

[3967] - 1162

M.Arch. (Computer Applications)

CA -103: FUNDAMENTALS OF COMPUTER GRAPHICS

(2008 Course) (Sem. - I)

Time : 3 Hours] *[Max. Marks :75*

Instructions to the candidates:

1) ***Answer any Three questions from each section.***
2) ***Answers to the two sections should be written in separate sheet.***
3) ***Use of logarithmic tables, slide rules and electronic pocket calculator is allowed.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Figures to the right indicate full marks.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) What is computer graphics? Comment on bitmap and vector graphics. **[7]**

b) What are various applications areas of computer graphics in digital architecture and visualization? **[6]**

Q2) a) What is transformation? How to perform rotation of 2D object? **[6]**

b) With suitable diagram explain parallel and perspective projection. **[6]**

Q3) a) What is polygon? What are various methods for filling a polygon? **[6]**

b) What is the need of visible-surface detection algorithms? Broadly classify these algorithms. **[6]**

Q4) What is clipping? Explain the process of clipping a line. **[12]**

Q5) Write short notes on: **[12]**

a) BMP.

b) Character generation.

c) Viewing parameters.

d) 3D Clipping.

P.T.O.

SECTION - II

Q6) Explain the RGB, CYM color models and draw suitable color cubes to explain the concept. **[13]**

Q7) a) What is a curve? Explain how they are generated. **[6]**
b) How fractals are used in design? Explain. **[7]**

Q8) a) What are the primary purposes of the GKS standard? Also explain GKS Output primitives. **[6]**
b) Differentiate between vector and raster scan methods. **[6]**

Q9) Explain the applications of computer graphics in architectural visualization. Give suitable example. **[12]**

Q10) Write short notes on any TWO: **[12]**
a) CRT display.
b) Plotters.
c) B-Splines.
d) Reflection and shadows.

Total No. of Questions : 9] **[Total No. of Pages : 2**

P1191

[3967] - 1163

First Year M.Arch. (Computer Applications)

THEORY OF DIGITAL ARCHITECTURE - I

(Old & New) (Sem. - I)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Question No. 1 is compulsory.***
2) ***Solve any 2 questions from Question 2,3,4.***
3) ***Solve any 3 questions from Section - II.***
4) ***Answers to the two sections should be written in separate books.***
5) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) a) Discuss the influence of the study of nature & natural systems on Architectural design. **[10]**

b) Write note on 'Deconstruction'. **[5]**

Q2) How 'Pop Culture' influenced work of Archigram? Explain. **[12]**

Q3) Explain 1980's Radical Avant Garde movement in the field of art & architecture. **[12]**

Q4) Discuss the radical concepts evolved by Ar. Bernard Tschumi & their future implication. **[12]**

P.T.O.

SECTION - II

Q5) Explain in brief influence of digital technology on Communication, Music & Art. **[12]**

Q6) Which are the intellectual paradigms that shaped modern philosophy & modern architecture those emerged after the industrial revolution? **[12]**

Q7) Explain with example, how the visionary architecture of 20th century is shaping today's world with the help of innovative digital technologies. **[12]**

Q8) Discuss the trends & developments in the realm of architectural theories since the renaissance till today. **[12]**

Q9) Define 'Biotech Architecture' & explain its proposal through appropriate examples. **[12]**

Total No. of Questions : 11] **[Total No. of Pages : 2**

P1192

[3967] - 1164

F.Y. M.Arch. (Architectural Conservation)

STRUCTURAL CONSERVATION : MATERIALS AND TECHNIQUES - II

(Sem. - II) (2008 Pattern) (Theory)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Section - I and Section - II have to be solved in separate sheets.***
2) ***Question 7 from Section - II is compulsory and answer any four questions from Section - I and any three from the remaining questions in Section - II.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Discuss the use of ethers in the process of conservation of built heritage. **[10]**

Q2) Define Bronze disease. Describe any two chemical methods to preserve cuprous metals. **[10]**

Q3) Discuss in detail the cleaning and restoration of traditional wall painting. **[10]**

Q4) Describe in detail the role of adhesives in conservation of clay objects. **[10]**

Q5) Classify the various types of solvents used in conservation. Differentiate between reversible and irreversible processes. **[10]**

Q6) Describe the various techniques involved in the conservation of stained glass. **[10]**

P.T.O.

SECTION - II

Q7) Write short note (any one): **[5]**

a) Rising Damp in structures.

b) Mechanical Excitation.

Q8) Describe the various actions and forces acting on historic structures. **[10]**

Q9) Discuss the proactive and reactive measures for earthquake resistance of historic structures. **[10]**

Q10) Describe in detail the various methods used to strengthen the dome and arches in historic construction. **[10]**

Q11) Discuss in detail the process of visual inspection of a historic building and the remedial measures adopted to conserve the defects pertaining to the structure within the context of historic core of Pune city. **[10]**

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1193

[3967] - 1165

M.Arch. (Arch. Conservation)

CONSERVATION MANAGEMENT

(Sem. - II) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Write answers to each section in a separate answer book.***
2) ***Question 1 from Section - I & Question 5 from Section - II are compulsory.***
3) ***Solve any two of the remaining questions from each Section.***

SECTION - I

Q1) Write notes on any two of the following: **[20]**

a) Conservation Management process of a historic site.

b) Role of 'disaster management' in Conservation.

c) Financial management in conservation of a heritage site.

Q2) What are the stages involved in the planning of a conservation project? Discuss each stage in brief. **[10]**

Q3) Explain the term 'Culture as a superior commodity' with reference to the economics involved in a heritage site. **[10]**

Q4) How does community awareness work in moulding the mind-set about 'heritage'? **[10]**

P.T.O.

SECTION - II

Q5) Write short notes on any three of the following: **[15]**

a) Non-use values of heritage.

b) Existence and intrinsic values of heritage.

c) Carrying capacity.

d) Public participation process in Heritage Management.

Q6) What is the role of 'Visitor management' in the effective management of a heritage site? **[10]**

Q7) What does the term 'sustainable tourism' mean? Explain in brief the application of the term in reference to a historic site of your choice. **[10]**

Q8) Explain in brief the importance of 'environment impact assessment' in the conservation of a heritage site. **[10]**

Total No. of Questions : 7] **[Total No. of Pages : 1**

P1194

[3967] - 1166

M.Arch. (Architectural Conservation)

INTRODUCTION TO ARCHAEOLOGY AND MUSEOLOGY

(Sem. - II) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Attempt ANY FIVE questions.***
2) ***Each question carries equal marks.***

Q1) What are the main objectives kept in mind while planning a museum building? Give suitable architectural plan and display techniques you would employ for an art museum.

Q2) What are the preservation techniques employed for art objects like stone, manuscript and textile?

Q3) Explain role of various sciences in archaeology.

Q4) Explain various types of artefacts found at archaeological sites.

Q5) How are archaeological sites located? Discuss various field methods of locating archaeological sites.

Q6) Write an essay on different branches of archaeology.

Q7) What are the main aims and functions of the museum? How many types of museums are there in India?

Total No. of Questions : 6] **[Total No. of Pages : 2**

P1195 **[3967] - 1167**

First Year M.Arch. (Environmental Architecture)

ENVIRONMENTAL LAWS AND LEGISLATION

(Sem. II) (Theory) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain in detail the background of Water (Prevention and Control of Pollution) Act, 1972 and the change in the powers of Pollution Control Board after year 1986. **[15]**

OR

Explain in detail the need for Energy Conservation Act, 2001 with the functions of Energy Efficiency Bureau.

Q2) Public Liability Insurance Act, 1991 for the first time gave protection to people having no relation with an Industry dealing with Hazardous substances. **[10]**

OR

Explain in detail the Environmental remedies available under Law of crimes, Law of Torts and Constitution of India.

Q3) Write Short Notes with appropriate examples (Any Three): **[15]**

a) 'Strict Liability'.

b) 'Absolute liability'.

c) 'Common but differential responsibly'.

d) 'Precautionary Principle'.

e) 'Common Neighborhood Principles'.

P.T.O.

SECTION - II

Q4) Explain the concept of Eco-Sensitive Zone with basic criteria to declare ES Zone and critically analyze the concept against Mahabaleshwar Panchagani Eco-Sensitive Zone. **[15]**

OR

Explain in detail the Environment Impact Assessment as a tool for Risk Analysis.

Q5) Describe in detail the changing focus of International conventions from Stockholm Declaration to Copenhagen. **[10]**

OR

Proper Environmental planning and its implementation is the key for eco-cities.

Q6) Write Short Notes (Any Two): **[10]**

a) Dumping grounds and Landfill sites.

b) UNEP.

c) ENVIS a government initiative.

d) Atomic Energy.

Total No. of Questions : 4] **[Total No. of Pages : 2**

P1196 **[3967] - 1168**

First Year M.Arch. (Environmental Architecture)

ENVIRONMENTAL MANAGEMENT & ECOLOGICAL LAND PLANNING

(Sem. II) (Theory) (New Course) (613208)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Answer all questions.***
2) ***Figures to the right indicate full marks.***

SECTION - I

Q1) **Write briefly (Any Two):** **[10 marks each]**

a) Describe five ways by which "***Significant Aspects***" can be addressed in an ISO - 14001 Environmental Management System.

b) Write in detail about the Global Reporting Initiative (GRI).

c) Describe various environmental impacts of a consumer product throughout the lifecycle of the product.

Q2) **Write Short Notes on (Any Four):** **[5 marks each]**

a) Eco Design.

b) Environmental Accounting.

c) Environmental Management System Review.

d) SMART Target.

e) Cradle to Grave principle.

f) Continual Improvement.

P.T.O.

SECTION - II

***Q3*) Write briefly (Any Two):** **[10 marks each]**

a) How to analyse forest ecosystems? Write in detail what is forest, ideal conditions in forest and various survey methods used for analysis.

b) Write a detailed note on importance of streams, riparian zone and the need for stream restoration.

c) What is Ecology? Explain holistic approach behind the study of ecology. Explain the concept of an ecosystem with respect to various components of ecosystem.

***Q4*) Write Short Notes on (Any Three):** **[5 marks each]**

a) Biome.

b) Ecological Assessment.

c) Biogeographic Zones of India.

d) River Ecology.

e) Evergreen vegetation.

Total No. of Questions : 4] **[Total No. of Pages : 2**

P1197 **[3967] - 1169**

Second Year M.Arch. (Landscape Architecture)

LA - 206: LANDSCAPE TECHNOLOGY - II

(Sem. II) (New) (2008 Course)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Section - I carries 40 marks and section - II carries 35 marks.***
3) ***Base drawings related to questions are enclosed if any.***
4) ***Drafting equipment and calculators may be used, if required.***
5) ***Assume necessary data if required.***
6) ***Draw diagrams/sketches wherever necessary.***
7) ***Answer questions of each section in SEPARATE answer books.***

SECTION - I

Q1) Explain with diagrams, water conservation techniques for a sloping terrain with gradients ranging from 5% to 15%. **[10]**

Q2) Answer any two of the following: **[30]**

a) Explain the scope of a landscape architect in relation to disturbed landscapes.

b) Explain with example a landscape architect's approach in treating a garbage dumping site for future use.

c) Explain the significance and landscape potential of quarries as open spaces in urban context.

P.T.O.

SECTION - II

Q3) Describe landscape engineering measures for erosion control of stream banks. **[15]**

OR

Describe Environmental issues related to lakes in urban areas.

Q4) Write brief notes with sketches on <u>any two</u> of the following: **[20]**

a) Parkways and role of a landscape architect.

b) Environmental impacts of a channelized river.

c) Landscape engineering measures for erosion control of steep slopes in Maharashtra.

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1198

[3967] - 1170

M.Arch. (Landscape Architecture)

THEORY OF LANDSCAPE ARCHITECTURE - II

(Sem. - II) (2008 Pattern) (New)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Q.No. 1 and Q.No. 6 are compulsory.***
2) ***Out of remaining in Section - I solve any three and in Section - II solve any one.***
3) ***Neat sketches must be drawn wherever necessary.***
4) ***Section - I - 40 Marks, Section - II - 35 Marks.***

SECTION - I

Q1) What is 'Landscape structure'? Explain using examples from new town developments or metropolitan cities. **[10]**

Q2) Explain the origin of public parks and Park systems. **[10]**

Q3) Write a note on the Contribution to the Landscape Design by Geoffrey Jellicoe. **[10]**

Q4) Industrialization and urbanization in the mid 19th century resulted in the emergence of new landscape types. Explain in detail. **[10]**

Q5) What are the role of open spaces in Haussmann's Plan for Paris? Illustrate with graphics. **[10]**

P.T.O.

SECTION - II

Q6) Short notes on any five of the following: **[5 marks each]**

a) Prospect-Refuge Theory.

b) Ian McHarg.

c) Lunuganga Estates, Sri Lanka.

d) Geoffrey Bawa.

e) Parc de La Vilette.

f) M. Shaheer.

Q7) Write short notes with examples on the following: **[10]**

a) Garden city movement.

b) Industrial Towns.

OR

Q8) Write short note on Energy saving site planning and Landscape architecture. **[10]**

Total No. of Questions : 9] **[Total No. of Pages : 2**

P1199

[3967] - 1171

M.Arch. (Computer Applications)

DIGITAL COMMUNICATION AND MULTIMEDIA SYSTEMS

(Sem. - II) (2008 Course)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Answers to the TWO sections should be written in separate sheet.***
2) ***Solve any THREE questions from each section.***
3) ***Use of logarithmic tables, slide rules and electronic pocket calculator is allowed.***
4) ***Neat diagram must be drawn wherever necessary.***
5) ***Figures to the right indicates full marks.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) What is multimedia? Explain at least three applications of multimedia in distance education. **[7]**

b) Explain the important building blocks of multimedia systems. **[6]**

Q2) a) Describe simplex, half duplex and full duplex mode of transmission. **[6]**

b) What is hypertext? Explain any two application areas of hypertext. **[6]**

Q3) a) List and briefly explain two input and two output devices for multimedia systems. **[6]**

b) What is digital video? Explain the use of digital video in developing multimedia applications. **[6]**

Q4) a) Explain lossless and lossy compression of images? What are the main steps in JPEG image compression. **[6]**

b) How digital audio enhances the presentation? Give suitable example. **[6]**

Q5) a) Describe the color models used in images. **[6]**

b) "Image is worth 1000 words'. Do you agree with this statement? Why? **[6]**

P.T.O.

SECTION - II

Q6) What is animation? Explain various principles of animation with suitable examples. **[13]**

Q7) a) Explain the usage of text in multimedia presentation. What is clip art? **[7]**

b) Why pen drive has become most wanted mass storage device for today's generation? **[6]**

Q8) a) Explain the processes or areas where Multimedia in used in entertainment industry. **[6]**

b) Briefly explain the audio and video file formats. **[6]**

Q9) a) What are the various steps in creating a web site for your firm? **[6]**

b) Why digital media is better than analog? Justify. **[6]**

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1200

[3967] - 1172

M.Arch. (Computer Applications)

ARCHITECTURAL VISUALIZATION

(Sem. - II) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Assume suitable data, if necessary.***
2) ***Q.No. 1 and Q.No. 5 are compulsory.***
3) ***Solve any 3 questions from each section.***
4) ***Answers to the two sections should be written in separate books.***
5) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) Explain Immersive and non-Immersive environments in detail. **[13]**

Q2) a) What are the Hardware and Software components in Virtual Environments? **[7]**

b) Explain generation techniques of Virtual Environments. **[6]**

Q3) a) What are Virtual Caves and how are they used? **[6]**

b) Explain the Digital Design Studio concept by William Mitchell. **[6]**

Q4) a) Explain applications of Virtual Reality in Medical field. **[6]**

b) Write a note on “IMAX screens”. **[6]**

P.T.O.

SECTION - II

Q5) What are Shape Grammers and how are they used for façade design. Explain it with one example. **[13]**

Q6) a) What is prototyping? And how it is enhancing architectural construction process. **[7]**

b) Which are the morphogenetic design strategies? **[6]**

Q7) a) Write note on Reflexive architecture. **[6]**

b) Explain Role of Hybrid space in digital architecture. **[6]**

Q8) Note on any 2: **[12]**

a) Blobitecture.

b) Folds in architecture.

c) Bionics.

Total No. of Questions : 8] **[Total No. of Pages : 2**

P1201

[3967] - 1173

M.Arch. (Computer Applications)

THEORY OF DIGITAL ARCHITECTURE - II

(Sem. - II) (Old & New) (Term - II)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Q.No. 1 is compulsory.***
2) ***Solve any 2 questions from Questions 2,3,4.***
3) ***Solve any 3 questions from Section - II***
4) ***Answers to the two sections should be written in separate books.***
5) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) a) How Parametric software helps to deal with complexity in architecture? Explain with example. **[10]**

b) Explain the role of an architect while working on Generative methods. **[5]**

Q2) Explain integration of virtual environments in architectural design. **[12]**

Q3) Write short notes on the philosophy & work of: **[12]**

a) Marcos Novak.

b) Greg Lynn.

c) Harish Lalwani.

Q4) What are 3D sketch boards? Explain its working and its advantages in design process. **[12]**

P.T.O.

SECTION - II

Q5) How does design process is getting benefit with digital tools? **[12]**

Q6) a) What are unique properties of Shape Grammar? **[6]**

b) Which element reduces confusion in Shape Grammar & explains how? **[6]**

Q7) What are Evolutionary methods used for form generation? Explain with examples. **[12]**

Q8) Discuss the revolution in entertainment industry with the advent of digital technology? **[12]**

Total No. of Questions : 7] **[Total No. of Pages : 2**

P1202

[3967] - 1175

S.Y. M.Arch. (Architectural Conservation)

HISTORIC HOUSING AND LANDSCAPE

(Sem. - III) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

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

SECTION - I

Q1) Explain the key features of 'Florence charter' with respect to the conservation of historic landscapes. **[10]**

OR

Write a note on the legislative framework in India for preservation of historic landscapes.

Q2) Explain the key features of French gardens. **[10]**

OR

Describe the key features of Mughal gardens with suitable example in India and neat sketches.

Q3) Describe the typical features of Japanese gardens. **[10]**

OR

Highlight the changes that came about in the landscape design and the open space design in colonial India.

Q4) Write short notes (Any Two): **[10]**

a) Sacred groves.

b) British gardens.

c) Borrowed views.

d) Native species.

P.T.O.

SECTION - II

Q5) What are the typical features of the historic core in any city. Explain with reference to a city of your choice. **[10]**

OR

Explain the morphology of cantonment areas with reference to Pune cantonment.

Q6) Enlist evolution process and important decisions in the planning process of core city areas in post-independence period with respect to Pune. **[10]**

OR

What are the factors to be considered while conserving the historic core of a city. Explain with reference to a suitable example.

Q7) Write short notes (Any Three): **[15]**

a) Use of heritage lists in the conservation policy formation.

b) Vernacular housing.

c) Heritage zones.

d) Physical infrastructure provisions in core city areas.

e) Development of heritage areas and JNNURM.

Total No. of Questions : 4] **[Total No. of Pages : 2**

P1203 **[3967] - 1181**

S.Y. M.Arch. (Environmental Architecture)

RENEWABLE ENERGY SYSTEMS AND ENVIRONMENTAL TECHNOLOGIES

(Sem. - III) (New Syllabus) (2008 Pattern) (Theory Paper)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Draw diagrams wherever necessary.***
2) ***Supplement your answers with graphs and figures wherever necessary.***
3) ***Q.No. 1 and Q. No. 4 are compulsory.***

SECTION - I

Q1) Compulsory Question. **[25]**

Express in a stepwise manner how will you design and size the solar hot water system for an apartment, giving detailed calculations and diagrams wherever necessary.

The apartment features are as follows:

a) The apartment is located in a high income residential neighborhood, consisting of 2 BHK flats, with 2 bathrooms each flat.

b) There are 3 flats per floor and 11 floors in the building.

c) The hot water is to be supplied to the kitchen, wash area and all bathrooms, accordingly assume the hot water requirement for the apartment.

d) Calculate the terrace space available, assuming that each flat is averagely 1000 sq ft.

e) Assume all other necessary details.

Q2) Write short notes on the following (Any Two): **[5 marks each]**

a) Environmental hazards associated with Nuclear Energy.

b) Solar Thermal Hot water technology.

c) Conventional Waste water treatment in Pune.

d) Issues related to Solid waste Management in India.

P.T.O.

SECTION - II

Q3) Write notes on the following (Any Two): **[5 marks each]**

a) Biogas.

b) On Site Wind Power generation.

c) Non energy Intensive treatment of waste water.

d) Bio Sanitizer.

Q4) Compulsory Question. **[30]**

As an Environmental consultant to a Developer for a township project, you have been asked to compile **a conceptual report** on the various Renewable Energy and Alternative Environmental Technologies that can become an integrated part of the township design and planning.

The township has the following features:

a) The site area admeasures approx. 2,25,000 sq m and is located on the fringe of a city in Madhya Pradesh.

b) As per the EIA requirements, 30% of this land is to be maintained as Open area and needs to be developed / kept as Green Areas.

c) The proposed built up is approx. 1,75,000 sq m. The residential units (flats) proposed are approx. 425, with three commercial IT buildings and one hotel, inviting around 5000 guests/ employees in the township ever day.

The report should give a clear picture to the Developer as to the various Renewable Energy Technologies and Environmental Technologies that the township can integrate, with conceptual reference to feasibility of these systems. It is expected that simple calculations / estimates / drawings / diagrams become a part of this report.

Total No. of Questions : 4] **[Total No. of Pages : 1**

P1204

[3967] - 1182

Second Year M.Arch.

(Environmental Architecture)

(EA- 315) : ENVIRONMENTAL IMPACT ASSESSMENT

(Sem. III) (Backlog) (New Syllabus) (2008 Pattern) (Theory)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Question 1 and Question 3 are compulsory.***
2) ***Supplement the answers with sketches/diagrams as necessary.***

SECTION - I

Q1) **Compulsory Question.** **[20]**

Explain the Screening requirements for EIA as per Ministry of Environment and Forests, Government of India. Explain the documentation compliance requirements for Construction projects for Environmental Clearance.

***Q2*)** **Write short notes on the following (Any Two):** **[10 marks each]**

a) Leopold Matrix.

b) Matrices as methodology for EIA.

c) Purpose of an EIA.

SECTION - II

Q3) **Compulsory Question.** **[20]**

Why is Impact Assessment necessary in any EIA? List the activities for a construction projects and the impacts associated with it. Write briefly about the Impact Prediction that is a part of an EIA study.

***Q4*)** **Write notes on the following (Any Three):** **[5 marks each]**

a) Legislative framework for EIA in India.

b) Checklists.

c) Public Hearing.

d) Evaluation of Alternatives.

e) Scoping for an EIA.

Total No. of Questions : 6] **[Total No. of Pages : 2**

P1205

[3967] - 1189

M.Arch. (Landscape Architecture)

(LA - 312) : ENVIRONMENTAL LEGISLATION AND ECONOMICS

(Sem. - III) (New) (2008 Pattern)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***

SECTION - I

Q1) What are the legislations which play role in protecting sensitive areas in the following situations? Also briefly state the provisions in those legislations.

a) Development along the sea coast.

b) Development on hill stations. **[20]**

OR

Explain in detail the structure and hierarchy of Institutional Setups in India for the protection and conservation of environment.

Q2) The powers and functions of the Central/State pollution control board. **[10]**

OR

State the importance of Public Liability Insurance Act, 1991 in the wake of Bhopal Gas Disaster.

Q3) Short Notes (Any Two): **[5 marks each]**

a) Bio-diversity and economics.

b) Bio-magnification and DDT ban.

c) Air Pollution and Noise Pollution.

d) Water (P & CP) Act, 1974 and Water Management.

P.T.O.

SECTION - II

Q4) Discuss the provisions in the National Building Code, 2005 in ensuring open spaces in urban neighborhoods. **[10]**

OR

State Bhure-lal committee recommendations for the pollution free city environment.

Q5) What were the traditional customs and faiths which ensured environmental protection of the cultural and natural landscapes? Give examples. **[10]**

OR

Explain the criteria for consideration of any area as eco sensitive zone with its economic importance.

Q6) Short Notes (Any Three): **[5 marks each]**

a) E - waste management.

b) World Bank and World Resource Institute.

c) Convention on Biological Diversity.

d) National Parks.

e) International Environmental Law.

Total No. of Questions : 6] **[Total No. of Pages : 2**

P1206

[3967] - 1196

M.Arch. (Computer Applications)

CA 301 : INTRODUCTION TO PROGRAMMING

(2008 Pattern) (Theory)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***Answer any 2 questions from each section.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Use of logarithmic tables, slide rules and electronic pocket calculator is allowed.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Figures to the right indicate full marks.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Write a note on computer programming and different types of software. **[10]**

b) Explain the data types in C, with examples. **[10]**

Q2) a) Compare while and do-while loops in C. **[10]**

b) Write a program in C to find a given number is prime or not using for loop. **[10]**

Q3) a) Explain the concept of constructors and destructors in C++. **[10]**

b) Explain different types of inheritance. **[10]**

P.T.O.

SECTION - II

Q4) a) Explain different components in VB. **[8]**

b) Write a note on data types in VB. **[9]**

Q5) a) Write a note on how to run a java program. **[9]**

b) Write a Java program to find the maximum number in an array. **[9]**

Q6) a) Write a note on CPM and PERT. **[9]**

b) Write a note on advantages of Java over C++. **[8]**

Total No. of Questions : 6] **[Total No. of Pages : 2**

P1207 **[3967] - 1197**

II Year M.Arch. (Computer Applications)

GIS AND REMOTE SENSING

(Sem. III) (2008 Course)

Time : 3 Hours] ***[Max. Marks :75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) Define Map Projection? Explain the need of map projection? Describe the three main types of Map projection with diagrams. **[13]**

OR

Data Exploration techniques in GIS.

Q2) Describe Buffering process in GIS? What are overlay methods? Explain the overlay methods with diagrams. **[13]**

Q3) Define GIS? What are the components of GIS? **[12]**

OR

Short notes:

a) Typography.

b) Applications in GIS.

P.T.O.

SECTION - II

Q4) Define Remote Sensing for Earth Surface. Explain the process of Remote Sensing. **[13]**

OR

Define the Electromagnetic Energy and describe in detail the Electromagnetic Spectrum?

Q5) Explain the elements of Visual Image Interpretation. **[12]**

OR

Describe the platforms used for various sensors in Remote Sensing.

Q6) Describe the interaction of electromagnetic radiation with the atmosphere and earth surface. **[12]**

Total No. of Questions : 7] **[Total No. of Pages : 3**

P695

[3967]-21
S.Y. B.Arch.
BUILDING CONSTRUCTION AND MATERIALS - II
(Yearly Pattern) (2004 Course)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections must 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 timber truss roof is to be provided for a workshop 10m × 15m with G.I. sheet roof covering with 750mm overhang on both sides, clear internal height = 4.5m and external walls are 350mm thk in brick, strengthened with 450mm × 450mm brick piers at 3.0m C/C. Draw key plan & section showing trusses & members to 1:50 scale. Draw enlarged details of fixing of sheets and the gutter to a suitable scale.

OR

T.W. glazed and paneled door of size 1.5m × 2.1m is to be provided as an entrance door of a restaurant. Draw external elevation, plan @ section to 1:10 scale and draw details to scale 1:2 of -

a) joint between vertical & horizontal members of shutter & frame.

b) Panel details. **[20]**

Q2) A store-room of size 3m × 6m is to be constructed in load bearing hollow concrete block masonry with a flat roof. Draw plans & section of the entire room in the concrete block masonry along with stopped-end & junction details to a suitable scale.

OR

M S Window of size 1500mm × 1200mm is to be provided in an office building with cill level of 900mm. Draw Plan, Section and external elevation of window to scale 1:10 and details of glass fixing and hinges to 1:5 scale.**[20]**

P.T.O.

Q3) A bungalow garage of size 3.5m × 6m with RCC structure and 230 thk brick walls, clear internal height under flat slab = 3.5m is to be built with the following RCC details.

Footings = 900 × 1200	: 10 T or 8 no. bothways		
Columns = 300 × 510	: 12 T or 8 no. - main reinft.	links	: 6 O 150 c/c
Tie beams = 230 × 450	: 12 T or 3 no. - main reinft.	stirrups:	6 O 100 c/c at ends
	: 8 T or 2 no. - anchor bars		: 6 O 150 c/c at centre

Draw a structural plan & section showing details of plinth to 1:20 scale. Draw enlarged details for footing & column reinforcement.

OR

A staircase lobby has to be provided with a m.s. collapsible gate for opening of size 2.0m × 2.4m. Explain with sketches the working of the gate and the details at the joints to a suitable scale. **[20]**

SECTION - II

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

a) Causes of failure of foundation.

b) Role of reinforcement in concrete.

c) Sheet roofing material.

d) Fine & coarse aggregate.

e) Thumb rules for load bearing construction.

f) Timber floor for badminton/basket ball court.

g) Timbering and strutting for loose soil.

Q5) Explain the following terms (***any five***) : **[10]**

a) Water-cement ratio.

b) Bulking of sand.

c) Cavity wall.

d) Damp proof course.

e) M20.

f) Pointing.

g) Structural steel

h) Temporary structure.

Q6) Complete the following with the correct option : **[5]**

a) 43 & 53 are grades of –

i) cement.
ii) concrete.
iii) steel.

b) Rich concrete mix is a ..... type of damp-proofing material.

i) rigid.
ii) semi-rigid.
iii) flexible.

c) Striking period is –

i) the period of removal of formwork.
ii) time required for curing of Rcc member.
iii) period of testing of compressive strength of concrete.

d) Tension spring facilitates movement of

i) Hung gate.
ii) steel window.
iii) rolling shutter.

e) Purpose of putty in m.s. window is

i) as sealant.
ii) decorative.
iii) to hold glass panel in position.

Q7) Match the following : **[5]**

a)	Stirrups	corrugated sheet roofing material
b)	F.R.P.	nominal reinforcement in beam
c)	Steel butterfly ties	shear reinforcement
d)	Anchor bars	cavity wall
e)	Links	Rcc column.

✷✷✷

Total No. of Questions : 6] **[Total No. of Pages : 2**

P696

[3967]-23
S.Y. B.Arch. (Annual)
HISTORY OF ARCHITECTURE & HUMAN SETTLEMENT - II
(2004 Course)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers to the two sections must be written on two separate sheets.***
3) ***Figures to the right indicate full marks.***
4) ***Draw neat sketches wherever necessary.***

SECTION - I

Q1) Explain the following terms with reference to their context (Any Five) : **[25]**

a) Indo-Aryan Architecture.

b) Char-baug.

c) Planning & features of Hoysala Temples.

d) Parts of a Mosque.

e) Gupta Temples.

f) Kund.

Q2) Discuss about the characteristic features of Dravidian architecture, with an example of any one temple in detail of Dravidian style. Support your answer with neat sketches. **[10]**

OR

Explain about various ornamental features used in Islamic architecture also explain about the types of domes & arches with appropriate sketches.

Q3) Write short notes on (Any Three) : **[15]**

a) Squinches & Stalactite.

b) Provincial Pathan School.

c) Jain architecture.

d) Gopurams.

e) Mandapa.

P.T.O.

SECTION - II

Q4) Explain the following terms with reference to their context (Any Five): **[25]**

a) Inca architecture.

b) Palladian Villa.

c) Rib & Panel Vaulting.

d) Baroque Architecture.

e) Ball Game Court.

f) Gothic traceries.

Q5) Discuss the constructional methods & features of Romanesque architecture. **[10]**

OR

Write in brief characteristic features of Renaissance Architecture with suitable example.

Q6) Write short notes on (Any Three) : **[15]**

a) Castillo.

b) Pagodas.

c) Flying Buttress.

d) Angkor Wat.

e) The Great Wall of China.

Total No. of Questions : 8] **[Total No. of Pages : 3**

P697

[3967]-51
Fifth Year B.Arch.
PROFESSIONAL PRACTICE I & II
(Yearly 2003 Pattern) (513427)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***Each question carries 20 marks.***
2) ***Solve any three from Section I and any two from Section II.***
3) ***Answers to two sections should be written in separate books.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) a) What is valuation? Discuss Market Value and characteristics of Market Value. **[10]**

b) Write short notes (**Any two**) : **[10]**

i) Easement Rights.
ii) Tenure.
iii) Value, Price and Cost.

Q2) What are Architectural Competitions? Discuss their Advantages. **[10]**

a) Explain in detail a two stage competition as per COA norms.

b) Explain Roles played by **[10]**

i) BOA (Board of Assessors)
ii) Technical and Professional Advisors.
iii) Assessor's Scope.
iv) Project Brief.

Q3) State your views/Comments (**Any Five**) : **[20]**

a) Promoters daughter in law wants to take part in the Architectural Competition for his project.

b) Owner wants to demolish existing residential Building and construct a Theater Complex on his lease hold land.

c) Amitabh Bachchan's spectacles are on sale.

P.T.O.

d) The Garbage Depot in front of your land is shifted by Corporation to some other location.

e) A fresh Architect wants to know taxes he is supposed to pay after starting practice.

f) Owner wants to know the difference between assessed value and monopoly value attached to his property.

Q4) Explain in detail the scope of Council of Architecture towards Education and Profession. **[8]**

Write short notes on (**Any Three**) : **[12]**

a) Ethics in profession.

b) Scope of Architect.

c) Comprehensive Services.

d) Reimbursable Expenses.

e) Stages of Payment of Fees.

SECTION - II

Q5) What is a Tender? Discuss types of Tenders and the procedure of Tendering till finalization of Contractor. **[20]**

Q6) State your actions with respect to Articles of Agreement & Conditions of Contract (**Any Five**) : **[20]**

a) Defects observed during DLP (Defects Liability Period)

b) Architect's Representative (COW) rejects work done by the Contractor and Contractor is quiet on this issue.

c) Contractor executed items not in tender without confirmation from Architect/Owner and claims for the work.

d) Sub contractor does not allow Architect to visit his fabrication workshop.

e) Contractor is not happy with the 'Award' given by Architect – Arbitrator.

f) Water and Electricity is not available at site.

g) Owner's friend meets with an accident at site – during Inspection.

h) Owner objects Contractor's sub Contractor.

Q7) Write short notes on (**Any Four**) : **[20]**

a) Clerk of Works.

b) Extension of time by Architect.

c) Provisional Sums.

d) Nominated Sub Contractor.

e) Contract Document.

Q8) a) Explain Arbitration and its proceedings and the following terms : **[12]**

i) Award.
ii) Sole Arbitrator.
iii) Umpire.

b) Differentiate between (**Any Four**) **[8]**

i) Item Rate and Lump sum Tender.
ii) Earnest Money and Security Deposit.
iii) Pre-bid and Review meeting during construction.
iv) Penalty and Bonus.
v) Virtual and Actual completion.
vi) Date of Commencement and Completion.
vii) Latent and Patent defect.

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Total No. of Questions : 5] **[Total No. of Pages : 2**

P759

[3967]-3002
T.Y. B.Arch. (Interior Design)
CONSTRUCTION, SERVICES & MATERIALS - III
(Annual Pattern)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to Section I, Section II & Section III should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data wherever necessary.***

SECTION - I

Q1) Draw a plan and section of a cantilevered RCC residential staircase with steps projecting from a beam at the centre of the steps, to the scale of 1:20 and give half flight details with mid landing along with reinforcement details, showing all relevant steel placement details. **[20]**

OR

Design a sliding folding door to the dining space opening towards the terrace of a flat on the second floor of a residential building. The opening in the wall for the door measures 2400 × 2100 mm. Draw plan, elevation, section to the scale of 1:10 and details to a suitable scale.

Q2) Draw plan, elevation and details of ridge, eaves and gutter along with built up section of the main Steel Truss spanning 12.00 Mt with A C Sheet roofing to suitable scale. **[20]**

OR

Draw plan, elevation & sections of a bed for a master bed room of a flat belonging to a businessman of higher income group. Give sufficient details of joinery and materials.

Q3) Write short notes with appropriate sketches (Any 2) : **[10]**

a) Escalator.

b) Advantages of paneling.

c) Bay Windows.

P.T.O.

SECTION - II

Q4) Write short notes with appropriate sketches (Any 5) : **[25]**

a) Stainless steel and its use in building industry.

b) Light weight concrete.

c) Any two roofing techniques developed by CBRI.

d) Characteristics of good paints.

e) Deep foundations.

f) Waterproofing to toilet.

g) Guniting.

SECTION - III

Q5) Write short notes with appropriate sketches (Any 5) : **[25]**

a) Responsibilities of an architect in fire safety.

b) Wet & dry risers.

c) Passive cooling strategies.

d) Air conditioning as an Environmental issue.

e) Type of fans in mechanical ventilation.

f) Smoke detectors & sprinkler system.

g) Any two structural elements & their fire resistance.

✷✷✷

P760

[3967]-3003
T.Y. B.Arch. (Interior Design)
ARCHITECTURAL AND INTERIOR DESIGN - III
(Annual 2003 Pattern)

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

Instructions to the candidates:

1) ***The design will be valued as a whole.***
2) ***Assume suitable data if necessary.***
3) ***The candidate will submit the single line drawings of the site layout, floor plans and sections at 1:200 scale at the end of the first day. These sketches shall not be returned to the candidate therefore due record of the same should be kept for reference on the subsequent day. Candidates should refrain from making serious deviations from the sketches submitted on the first day.***
4) ***The drawings should be self-explanatory with structural clarity in the drawings.***
5) ***Orientation of the site should not be changed while preparing the floor plans.***

Youth Centre

YMCA Pune wished to construct a youth centre near Pune. The design is expected to express the values of honesty and truth through its architecture.

Design Brief

Indoor Areas

1	Entrance Lobby (Waiting Hall) with Reception Desk	50 Sqm
2.	Administration Office	30 Sqm
3.	Staff Room with Toilet	25 Sqm
4.	Guest Rooms with attached toilets (10 no. × 20 Sqm)	200 Sqm
5.	Dormitory for 8 with common toilet (2 no. × 100 Sqm)	200 Sqm
6.	HVAC Room Electrical Room and Store 15 Sqm Each	45 Sqm
7.	Library	100 Sqm
8	Common Toilets for visitors Male : 3 WC's, 3 Urinals, 3 WHB Female : 3 WC's, 3 WHB	Adequate
9.	Canteen	150 Sqm
10.	Kitchen with store	50 Sqm

Other Areas

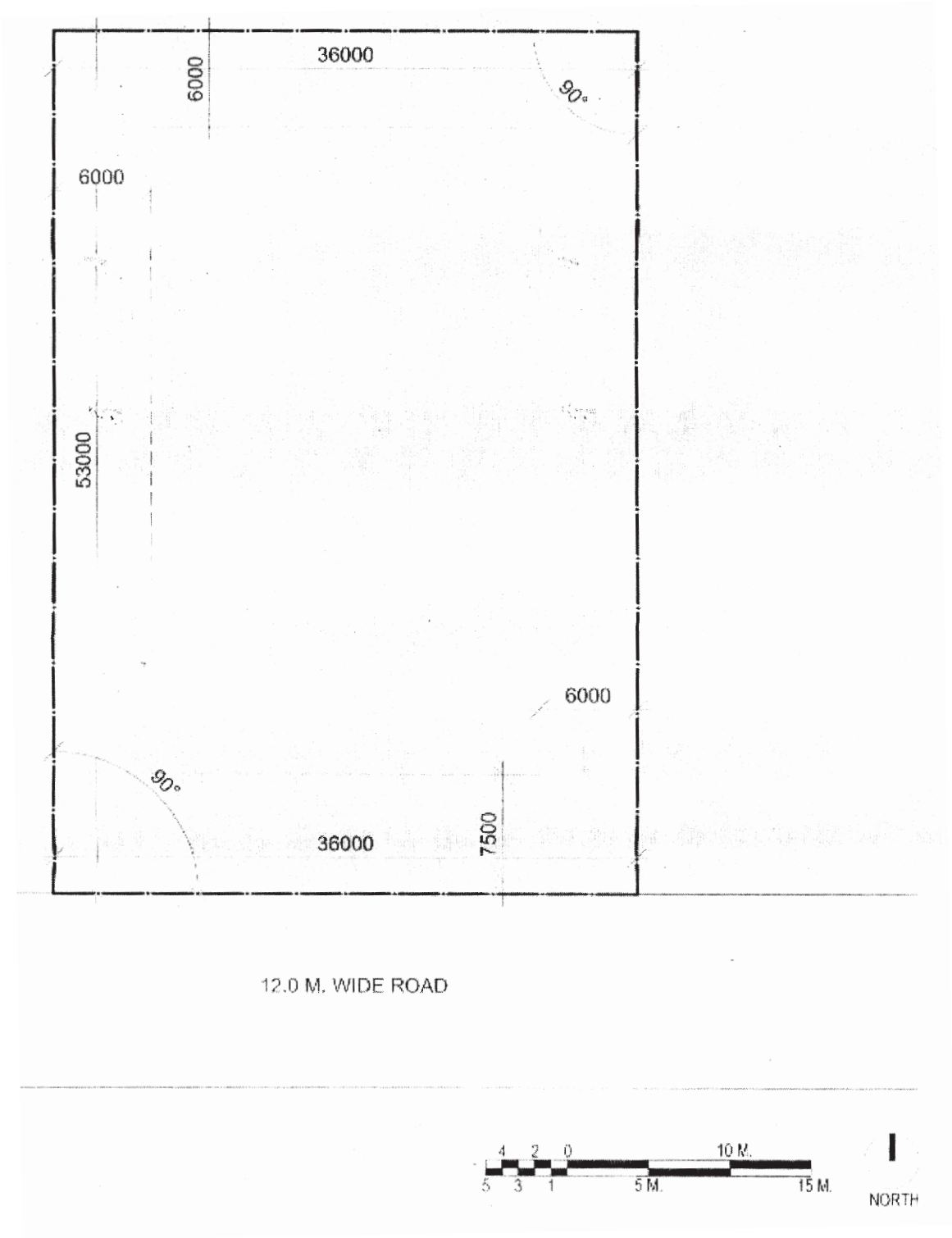
1	Security Cabin	Adequate
2.	Parking for 1 Bus, 4 Cars, 10 two wheelers	Adequate

Site Parameters

1.	Setback from roadside	7.5 m
2.	Set back from other 3 sides	6.0 m
3.	Max. Ground Coverage	1/3rd of Plot Area
4.	Permissible FSI	1.00
5.	Plot Area	1908 Sqm
6.	Maximum Height	9.0 m

Drawing Requirements

1.	Site Plan	1 : 200
2.	All Floor plans	1 : 100
3.	Two Sections Minimum (Longitudinal and cross)	1 : 100
4.	Two Elevations Minimum	1 : 100
5.	Perspective view of the Campus.	


36000
6000
90°
6000
53000
6000
90°
36000
7500
12.0 M. WIDE ROAD
4 2 0 10 M.
5 3 1 5 M. 15 M.
NORTH

✷✷✷

Total No. of Questions : 8] **[Total No. of Pages : 3**

P761

[3967]-3005
Third Year B.Arch. (Interior Design)
ESTIMATION & COSTING
(2006 Pattern) (313484)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Write answers to each section in a separate answer book.***
3) ***Figures on the right indicate full marks for the question.***
4) ***Use of log-tables, slide rule and simple (non-programmable) electronic calculators is permitted.***
5) ***Assume suitable data, where required.***

SECTION - I

Q1) Provide detailed measurements & compute quantities for any three of the following items, for the structure shown in the accompanying drawing :**[30]**

a) RCC floor Beams.
b) RCC Slab.
c) Brickwork 230 thick in superstructure in C.M. 1 : 6
d) Internal plaster 12 mm thick in C.M. 1 : 6 with Neeru finish
e) Polished Kota Flooring.

Q2) Prepare a Bill of Quantities for any two items selected for measurement in Q.No. 1. giving full description of the item, Quantity and unit of measurement. **[10]**

Q3) State the unit of measurement for following items of work. **[10]**

a) Excavation in Soft murum.
b) RCC column footing.
c) RCC Pardi.
d) Half Brick thick walls.
e) Internal painting to ceiling.
f) Ceramic Tiles Flooring.
g) Reinforcement steel.

P.T.O.

h) SWG pipes for Drainage work.

i) PVC Water Storage Tank.

j) Kitchen platform.

Q4) Write short notes on <u>any two</u> of the following : **[10]**

a) Norms for deduction in the quantity of brickwork for Doors/Windows/ openings as per IS 1200.

b) Computation of quantities of materials required for various grades of Concrete.

c) Process of Rate Analysis.

SECTION - II

Q5) Write detailed specifications for <u>any two</u> of the following materials : **[10]**

a) Coarse Aggregate for concrete.

b) First Class Brick.

c) Reinforcement Steel.

Q6) Write detailed specifications for <u>any two</u> of the following works : **[10]**

a) Half Brick thick wall in superstructure.

b) Plastering with neeru finish.

c) Glazed tiles flooring.

Q7) Write full description (as included in the Schedule of Quantities) for <u>any two</u> of the following items : **[10]**

a) U.C.R.S Masonry in foundation & plinth.

b) P.C.C. bed in flooring.

c) External Sand faced cement plaster.

Q8) State two brand/trade names for following materials (any five) : **[10]**

a) Waterproof Cement paint.

b) Bathroom fixtures & fittings.

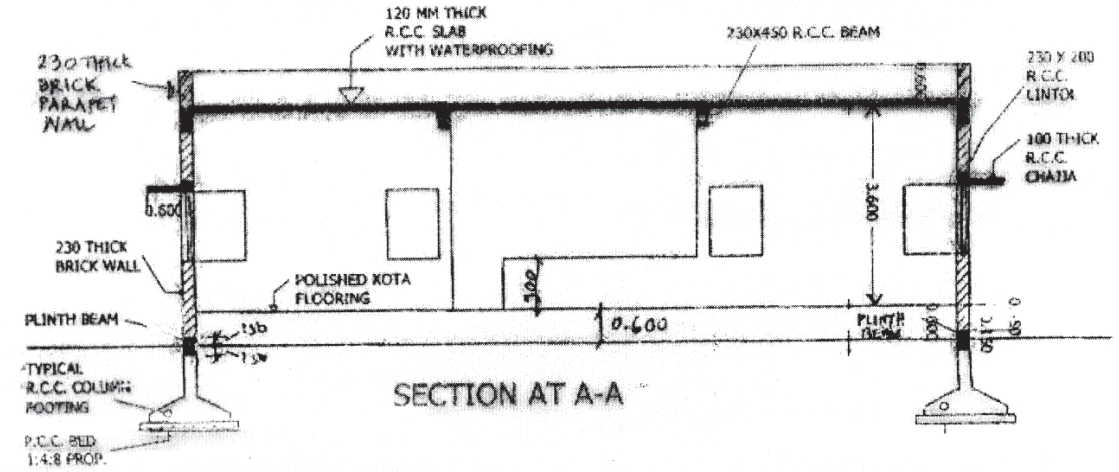
c) Ceramic tiles.

d) Particleboard.

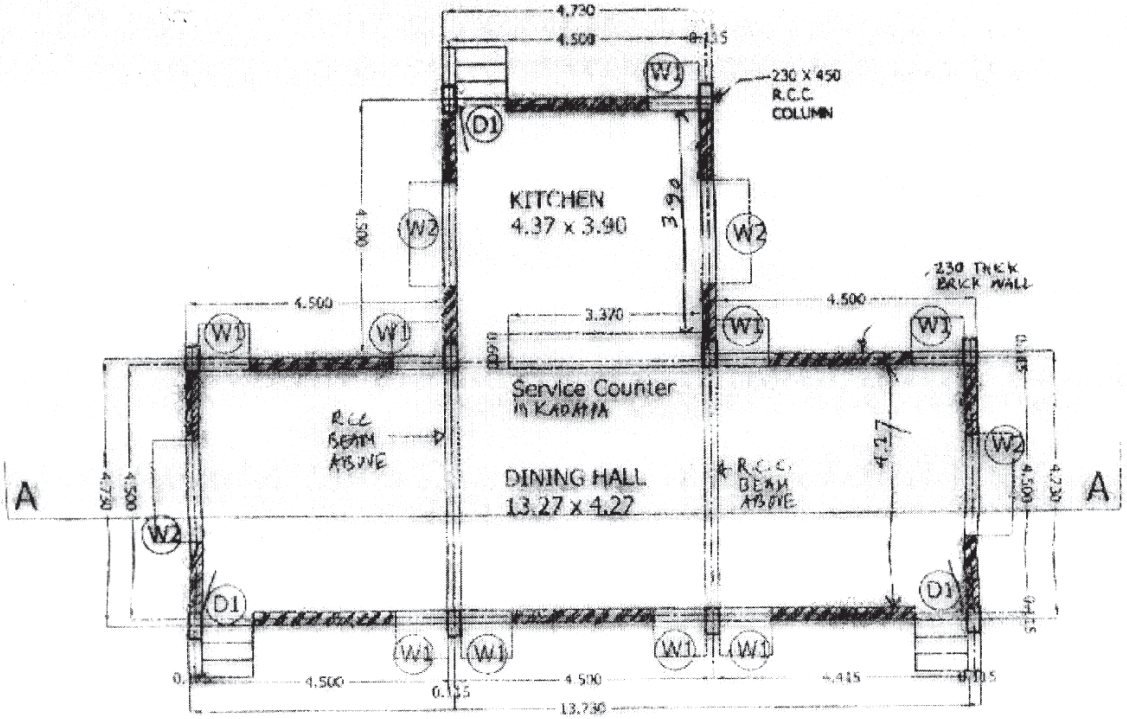
e) Electrical Switches.

f) PVC drainage pipes.

g) Modular furniture.



SECTION AT A-A



GROUND FLOOR PLAN

SCHEDULE OF DOORS/WINDOWS

D1	0.90 X 2.10	T.W. PANELLED DOOR
W1	0.90 X 1.20	M.S. FULLY GLAZED WINDOW
W2	1.80 X 1.20	M. S. FULLY GLAZED WINDOW

ALL DIMENSIONS IN THE ABOVE DRAWING ARE IN METRES
ALL COLUMNS 230 X 450 MM
ALL FLOOR BEAMS 230 X 450 MM
ALL SLABS 120MM THK

PROPOSED BLDG . FOR
STUDENTS' MESS AT
XYZ CAMPUS , PUNE.

THIRD YEAR B.ARCH.(R2)
EXAMINATION (2006 PATTERN)
SUBJECT CODE 312224
SUBJECT:- ESTIMATION & COSTING

* * *

P762

[3967]-4001
Fourth Year B.Arch. (Interior Design)
INTERIOR DESIGN
(2006 Pattern)

Time : 18 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

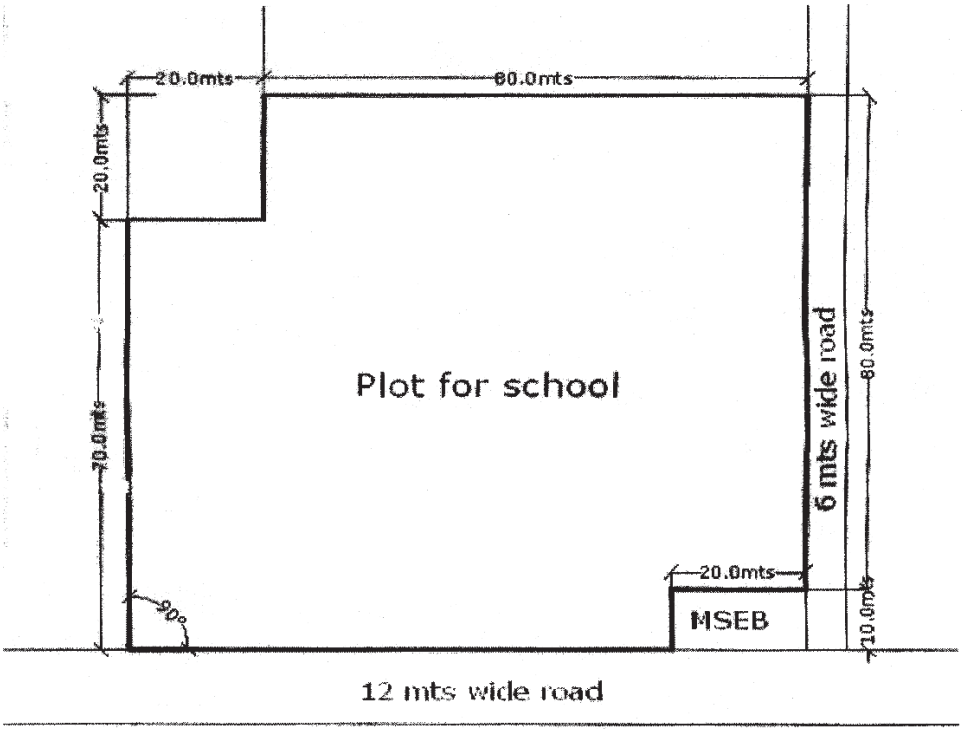
1) ***The design solution will be evaluated as a whole.***
2) ***Assume suitable data wherever necessary.***
3) ***The candidates shall submit single line plans of the entire scheme with layout plan to the required scale at the end of the first day. These drawings shall not be returned to the candidates, therefore due record of the same should be kept for subsequent days. The candidates shall not make any siderable deviations from the design submitted on the first day.***
4) ***The drawings should be self-explanatory with structural scheme, should have clarity in all plans and sections.***

DESIGN OF A SCHOOL

A new group of technocrats and academicians, wish to start a school with modern outlook, based on traditional Indian values. Hence they are looking for an architect and Interior designer for designing of a school.

Plot is located on Bhugaon Hills on a flat piece of land at Bhugaon, Pune. The land is away from state highway with a 12 mtrs. access road towards the south side of and at a height of 60 mts. from main road.

The land has state electrical supply and water is drawn from the nearby lake, which dries up during summer. As an Architect you are expected to consider sustainability, climatology as well as future growth of the school.



SPACE REQUIREMENTS

Figures to the right indicate carpet area in square meters. Adequate areas for passages, lobbies, porch, stairs, lift and other circulation areas, toilets and other services, parking facility, etc. should be incorporated in design.

THE PROGRAM :

Part A: Pre primary and primary school.

Sr. No.	Activity	Area in Sq. Mts.	Total area
1.	Admin Dept.	30	
2.	Principal	20	
3.	Staff room	30	
4.	Sick room	20	
5.	Library	50	
6.	Laboratory	50	
7.	Kitchen/store	20	
8.	Art and Craft Room	30	
9.	Activity Room	30	
10.	Class rooms (Lower Kg to Std 4) total 6 classrooms of 25 students each.	50	300
	NOTE: Provide suitable area for Entrance/ toilets/circulation area. Garden with sports area and Bio Zoo (Birds, fish, animals)		

Part B : Secondary school

Sr. No.	Activity	Area in Sq.Mts.	Total area
1	Admin Dept.	100	
2	Principal	30	
3.	Staff room	40	
4.	Sick room	20	
5.	Library	200	
6.	Laboratory (3 nos.) physics, chemistry, engineering	60	180
7.	Computer Lab	60	
8.	Examination room	20	
9.	Repro and utility	20	
10.	Art and Craft Room	30	
11.	Activity Room	30	
12.	Conference (for 25)	50	
13	Multipurpose hall with stage	400	
14.	Class rooms (Std 5 to 10) total 6 classrooms of 25 students each.	70	420
	NOTE : Provide suitable area for Entrance/toilets/ circulation area Sports ground for football with open stadia for 1000		

<u>Drawing requirements</u> :

First day submission –

1. Concept of design — 10 marks
2. Single line layout plans showing site, buildings, parking, driveways, pathways, landscaping..... 1 : 200
3. Single line plans at all levels..... 1 : 100

Final submission –

1. Layout plans showing site, buildings, parking, driveways, pathways, landscaping, location of machinery etc..... 1 : 200 — 15 marks
2. Plans at all levels with complete interior layout..... 1 : 100 — 25 marks
3. Minimum two sections to explain the scheme ..... 1 : 100 — 20 marks
4. Minimum two elevations ..... 1 : 100 — 15 marks
5. A sketch perspective specifically highlighting the interior theme — 15 marks

P763

[3967]-41
Fourth Year B.Arch.
ARCHITECTURAL DESIGN - IV
(2003 Pattern)

Time : 18 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Your design solution will be evaluated as a whole.***
2) ***Assume suitable data if necessary.***
3) ***The candidates shall submit single line plans of the entire scheme with the layout plan to the required scale at the end of the first day. These drawings shall not be returned to the candidates, therefore due record of the same should be kept for subsequent days. The candidate shall not make any considerable departure from the design submitted on the first day.***
4) ***The drawings should be self explanatory with structural scheme and should have clarity in all the plans and sections.***

Two Wheeler Company Showroom cum Service Centre

A multinational two – wheeler manufacturing company proposes to build a state of the art, modern company showroom with service centre facility for its customers in Pune. Equipped with a trained and dedicated team of sales and service staff, the company aims at addressing its customers' needs quickly and efficiently. Customers can also conveniently get top-notch sales and service experience, through the authorized service centre.

The selected plot for the Two Wheeler Company Showroom cum Service Centre is flat and rectangular in shape having 60 m. North – South and 35 m. East – West dimensions. It has 18.0 m. wide road and a 24.0 m wide road on two adjacent sides. The plot on the northern side of the proposed site is reserved for a hospital. The site has a multi speciality branded showroom on the adjacent eastern side.

The proposed Two Wheeler Company Showroom cum Service Centre has to be designed with the following requirements.

Space Requirements : (Figures to the right indicate carpet area in sq. mts.)

- Adequate areas for passages lobbies porch, stairs, services should be provided wherever necessary.
- Adequate number of toilets to be provided as per the requirement.
- Circulation areas are over and above the given areas.

1) Showroom

i)	Entrance Hall, Reception, Information Counter and Waiting		100.00
ii)	Display Area		500.00
iii)	Accessories Boutique		50.00
iv)	Administration Office		
	<u>Sales</u>		
	a)	Managing Director's cabin with attached toilet	15.00
	b)	Sales Manager's cabin with attached toilet	12.00
	c)	Areas for	
		• Registration	5.00
		• Finance transactions	5.00
		• Insurance	5.00
	<u>Back office</u>		
	a)	New two wheeler sales department (4 no. of staff)	40.00
	b)	Administrative department (4 no. of staff)	40.00
	c)	Accounts department (2 no. of staff)	20.00
v)	Pantry for staff		15.00
vi)	Store and server area		15.00
	Adequate toilets to be provided.		

2) Service Station

i)	Front Office		
	a)	Customers Lounge	100.00
	b)	Service Manager's cabin with attached toilet	12.00
	c)	Service Counters with Cashier (5 nos.)	30.00
	d)	Job Control Room	10.00
	e)	Spares Counter	10.00
ii)	Spare part storage area and Godown		350.00
iii)	Service Station		
	a)	Regular Servicing Bays	
	b)	Wheel alignment Bays	300.00
	c)	Denting Painting Area	
	d)	Accident Repair Area	
	e)	Engine Repair Room	15.00
	f)	Parts Storage Room	15.00
	g)	Electrical Room	15.00
	h)	Battery Room	15.00
	i)	Special Tools Room	15.00
	j)	Tools Room	15.00
	k)	Chassis Repair Section	30.00

l)	Warranty Room	15.00
m)	Paint Mixing Room	15.00
n)	Paint Booth	15.00
o)	Compressor Room	15.00
p)	Oil room	15.00

Adequate toilets to be provided

3) Workers area and Facility

i)	Training Room	30.00
ii)	Computer Lab	15.00
iii)	Locker and changing room for workers	30.00
iv)	Dining area with canteen pantry storage, utility and hand washing area	100.00

Adequate toilets to be provided

4) Outdoor Areas

i)	Two wheeler and Four Wheeler Parking for Customers.	200.00
ii)	Staff Parking	100.00
iii)	Parking for vehicles to be serviced	150.00
iv)	Parking for serviced vehicles	150.00
v)	Parking for Serviced vehicles which are to be washed	150.00
vi)	Washing Bays (5 nos.)	50.00
vii)	New Two wheeler Stock Area	100.00
viii)	Scrap Yard	150.00
ix)	Product Launch Area	150.00

5) Security

Security cabin at the entrance (1 no.)	10.00
Security cabin at Stock Yard (1 no.)	10.00

Adequate driveway should be provided for the same

6) Services

i)	Transformer	40.00
ii)	Generator room	50.00
iii)	Electrical panel room	30.00
iv)	MSEB meter room	30.00
v)	Diesel storage area	10.00
vi)	Overhead tank	50,000 litres
vii)	Underground tank	1,00,000 litres
viii)	Water treatment/pump	40.00

ix) Fire fighting arrangements
x) Access control and security arrangements
xi) Lightening arrestor arrangements
xii) Loading and unloading platform

Design Parameters

i) Minimum front margin is 6.00 m.
ii) Minimum side margin is 4.50 m.
iii) Maximum ground coverage is 33% of the plot area
iv) Ample natural light and natural ventilation provisions are a must
v) Overall process flow should not hamper or obstruct the activities of the service station
vi) Safety and security against fire and accidents must be considered

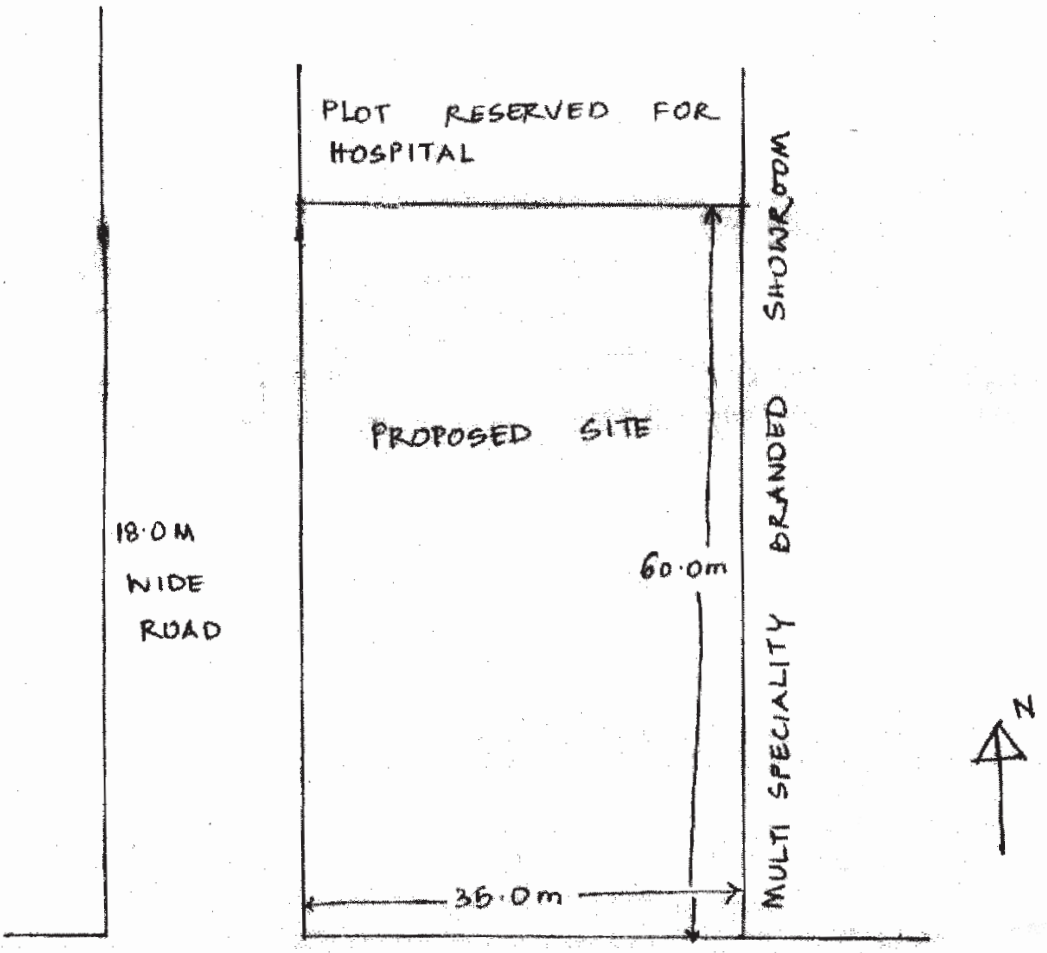
Drawings Required

First Day :

i) Single line layout plans showing site, buildings, parking, driveways, pathways, landscaping etc. 1 : 200
ii) Single line plans at all levels. 1 : 200
iii) Anticipated process line diagram or flow chart of the service station is a must

Final Day :

i) Layout plan showing site, buildings, parking, driveways, pathways, landscaping, services etc. 1 : 200
ii) Plans at all levels should be shown with internal layout 1 : 200
iii) Minimum two sections to explain the scheme 1 : 200
iv) Minimum two elevations 1 : 200
v) A sketch perspective or bird's eye view



SITE FOR PROPOSED TWO WHEELER SHOWROOM CUM SERVICE STATION

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Total No. of Questions : 8] **[Total No. of Pages : 3**

P774

[3967]-3001
T.Y. B.Arch.
THEORY OF STRUCTURE - III
(Interior Design)
(Yearly Pattern)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***Answer any 3 questions from each section.***
2) ***Answers to the sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicates full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, non-programmable electronic calculator and steel table are allowed.***
6) ***Assume suitable data, if necessary.***
7) ***In RCC design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) Write short notes on (any Three) **[16]**

a) Counter-fort retaining wall with reinforcement details.

b) Active and passive earth pressure of soil.

c) Different types of foundations in B.C. soil.

d) Combined footing.

e) Foundation problems on site.

Q2) Design an isolated square footing for column of size 400mm × 400mm carrying an axial load of 900 KN. Assume safe bearing capacity of soil as 290 KN/m^2. Check the footing for One-way or two way shear. Draw the reinforcement details. **[17]**

Q3) Design a RCC dog-legged staircase for a library building for the following data : **[16]**

a) Width of flight = 1500 mm

b) Width of landing at both ends of going = 1500 mm

c) Floor to floor height = 3600 mm

P.T.O.

d) Riser = 150 mm

e) Tread = 300 mm

The staircase is supported on 350 mm wide beams at outer Edge of landings. Draw neat details of reinforcement.

Q4) Check the stability of concrete dam for the following data : **[17]**

a) Density of water = 10 kN/m^3.

b) Height of the dam = 10 M

c) Base width of dam = 7 M

d) Top width = 1.7 M

e) Coefficient of friction = 0.5

f) Safe bearing capacity of soil = 250 kN/m^2

g) Density of concrete = 24 kN/m^3.

SECTION - II

Q5) Write short notes on (any three) : **[16]**

a) Plate girder.

b) Ductility detailing for Earthquake Resistant Structure.

c) Difference between limit state method and working stress method of design.

d) Over head water tank.

e) Safe bearing capacities of different types of soil.

Q6) a) Explain coffered slab with sketches. State its advantages and disadvantages. **[7]**

b) Explain the following terms : **[10]**

i) Sections of compound column and Lacing system.

ii) Differentiate between Prestressed concrete and RCC.

Q7) A compound Stanchion of a factory building consist of 2-ISMC 200 placed back to back. Calculate the spacing between the two section to take maximum load. What will be the load carrying capacity if the length of the column is 4.2 m with one end fixed and another hinged. Design a suitable Batten system for the same. **[17]**

Q8) a) Design a suitable purlin of a factory building for a roof truss for the following data : **[8]**

i)	Span of Truss	= 12 m
ii)	Spacing of Truss	= 3.6 m c/c
iii)	Slope of the roof	= 30º
iv)	Spacing of Purlins	= 1.4 m c/c
v)	Roof Coverage	= G.I. Sheets

Neglect wind pressure. Use unequal angle section.

b) A prestressed concrete beam of overall size of 300 × 600 mm is simply supported over a span of 6 m. The beam carries a point load of 25 kN at its center. The beam is prestressed with a prestressing force of 960 kN. The prestressing tendons are located at the 100 mm from bottom face. Calculate the extreme fiber stresses in the beam at mid span. **[8]**

Total No. of Questions : 12] **[Total No. of Pages : 2**

P775

[3967]-3004
T.Y. B.Arch. (Interior Design)
HISTORY OF ARCHITECTURE, ART CULTURE AND INTERIORS - III
(Annual Pattern)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Questions 1 & 7 are compulsory.***
3) ***Answer any three questions from the rest five in each section.***
4) ***Draw sketches wherever necessary.***
5) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Write short notes with sketches (Any Four) **[20]**

a) Maratha residential Architecture.

b) Rococo interiors.

c) Contemporary Indian Interior Design.

d) Chandigarh.

e) Art Nouveau.

f) Laurie Baker.

Q2) Describe Hassan Fathey's Architecture with suitable examples. **[10]**

Q3) Discuss the Colonial Architecture of India. **[10]**

Q4) Explain the religious architecture of Peshwa period. **[10]**

Q5) Discuss the contribution of Le Corbusier to Indian Architecture. **[10]**

Q6) Explain the philosophy & works of any two Indian Architects of Post Independence period. **[10]**

P.T.O.

SECTION - II

Q7) Write short notes with sketches (any 4) : **[20]**

a) C.I.A.M.

b) De Stijl.

c) Arts & Crafts Movement.

d) Frank Lloyd Wright.

e) Chair designs by two master designers of 20th century.

f) Expressionism.

Q8) Discuss the works of Mies Van Der Rohe. **[10]**

Q9) Discuss any two town planning theories of 20th century. **[10]**

Q10) Discuss the philosophy of Bauhaus school of thought . **[10]**

Q11) Explain the works of any two master architects of Modem Architecture. **[10]**

Q12) Discuss contemporary furniture design with respect to materials & techniques. **[10]**

✷ ✷ ✷

Total No. of Questions : 8] **[Total No. of Pages : 3**

P778

[3967]-1001
F.Y. B.Arch. (Interior Design)
THEORY OF STRUCTURES - I
(2003 Pattern) (Annual)

Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***Answer any three questions from each section.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Use of electronic calculator is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Explain the following : **[8]**
- i) Varignon's theorem of moment.
- ii) Law of triangle of forces.
- iii) Bow's notations.
- iv) Lami's theorem.

b) For the given coplanar force system shown in Figure 1.b, find the magnitude, direction and point of application of resultant from point A. **[8]**

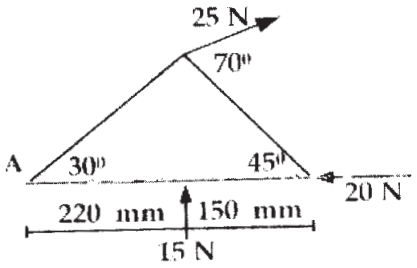

Fig. 1.b

Q2) a) Explain with neat sketches different support conditions. **[4]**

b) Find the reactions for the beam supported and loaded as shown in Figure 2.b. **[9]**

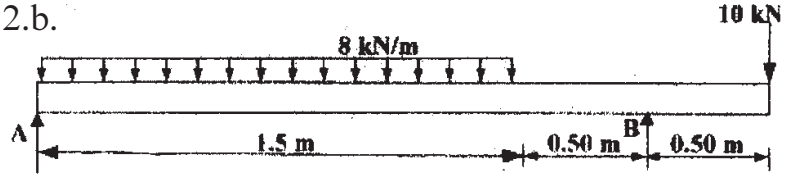

Fig. 2.b

P.T.O.

c) Explain different types of beams with neat sketches. **[4]**

Q3) a) What is the moment of inertia for an isosceles triangle about its centroidal axis and also about its base? **[6]**

b) Plot the shear force and bending moment diagram for a simply supported beam of span *l* and loaded with a uniformly distributed load *w* over half of the span form left hand support. **[6]**

c) What is a perfect truss? Give an example with neat sketch. **[5]**

Q4) a) Explain normal stress, lateral strain, volumetric strain, bulk modulus. **[8]**

b) A rod of 12 mm diameter and 1000 mm length is subjected to a pull of 20 kN. Find linear and lateral strain. Find bulk modulus and shear modulus. Take $E = 1.8 \times 10^5$ N/mm^2 and $\mu = 0.3$. **[8]**

SECTION - II

Q5) a) Explain the terms used in the flexure formula. Draw the typical bending stress distribution diagram for rectangular cross section simply supported beam, subjected to central point load and cantilever beam subjected to point load at the free end. **[8]**

b) A simply supported beam of span 4m is subjected to uniformly distributed load of 12 kN/m. The beam has a rectangular cross-section of 230 mm × 450 mm. Draw the shear stress distribution diagram for the section subjected to maximum shear force. **[9]**

Q6) a) Find the deflection at point C and D for the beam shown in Figure 6.a. using double integration method. Take EI constant. **[8]**

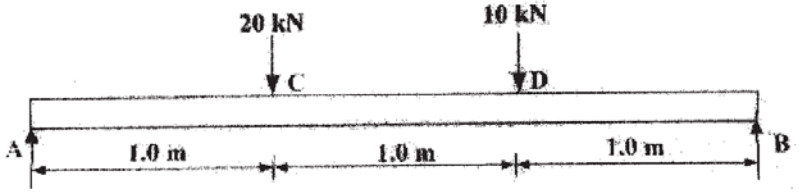

Fig. 6 a

b) Find the forces in the members of the truss shown in Figure 6.b **[9]**

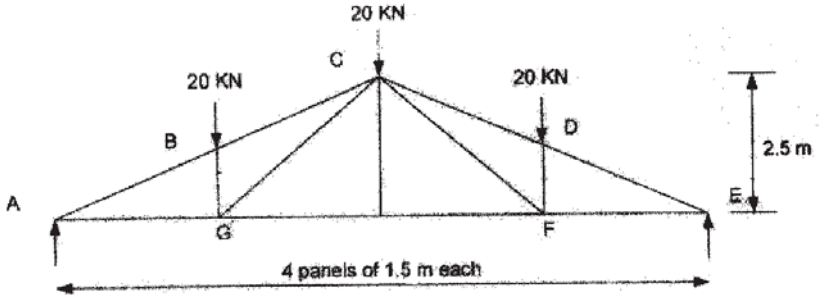

Fig. 6 b

Q7) a) With neat sketches show the centroid for right angled triangle, isosceles triangle, semicircle and quarter circle. **[8]**

b) Obtain the moment of inertia of the hollow rectangular cross-section with the outer dimensions as 350 mm × 200 mm and thickness equal to 25 mm. **[8]**

Q8) a) Explain with suitable examples direct and bending stresses. What is the condition for 'no tension' for a column with rectangular cross-section subjected to eccentric loading? **[8]**

b) A column is carries a vertical load of 500 kN at point Q. Point Q is at an eccentricity of 50 mm from both the centroidal axis. Find the maximum and minimum stress in the column section shown in Figure 8.b. **[8]**

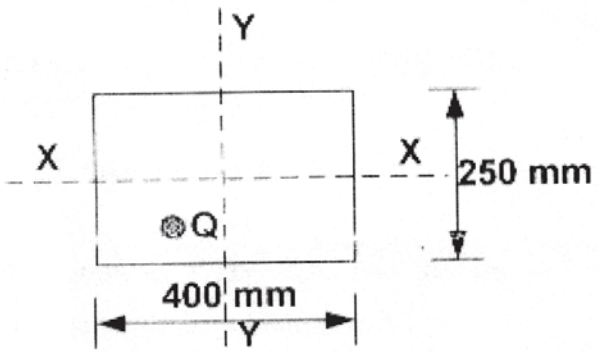

Fig. 8 b