

Total No. of Questions : 6]

SEAT No. :

P1657

[Total No. of Pages : 2

[4167] - 6

M.Arch. (Landscape Architecture)
ENVIRONMENTAL LEGISLATION AND ECONOMICS
(Sem. - III)

Time :3 Hours]

[Max. Marks :75

Instructions to the candidates :-

All Questions are compulsory.

SECTION - I

Q1) Judicial Activism and Public Interest Litigations have done a grate job in protection and conservation of Environment. **[15]**

OR

Water being the state subject, the Water (prevention and Control of pollution) Act, 1974 has been enacted by the centre. Explain with functions of State Pollution Control Board.

Q2) Explain in detail concept of 'waste' as a pollutant and the details of urban waste management with different rules and regulations available to manage the Waste. **[15]**

OR

Explain the Umbrella Legislation and the powers of the Central Government.

Q3) Short Notes (any Two) :

[5 Marks Each]

- a) Forest Economics
- b) Right to Life
- c) Conflict of Marine Ecology and economy
- d) Environment Impact Assessment

SECTION - II

Q4) Explain the role of ‘self accreditation systems’ like TERI GRIHA, to conserve urban environment. **[10]**

OR

Explain the process for declaration of Reserved Forest, Protected Forest, and the Village forest under Indian Forests Act. Also explain the contribution of forests in the economic growth of the country.

Q5) Coastal Regulation Zone is essential to protect and Preserve Marine Biodiversity. Critically analyse with the help of Different Zones. **[10]**

OR

Explain the conflicts between Urbanisation and Urban Biodiversity in the light of International Bio Diversity Convention of 1992.

Q6) Short notes (Any Three) **[5 Marks Each]**

- a) MSW management
- b) Wildlife Sanctuary
- c) Green House Effect
- d) Equitable Benefit sharing
- e) International Environmental Law.

❧❧❧

Total No. of Questions : 10]

SEAT No. :

P1655

[Total No. of Pages : 2

[4167] - 4

M.Arch. (Computer Applications)
(CA - 301) INTRODUCTION TO PROGRAMMING
(2008 Pattern) (Sem. - III)

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 diagram must be drawn wherever necessary.*
- 5) *Figures to the right indicate full marks.*
- 6) *Assume suitable data if necessary.*

SECTION - I

- Q1)** a) Define the terms programming language, system software. Explain with suitable example. [6]
b) What is the need of data types in high level language? Explain the data types in C, with examples. [7]
- Q2)** a) Explain comparison operators in C. [6]
b) Write a C program to find a given number is divisible by 2 or not? [6]
- Q3)** a) Compare while and do-while loops in C. [6]
b) Write a program in C to print first 100 odd numbers using for loop. [6]
- Q4)** a) Differentiate between structure and class. [6]
b) What is a function? Also write different ways of passing function parameters. [6]
- Q5)** a) Explain the concept of constructors and destructors in C++. [6]
b) Explain the following features of Object Oriented Programming. Your explanations should include examples. [6]
i) Data hiding
ii) Polymorphism

P.T.O.

SECTION - II

- Q6)** a) Explain the properties and event procedures for command button with example. [6]
b) Explain various data types used in Visual Basic. [7]
- Q7)** a) Java program is platform independent. Explain. [7]
b) Write a note on advantages of Java over C++. [6]
- Q8)** a) What is Visual Basic Events? Give some examples. [6]
b) Explain different visual components in Visual Basic. [6]
- Q9)** Write a C++ program to read parameters for various geometrical objects, and display their areas. (use class/object and inheritance) [12]
- Q10)** Write short notes on Any Three. [12]
- a) Images Box in VB
 - b) Interpreter
 - c) J2ME
 - d) Function Overloading
 - e) Compiler



Total No. of Questions : 11]

SEAT No. :

P1656

[Total No. of Pages : 2

[4167] - 5

**S.Y.M.Arch. (Architectural Conservation)
HISTORIC HOUSING AND LANDSCAPES
(Theory) (Sem. - III)**

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 5 From Section - I and Question 6 from Section - II is compulsory.*
- 3) Answer any 2 questions from the remaining questions in Section - 1 and any 3 from Section - 2.*
- 4) Figures to the right indicate full marks.*

SECTION - I

Q1) Enumerate & Compare physical characteristics of a Maratha town and a Cantonment area in the same region, as example of historic heritage areas. **[10]**

Q2) Explain 'Peth' as a typical unit of city planning in Maratha Town. **[10]**

Q3) Explain the role of Elevation Control Guidelines in maintaining the Historic Identity of a town. **[10]**

Q4) Redevelopment Approach stresses the infrastructural facilities of a core area- Explain. **[10]**

Q5) Write short Notes (any 3) : **[15]**

- a) Architectural features of 'Chawl' in Mumbai.
- b) Importance of Heritage Listing.
- c) Ethnicity & Historic Housing.
- d) Commercial Zones in core areas.

P.T.O.

SECTION - II

- Q6)** Write Short Notes (any 2) : **[10]**
- a) Polytheist gardens.
 - b) ‘Nandanvanam’.
 - c) INTACH listing of historic gardens.
 - d) Concept of Sacred groves in India.
- Q7)** Discuss the Conservation philosophical background in defining the concepts of the historic landscapes in Florence charter. **[10]**
- Q8)** Discuss the contribution of King Firoz Shah in development of Historic gardens in India. **[10]**
- Q9)** Comment on concepts of Historic landscape assessment and their impact on Value based approach. **[10]**
- Q10)** Discuss the concept of Cultural landscapes and its sub-categories with an example each. **[10]**
- Q11)** Comment on Mughal Gardens and their provincial stylistic components through comparisons of Indian examples with the other Asian examples. **[10]**



Total No. of Questions : 8]

SEAT No. :

P1652

[Total No. of Pages : 2

[4167] - 1

M. Arch. (Arch. Conservation)
CONSERVATION POLICIES AND PRACTICES
(Sem. - III)

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 and 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) Status of ownership vis-à-vis Heritage Conservation.
- b) JNNURM & Heritage Conservation.
- c) Ancients Monuments Act.

Q2) Which provisions in the Standardised Building Bye-laws in Maharashtra can be used for conservation of heritage precincts? Give details. **[10]**

Q3) What are the basic premises & provisions of the INTACH charter? **[10]**

Q4) Give details of the provision of Conservation of Heritage in the Indian Constitution. **[10]**

P.T.O.

SECTION - II

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

- a) Legal Rights
- b) Historical Authenticity
- c) NARA Document
- d) Policies for Conservation of a Religious Building.

Q6) Can the provisions of 'Washington Charter' help in conservation of heritage precincts in old Indian cities? Give your views. **[10]**

Q7) What can be the suitable measures to compensate loss of development rights of a citizen to promote conservation of a 'Heritage Structure'. **[10]**

Q8) Discuss provisions of Model Bye-laws for Heritage Conservation of a Precinct. **[10]**



Total No. of Questions : 6]

SEAT No. :

P1653

[Total No. of Pages : 2

[4167] - 2

M. Architecture (Landscape Arch.)

LANDSCAPE CONSERVATION

(Sem. - III)

Time :3 Hours]

[Max. Marks :75

Instructions to the candidates:-

- 1) Question 4 is compulsory.
- 2) *Out of remaining, answer any two questions from each section.*
- 3) *Neat sketches muste be drawn wherever necessary.*
- 4) *Answer questions of each section in separate answer books.*

SECTION - I

- Q1)** a) Explain Tree and Forest Conservation in India
b) Explain traditional methods of water conservation with suitable examples. **[20]**

- Q2)** a) Explain how a landscape architect can contribute in urban conservation
b) Explain environmental significance of plants, insects and animals with examples. **[20]**

- Q3)** a) What are Cultural Landscapes? What is current thinking related to cultural landscapes all across the world.
b) Explain ecological and archeological values related to historic conservation. **[20]**

SECTION - II

- Q4)** Explain how the non-conventional energy resources can be integrated in landscape design. **[15]**

P.T.O

Q5) Which are the sites that can come under the category of Disturbed Landscapes. How as a sensitive landscape architect you would deal with disturbed landscapes. Explain with examples. **[20]**

Q6) a) Explain the Environmental Act and Policy in India
b) Write a short note on Bioreserves in India. **[20]**



Total No. of Questions : 6]

SEAT No. :

P1654

[Total No. of Pages : 2

[4167] - 3

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

ENVIRONMENTAL IMPACT ASSESSMENT

(Sem. - II) (Theory)

Time :3 Hours]

[Max. Marks :75

Instruction to the candidates:-

Both the sections are compulsory.

SECTION - I

Q1) Write brief note on Generation of Environment Management Plan and importance of the same. **[15]**

OR

Explain the difference between Impact Prediction and Impact Identification.

Q2) Explain the process of getting 'Environmental Clearance' with the help of Flow Chart. **[15]**

OR

Discuss in detail the importance of Base line data collection in the risk assessment, with its different sampling methods.

Q3) Write Short Notes: (any two) **[2 × 5 = 10]**

- a) Prediction and assessment of impacts on biological environment
- b) Impact on Archeological Monument and EIA
- c) Ambient Air Quality
- d) Environmental Monitoring

P.T.O

SECTION - II

Q4) What are the types and sources of soil / land pollution and the agency to control the pollution of the soil? **[10]**

OR

Elaborate some of the important data sources and why are they important in Risk Assessment?

Q5) Give the difference between 'Public Hearing' and 'Public Consultation' and importance of both in getting Environmental Clearance. **[10]**

OR

Explain the Screening process in an EIA study? Explain the various categories used for Screening of projects by the Ministry of Government and Forests, Government of India?

Q6) Write Short Notes: (any three) **[3 × 5 = 15]**

- a) Note on Category A, Band B1 projects.
- b) Purpose and objective of EIA.
- c) Health Impact Assessment.
- d) Terms of Reference.
- e) Social Impact Assessment.



SEAT No. :

[Total No. of Pages : 3

P619

[4167] - ID 401

Fourth Year B.Arch. (Interior Design)

ARCHITECTURAL DESIGN - IV

(2008 Course) (onwards)

Time :18 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) *Your answer will be valued as a whole.*
- 2) *Assume suitable data wherever necessary.*
- 3) *Single line sketch plans of the entire scheme with the site to the required scale shall be submitted by the candidates at the end of first day. These drawings shall not be returned the candidates, therefore due record of the same should be kept for subsequent days. The candidate will not make any considerable departure from the sketch submitted on the first day.*
- 4) *The drawings should be self explanatory.*

INSTITUTE OF INTERIOR DESIGN AT PUNE.

A private management in Pune proposes to construct a building for Institute of Interior Design to run diploma course of two years approved by DTE. A site is in institutional zone of Kharadi. The Site measures 90m by 70m with 12m wide road on the East as shown in FIG-1. You are required to give a design solution for the same for following requirements.

Space Requirements carpet area in Sq. mts.

ADMINISTRATION

- | | |
|--|-------------|
| a) Entrance lobby with waiting and reception | 80 |
| b) Administrative office for 2 staff | 30 |
| c) Director's cabin with attached toilet | 30 |
| d) Meeting room with pantry | 40 |
| e) Staff room for 6 staff | 40 |
| f) Store and Xerox facilities | 20 |
| g) Toilets for both sex | As required |

ACADEMICS

- | | |
|--|---------|
| i) Lecture halls 2 no for 40 students | 60 each |
| ii) Studios 4 no for 40 students | 80 each |
| iii) Furniture making workshop | 120 |
| iv) Computer lab | 60 |
| v) Seminar room with A-V facility for 40 | 60 |

P.T.O.

vi) Library with baggage counter, librarian's counter, reading and stacking area	180
vii) Toilet facility for both the sex	As required

Public Areas

1) Seminar hall for 120 capacity	150
2) Exhibition and display	150
3) Cafeteria with Kitchen, store and indoor seating for 40	80

Open Parking for 6 four - wheelers, 60 two - wheelers and 1 mini bus should be provided.

NOTES :

- Toilet number and areas are to be provided adequately.
- Circulation and allied areas should not exceed 40% of carpet area.
- Height of the building not to exceed 15 m.
- Ground coverage not to exceed 33% of plot area.
- Set back 6 m from all sides.
- Services like UG water tank, A/C plant, transformer, septic tank, etc to be indicated on site at appropriate locations.
- Outdoor interactive areas to be provided wherever necessary.

DRAWING REQUIREMENTS :

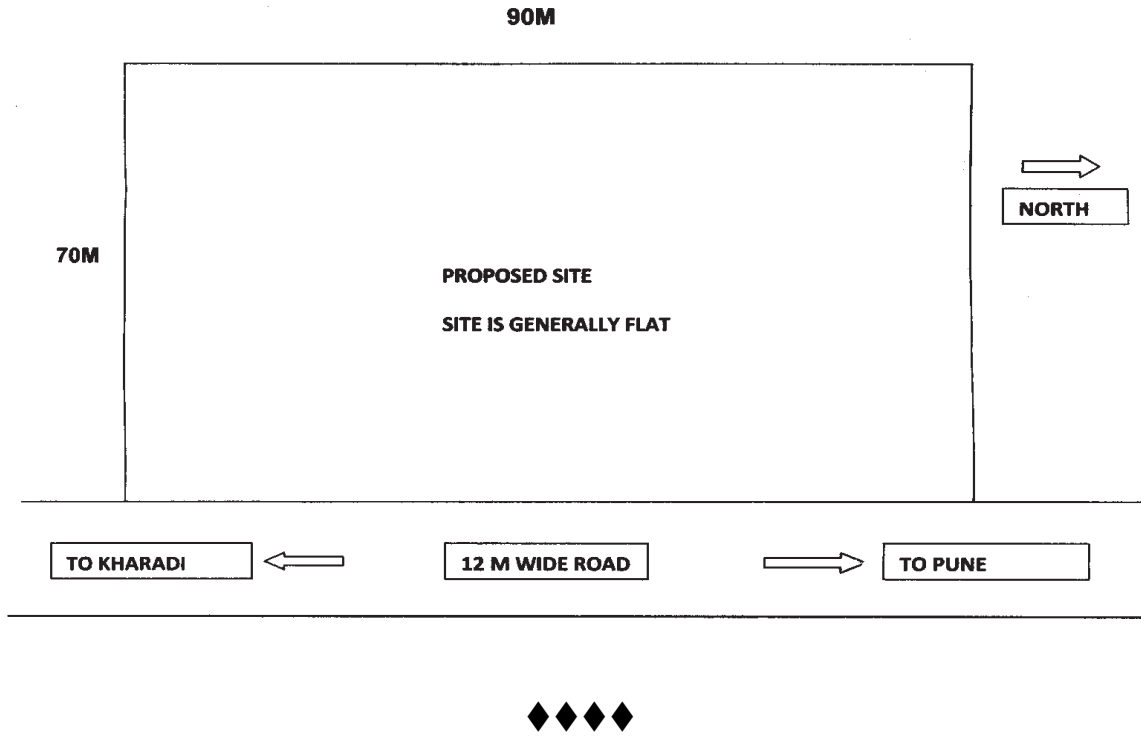
First Day

a) Site plan with building blocks showing zoning	1 : 200
b) Single line floor plans and section (at least one)	1 : 200

Final Day

i) Site plan with access, roads, parking, roof plan of building, landscaped areas and services;	1 : 200
ii) All floor plans showing interior layout and openings	1 : 100
iii) Sections and elevations (min ONE)	1 : 100
iv) Furniture detail of Desk in the studio with provision for storage	1 : 10
v) Interior view of the exhibition cum display	

FIG-1



Total No. of Questions : 8]

SEAT No. :

P620

[Total No. of Pages : 2

[4167] - ID 403

Fourth Year B.Arch. (Interior Design)

PROFESSIONAL PRACTICE

(2008 Course)

Time :3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) *Question Nos. 1 & 5 are compulsory. Out of the remaining, attempt any two from each section.*
- 2) *Answers to the two sections shall be written in separate books.*
- 3) *Figures on the right indicate full marks.*

SECTION - I

- Q1)** a) What is the role and scope of an Architect? [10]
b) What is the purpose of Architectural competitions and methods of conducting them? [10]
- Q2)** Write short notes on : (Any Five) [15]
a) Purpose of Valuation
b) Sinking Fund
c) Easement Rights
d) Power of Attorney
e) Solvency Certificate
f) Specifications
- Q3)** Write briefly on : [15]
a) The Architect's Act, 1972.
b) Main functions of COA
c) Aims and objectives of IIA
- Q4)** a) What are the responsibilities of an Architect towards : [9]
i) Client
ii) Contractor
iii) Local Authorities
b) What are specifications, bill of quantities and schedule of rates? State the importance of each of them? [6]

P.T.O.

SECTION - II

- Q5)** a) What is a Tender? List the various types of tenders? [7]
b) Write in brief about the various papers and documents included in a tender document? [7]
c) Differentiate between (Any three) : [6]
i) Item Rate tender and Lumpsum Tender
ii) Defects Liability Period and Liquidated Damages.
iii) Actual Completion and Virtual Completion
iv) Open Specifications and Closed Specifications.
- Q6)** Write short notes on (Any Five) : [15]
a) Contract Document
b) Clerk of works
c) Defects Liability Period
d) Insurance of Works
e) EMD – Earnest Money Deposit
f) Virtual Completion
- Q7)** a) What must be the Architect's observations when he visits the site [10]
i) For his first visit, before designing a building on it?
ii) When excavation work is in progress?
iii) RCC slab is being casted?
iv) Brickwork is in progress?
v) Upon completion of building?
b) Write your actions on [5]
i) If EMD amount is not submitted along with tender.
ii) If the individual owner expires during tendering process.
iii) If the contractor declines to accept work after awarded the contract to him.
iv) Contractor has not quoted rates for a few items in the tender.
v) Client decides to abandon work.
- Q8)** a) What is Arbitration? How does it help in sorting out disputes during and after construction? [6]
b) Write short notes on : (Any Three) [9]
i) Sole Arbitrator
ii) Joint Arbitration
iii) Umpire
iv) Role of Architect in arbitration.



SEAT No. :

[Total No. of Pages : 3

P910

[4167] - 41

Fourth Year B.Arch.

ARCHITECTURAL DESIGN - IV

(Yearly Pattern)

Time :18 Hours]

[Max. Marks :100

Instructions to the candidates:-

- 1) Your answer will be valued as a whole.*
- 2) Use of calculator, slide rule, Log tables, etc. is permitted.*
- 3) The candidate has to submit schematic design to the scale 1 : 200 at the end of first day. These drawings shall not be returned to the candidates. No significant departure from this schematic design is permitted.*

CORPORATE HEAD QUARTERS

Preamble

A leading fashion house in from Bangalore wishes to set up its corporate head quarters. This fashion house is a major player in the readymade garment industry across the globe. They are a well established Indian manufacturer & exporter successfully meeting the demands of global readymade garment markets. Their facilities, technology and standards of performance meet international paradigms.

Incorporated in 1980 this company is already one of India's major manufacturer / exporters of readymade garments. They have more than 10 factories in and around Bangalore that manufacture Outerwear, Blazers and Pants (Formal and Casuals), Shorts, Shirts, Blouses, Denim Wear, Swim Wear, Active and Sports Wear. The Company today has the capacity to produce and export 1 million Woven & 0.3 million Knit apparel per month through its factories that employ more than 15000 workers. They also have a full fledged in-house design team creating and developing exciting collections each season.

Presently they operate from two small corporate offices in Bangalore, one of them being located in the premises of the manufacturing plant. They propose to build a larger premise for their Corporate Head Quarter which will include administration office, Design office, tailoring workshop and marketing & sales office. The site chosen is along Hosur road in Koramangala area of Bangalore near the Forum Mall (Please refer the site plan enclosed).

The architectural design has to manifest the image of the company and their speciality.

P.T.O.

Space requirements (All areas in sq.m.)

- 1) **Administrative Office**
 - a) Entrance foyer and reception area 100.00
 - b) President's Cabin 50.00 + toilet
 - 1) Ante room 12.00
 - c) Personal Asst. to Director 20.00
 - d) Vice president & Chief Exe Officer (5 nos.) 40.00+toilet (each)
 - e) Accounts and administrative staff (40 work stations) 6.00 per work station
 - f) Board room with sample display facility and audio visual facility 100.00
 - g) Pantry, store and wash room 40.00
 - h) Toilets for staff as required.
 - i) Covered porch and drop off point.
- 2) **Design Office and Tailoring Workshop**
 - a) Five Senior Designers' studio cabin 40.00 + toilet (each).
 - b) Fifteen Junior Designers' work areas 20.00 (each)
 - c) Cutting Tables 3 Nos. 8.00
 - d) Store 50.00
 - e) 30 tailors work stations with machines 5.00 (each)
 - f) Toilets for staff as required.
- 3) **Marketing and Sales Office**
 - a) Marketing head cabin 40.00 + toilet
 - b) Ten Sales Managers 20.00 per head
 - c) Thirty marketing executives 10.00 per head
 - d) Toilets for staff as required.
- 4) **Small Buotique**
 - a) Display areas 150.00
 - b) Two Changing rooms & one toilet (included in above area)
- 5) **Canteen** for staff (Kitchen, eating space, pantry, store, wash) 500.00
- 6) **Parking** for 50 cars, 150 two wheelers.
- 7) All necessary spaces to house architectural services (generator, A/C plant room, fire fighting, security system).
- 8) Lifts, staircases, lobbies, as required.

Bye laws

Marginal space should be min 6 meters from sides and 10 meters from main road. Maximum Height of the building 70 Meters.

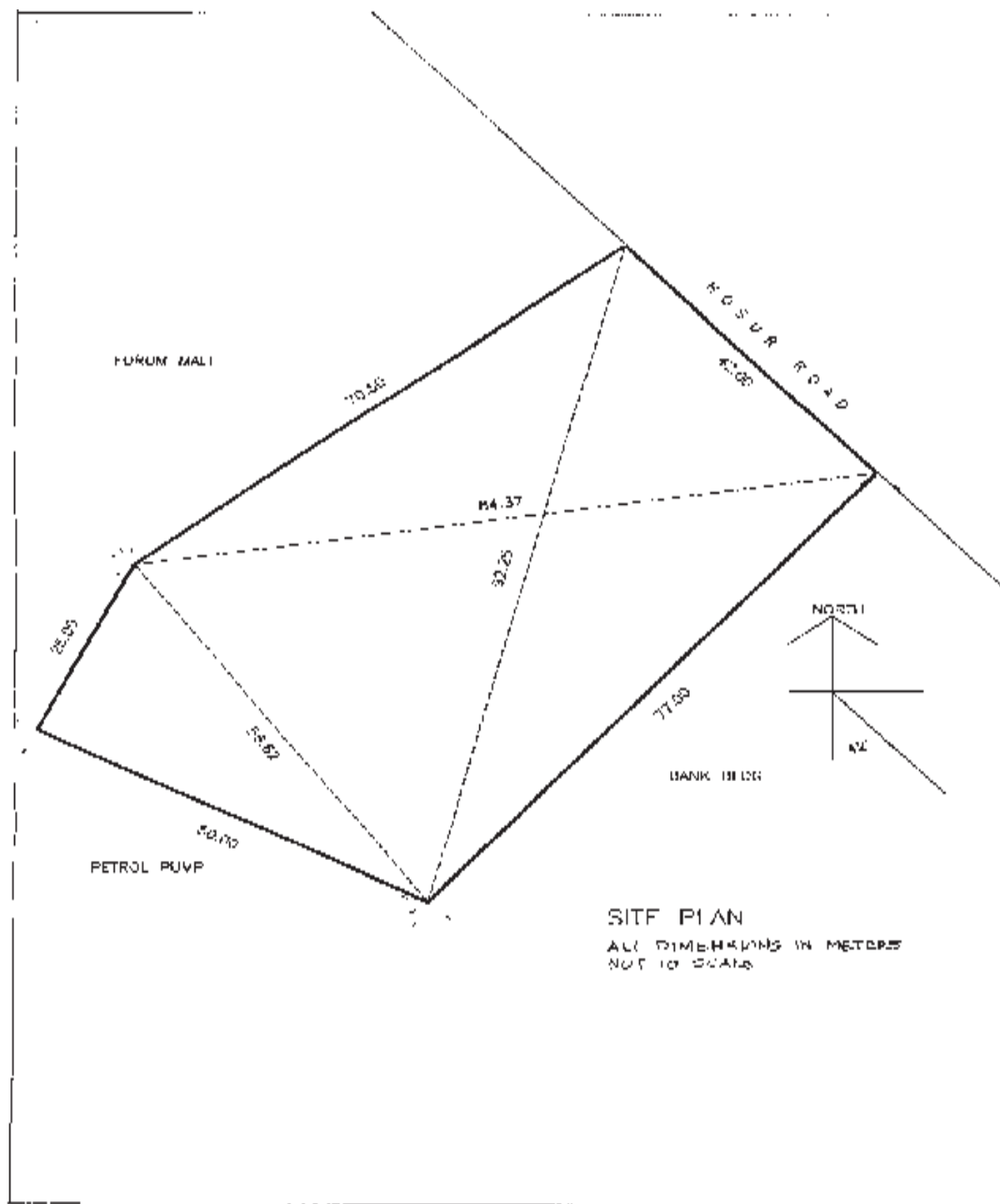
Drawings requirements :

Site Plan 1 : 200

All floor plans (Typical floors may only be drawn once) 1 : 200

Two Sections 1 : 200

One sketch Perspective.



Total No. of Questions : 6]

SEAT No. :

P1491

[Total No. of Pages : 2

[4167] - 305

T.Y. B.Arch.

**SPECIFICATION WRITING - b
(2008 Pattern) (Theory) (313431)**

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer to 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.*
- 5) *Use of logarithmic tables, slide rules, Mollier charts, electronic pocket calculator and steel tables is allowed.*
- 6) *Assume suitable data, if necessary.*

SECTION - I

Q1) a) Describe briefly the objectives and importance of specification writing for architectural projects. State the important aspects to be considered in the design of specifications. **[10]**

OR

b) What are the classifications of specifications of specification writing? Elaborate any one in detail. **[10]**

Q2) Write detailed material specifications of (Any Two) : **[20]**

- a) Brick.
- b) Timber for Doors.
- c) Cement.
- d) Glass for windows.

Q3) Write detailed specification on method of execution and workmanship for Any Two of the following : **[20]**

- a) 1:4 Cement plaster with Neeru finish.
- b) White Wash for ceiling.
- c) Random Rubble Masonry.
- d) Earthwork in excavation in foundation.

P.T.O.

SECTION - II

Q4) A toilet on the ground floor of a college building is to be designed for a disabled person. Write down the list of finishing items required for this purpose and brief specification for each of the listed items. **[20]**

OR

A free standing R.C.C. staircase is to be added as a fire escape staircase for a 3 storied building- Write down the list of items required and brief specification for each of the listed items. **[20]**

Q5) Specify materials and workmanship standards for the following works and give reasons for your choice (Any Four) : **[20]**

- a) Entrance Door for a Multiplex.
- b) Flooring for school classroom for visually challenged.
- c) Internal Plaster for residential building.
- d) Handrail for internal staircase in a residence.
- e) Bathroom flooring in a college toilet.
- f) Electrification for an industrial building.

Q6) Specify following materials by trade/manufacturer's name (Any Ten) : **[10]**

- a) Stainless steel kitchen sink.
- b) Aluminum section for windows.
- c) Electric cables.
- d) Laminate for furniture.
- e) Clay roofing tiles.
- f) Diesel generator.
- g) Cement paint.
- h) Bathroom fittings.
- i) Lift.
- j) Air conditioner.
- k) PVC water storage tank.
- l) Adhesives.



Total No. of Questions : 4]

SEAT No. :

P1658

[Total No. of Pages : 2

[4167]-7

Second Year M. Arch. (Environmental Architecture)

**RENEWABLE ENERGY SYSTEMS AND ENVIRONMENTAL
TECHNOLOGIES**

(Sem. - III)

Time :2.5 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.1 and Q.3 are compulsory.*

SECTION - I

Q1) Compulsory question.

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. **[25]**

The apartment features are as follows :

- a) The apartment is located in a middle income residential neighborhood, consisting of 1.5 BHK flats, with 2 bathrooms in each flat.
- b) There are 6 flats per floor and 6 floors in the building.
- c) The hot water is to be supplied to the kitchen and bathroom accordingly assume the hot water requirement for the apartment.
- d) Calculate the terrace space available, assuming that each flat is averagely 600 sq. ft.
- e) Assume all other necessary details.

Q2) Write short notes on the following (Any Two) :

[5 marks each]

- a) Nuclear Energy.
- b) Solar Hot water system.
- c) Waste Management in Pune.
- d) Issues related to Waste water Management in India.

P.T.O.

SECTION - II

Q3) Compulsory Question

[30]

As an Environmental consultant to a Developer for a residential 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. 2,15,000 sq.m. and is located on the fringe of a city in Madhya Pradesh.
- b) As per the EIA requirements, 40% 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. 1,15,000 sq.m. The residential units (flats) proposed are approx. 500, with three commercial shops in the township.

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.

Q4) Write notes on the following (Any Two) :

[5 marks each]

- a) Manure from Biomass.
- b) Wind Energy.
- c) Rain Water Harvesting.
- d) Bio compost.



Total No. of Questions : 6]

SEAT No. :

P1659

[Total No. of Pages : 2

[4167]-8

M. Arch. (Computer Applications)

GIS AND REMOTE SENSING

(Sem. - III)

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) In detail describe any one of the following Data Model used in GIS with examples and diagrams? **[13]**

- a) Vector Data Model.
- b) Raster Data Model.

OR

Data Exploration techniques in GIS?

Q2) Short notes on (Any Two) : **[13]**

- a) Typography.
- b) GIS component: Hardware and Software.
- c) Photographic Film.

Q3) Describe the spatial feature selection with attribute query? **[12]**

OR

Describe the term Network Analysis? Explain with example the process of extraction of shortest route?

SECTION - II

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

Or

Describe the interaction between the radiation with atmosphere and earth's surface?

P.T.O.

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

OR

Describe the Photographic Film and Opto-Mechanical sensors used for Remote Sensing?

Q6) What is Digital Image Processing? Describe any four image processing techniques? **[12]**

* * *

P604

SEAT No. :

[Total No. of Pages : 4

[4167]-31
T.Y. B. Arch.
ARCHITECTURAL DESIGN - III
(Yearly 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 section at 1:200 at the end of the first day. These sketches shall not be returned to the candidate, therefore due record should be kept for reference on the subsequent day. Candidates should refrain from making serious deviations from sketches submitted on the first day.*
- 4) The drawing should be self explanatory with structural clarity in drawings.*
- 5) Orientation of the site should not be changed while preparing the floor plans.*

Corporate Office Building

A reputed company desires to set up its Headquarters amidst the hustle and bustle of the city environs with a staff requirement of about 90 persons.

The client is looking for a built form that would address the concerns of energy efficiency by using passive design measures.

Design Brief -

Sr. No.	Particulars	Area
1.	Waiting and Reception	80 sq. m
2.	Administration	
	a. CEO Cabin	25 sq. m
	b. Secretary cabin	15 sq. m
	c. Audiovisual (2 × 45 sq. m)	90 sq. m
		130 sq. m
3.	Department heads	
	a. Accounts	15 sq. m
	b. Human Resource department	20 sq. m
	c. Purchase	15 sq. m
	d. Marketing	20 sq. m
		70 sq. m

P.T.O.

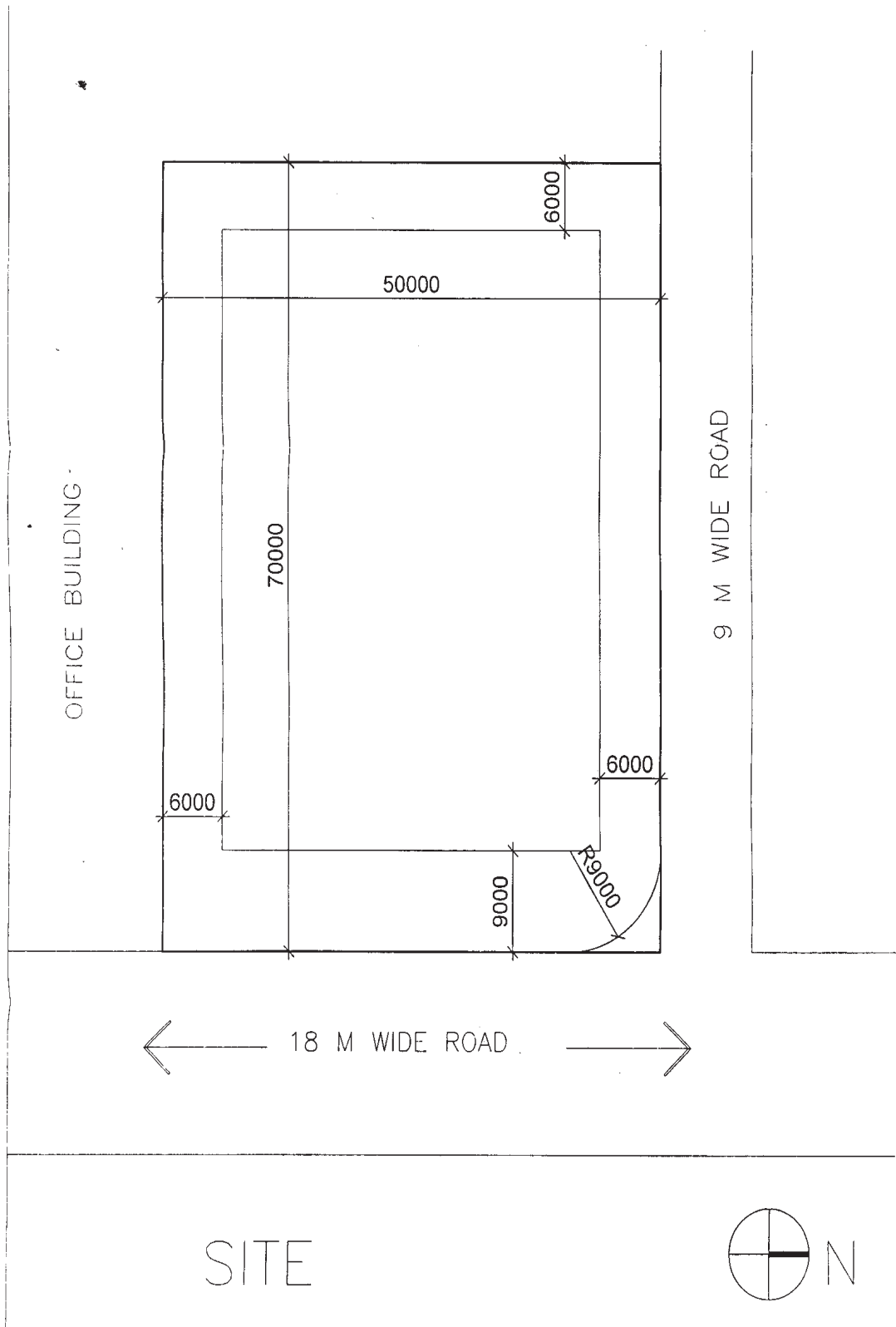
4.	Office areas : a. Accounts department with store b. Stores and purchases c. Marketing and customer care	80 sq. m 60 sq. m 40 sq. m
		180 sq. m
5.	Work stations : a. Project leaders (07 × 10 sq. m) b. Assistants (07 × 05 sq. m) c. Workstation for 75 persons	70 sq. m 35 sq. m 400 sq. m
		505 sq. m
6.	Recreation : a. Canteen 1. Indoor 2. Outdoor 3. Kitchen b. Gymnasium c. Indoor Games	70 sq. m 85 sq. m 30 sq. m 100 sq. m 40 sq. m
		240 + 85 sq. m
7.	Service Core Male Toilet: 3WC, 3 UR, 3 WHB Female Toilet : 3WC, 3 WHB Lift 1600 × 1600 mm Electrical Room : 10 sq. m HVAC Room : 15 sq. m 2 Staircases, Flight width 1500 mm Pantry 10 sq. m	
8.	Parking :	20 Cars, 50 nos. 2 wheelers

Site Parameters :

Plot Size	50 M × 70.00 M
Plot area	3500.00 sq. Mt.
Set back from Road	Front: 9.00 M, Side setback: 6.0 m
Height Permissible	16.0 M
Maximum ground coverage	35% of plot area
Basement Line	Till the setback line
Permissible F.S.l.	1.00

Drawing requirements :

1. Site Plan 1: 200
2. All floor plans 1: 100
3. Two sections minimum 1: 100
4. Two elevations minimum 1: 100
5. A perspective sketch of the building



Total No. of Questions : 5]

P605

SEAT No. :

[Total No. of Pages : 2

[4167] - 32

T.Y. B.Arch.

BUILDING CONSTRUCTION AND MATERIALS - III

(Yearly 2003 Pattern)

Time : 3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) *Use drawing sheets for section - I and answer book for section - II.*
- 2) *Neat drawings must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Question no. 3 is compulsory. Solve any one question out of remaining two questions in section - I. Both the questions in section - II are compulsory.*
- 5) *Assume suitable data wherever necessary and mention it in your answer.*

SECTION - I

- Q1)** a) Draw plan and section to a scale of 1:20 showing reinforcement details of RCC Cantilever balcony with simply supported balcony slab along the shorter side of the room having one-way floor slab. Balcony projection is 1.2m. **[15]**
- b) Draw one alternative way of supporting a cantilever balcony. Also Draw railing details and reinforcement in part isometric view. **[15]**
- Q2)** a) Draw plan and section to the scale of 1:10 of Timber Framed partition to be constructed for the recording studio. The partition would be 4.0m wide a 3.0m in height. **[15]**
- b) Draw joinery details at the scale of 1:2. **[10]**
- c) Provide material specification and finishes details at suitable scale. **[5]**

P.T.O.

- Q3)** Explain the following with neat sketches (any three) : **[30]**
- a) Provision in civil work for the installation of escalator.
 - b) Pile cap and Column construction.
 - c) Drained cavities in basement construction.
 - d) Any two roofing systems developed by CBRI.
 - e) Cement based waterproofing.

SECTION - II

- Q4)** Write Short Notes with neat sketches (any three) : **[24]**
- a) Edge Sliding folding doors.
 - b) Different types of RCC Retaining Walls.
 - c) Reinforced Brick slabs.
 - d) Types of R.C.C. staircases.
 - e) Ridge and eaves/gutter fixing details for steel truss with G.I or AC sheeting.
 - f) Setting out of a RCC framed Structure.

- Q5)** Write Short Notes with neat sketches (any four) : **[16]**
- a) Methods and materials of polishing of wood.
 - b) Use of different types of glass in building.
 - c) Process of Guniting and its uses.
 - d) Painting of surfaces of bricks, stones & plaster.
 - e) Light weight Concrete.
 - f) Application of ferrous metals in buildings.



Total No. of Questions : 8]

SEAT No. :

P606

[Total No. of Pages : 3

[4167] - 33
T.Y. B.Arch.
THEORY OF STRUCTURE - III
(Yearly 2003 Pattern)

Time : 3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) Answer any three questions from each section.*
- 2) Answer to each section should be written in separate books.*
- 3) Draw neat sketches wherever necessary.*
- 4) Figures to the right indicate full marks.*
- 5) Assume suitable data if necessary.*
- 6) Use of non programmable electronic calculator is allowed & use of cell-phones is not allowed.*
- 7) Use of steel table is allowed.*
- 8) Use M20 & Fe415 in R.C.C. Design.*

SECTION - I

Q1) Write short notes on : **[16]**

- a) Define Bearing Capacity of soil & State values of it for various types of soils.
- b) Importance of Shear-Key in Retaining wall.
- c) Details of Reinforcement in Retaining wall.
- d) Test pits or Trial Pits.

Q2) Check the stability of retaining wall for following data : **[17]**

- a) Top width of stem = 400mm
- b) Bottom thickness of stem = 700mm
- c) Height of retaining wall - 4300mm
- d) Thickness of Base slab = 700mm
- e) Base width of wall =3100mm
- f) Density of retained material = 17 KN/Cu-m
- g) Angle of repose = 30 degrees
- h) Coefficient of friction = 0.52
- i) S.B.C. of soil = 270 KN/Sq-m

P.T.O.

Q3) Design R.C.C dog-legged stair case for office building for following data : **[16]**

- a) Width of flight = 1500 mm.
- b) Width of landing on both sides = 1700 mm
- c) Floor to floor height = 3600mm
- d) Tread = 300mm & Riser = 150mm

The stair case is supported on both sides on beam of width 300mm on outer edge of landing, use L.S.M. Method of design, Draw details of reinforcement.

Q4) Design an isolated square sloping footing for a column 400 mm × 400 mm carrying axial load of 1000 KN, Assuming S.B.C of soil as 225 KN/Sq-m. Check the footing for flexure & two way shear only Draw details of reinforcement. **[17]**

SECTION - II

Q5) Write short notes on any four : **[17]**

- a) Types of retaining walls with neat sketches.
- b) Active and Passive earth pressure.
- c) Structural details of Intze type of water tank.
- d) Types of stair cases & loading distribution.
- e) Effect on eccentric loadings on Columns.

Q6) Design a built up column using two ISLC-300 placed back to back. the column is 10 m high subjected to axial load of 800 kN, It is restricted in position but not in direction at both ends, find spacing between two sections to take maximum load. Design also suitable lacing system. **[17]**

- Q7) a)** A pre stressed concrete beam of over all size 230mm × 600mm is simply supported over effective span of 6.00m, it carries U.D.L of 20 KN/m over entire span excluding self weight, the beam is pre stressed with a pre stressed with pre stressing force of 700 KN, the pre stressing cables are located at 120 mm from bottom find extreme fiber stresses in the beam at the centre span. [9]
- b) Explain the following terms : [7]
- i) Pre tensioning & post tensioning.
 - ii) Use of high strength steel & high strength concrete in pre stressing.
- Q8) a)** Design a angle purlin for a factory building for D.L + L.L for the following data : [9]
- i) Span of truss - 18m
 - ii) Spacing of truss - 4.5m
 - iii) Slope 1:2 (one horizontal to two vertical)
 - iv) Spacing of purlins -2.0m
 - v) Roofing material -G.I. Sheets.
- b) Write any two short notes : [7]
- i) Details of Combined footing (Slab & beam type).
 - ii) Limit state method.
 - iii) Foundation problem at site.



Total No. of Questions : 4]

P607

SEAT No. :

[Total No. of Pages : 2

[4167] - 34

T.Y. B.Arch.

BUILDING SCIENCE & SERVICES - II

(Yearly 2003 Pattern)

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) Figures to the right indicate full marks.*
- 4) All questions are compulsory.*

SECTION - I

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

- a) What are the types of fans used in Mechanical ventilation system?
Describe with sketches.
- b) What are the different types of filters used in Air-conditioning system?
Describe with sketches.
- c) Explain with appropriate sketches stack and wind effect of natural ventilation system.

Q2) Short notes (with sketches wherever necessary) (any four) : **[4 × 5 = 20]**

- a) Refrigeration cycle.
- b) Air handling unit.
- c) Plenum system of ventilation.
- d) Air-cooled condenser.
- e) Cooling tower.
- f) A.C. Ducting system.

P.T.O.

SECTION - II

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

- a) Explain with sketches various methods of controlling the structure borne noise in construction of walls and floors.
- b) State Sabine's Formula for finding reverberation time. Discuss about various types of acoustical materials used for sound insulation in a building.
- c) Explain with sketches water supply scheme in a high rise building for fire fighting purposes.

Q4) Short notes (with sketches wherever necessary) (any four) : **[4 × 5 = 20]**

- a) Defects of sound.
- b) Masking effect of sound.
- c) Cutting off air-borne noise.
- d) Fire escape staircase.
- e) Fire Alarm system.
- f) Fire proof door.



Total No. of Questions : 8]

P608

SEAT No. :

[Total No. of Pages : 4

[4167] - 35

T.Y. B.Arch.

**QUANTITY SURVEYING AND SPECIFICATION WRITING
(Yearly 2003 Pattern) (Theory)**

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) *Figures to the right indicate full marks.*
- 4) *Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator & steam tables is allowed.*
- 5) *Assume suitable data, if necessary.*
- 6) *All questions are compulsory.*

SECTION - I

- Q1) a)** Work out the quantities of the following items of work, based on the details given in the accompanying diagram (Fig. 1) Any Five **[25]**
- i) R.C.C. M20 column footings.
 - ii) B.B.Masonry (1:6) 230 thick in Ground Floor (only).
 - iii) Niroo plaster to walls (Bed only), inside jambs for D/W 50mm.
 - iv) Ceramic tile dado (2.10m Height) to bath only.
 - v) 100 dia C.I. Nahani Traps.
 - vi) M20 roof slabs for G.Floor.
 - vii) M.S. fully glazed windows to G.Floor (only).
 - viii) 100 mm Polish Kota Skirtings to Living (only).
- b) State the unit of measurement (as per IS 1200) for the following items of work. **[5]**
- i) Struct. steel in M.S. Trusses.
 - ii) C.C.T.W. Door frames.

P.T.O.

- iii) B.B.M. (1:5) 150 thick.
- iv) Sintex O.H.T.
- v) 200 ϕ Hume pipes.
- vi) Plinth Filling.
- vii) P/F rolling shutters.
- viii) P/f 12 dia bib cocks.
- ix) Brick bat coba water proofing to terraces.
- x) P/C 900 \times 450 Inspection chambers.

Q2) Based on Material & Labour rates stated below, Analyse & Work out UNIT RATE for the following items of work (any one) : **[10]**

- a) P/L P.C.C. (1:3:6) Floor P.C.C.
- b) P/C B.B. Masonry in C.M.(1:6) 350 thick
(Materials - Aggregates - 700/CUM, Sand - 1400/CUM, Cement - Rs. 320/bag, Bricks - Rs. 5.50/each).

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

- a) Schedule of Quantities.
- b) Characteristics of Approximate estimates.
- c) Uses of detailed estimate.
- d) Unit Rate.

Q4) Describe the items of work, as described in Bill of Quantities for the following items of work (any two) : **[10]**

- a) B.B. Masonry (1:4) 110 mm thick.
- b) P/F 20mm dia. G.I. Pipes, concealed.
- c) Excavation in soil & S.M. (0-1.5m).
- d) P/F M.S./Tor Steel Reinforcement.

SECTION - II

Q5) Explain various types of specifications & their purposes by giving examples. **[10]**

Q6) Write detailed specification for the following materials (any two) : **[10]**

- a) Coarse Aggregate for Concrete.
- b) T.W. for window frames.
- c) Polished Shahabad stone for Flooring.
- d) Cement.

Q7) Write detailed specification for the following works (any two) : **[10]**

- a) Inspection Chamber.
- b) P.C.C. for footing.
- c) R.C.C. work for columns (concrete only).
- d) Ceramic tile dado for toilet.

Q8) Specify following materials by trade / manufacturer's name. (any ten) **[10]**

- a) Stainless steel kitchen sink.
- b) Electric switches.
- c) Diesel generator.
- d) Cement paint.
- e) Lift.
- f) Air conditioner.
- g) PVC water storage tank.
- h) Vitrified tiles.
- i) Cement 53 grade.
- j) PVC drainage pipes.
- k) European drainage pipes.
- l) Electric cables.
- m) Ceiling fans.

D₁: 1000 X 2100 W₄: 900 X 900 Ⓞ ALL FOOTINGS - 1200 X 1200
 D₂: 900 X 2100 W₅: 400 X 1200 D = 600, d = 200
 D₃: 800 X 2100 W₆: 700 X 700 Ⓞ ALL PLINTH BMS : 230 X 450
 W₁: 2600 X 1200 O₁ : 1050 X 2100 Ⓞ ALL COLUMNS : 230 X 460
 W₂: 1500 X 1200 O₂ : 1000 X 2100 Ⓞ FLOOR TO FLOOR HT : 3200
 W₃: 1500 X 900 O₃ : 1300 X 2100 Ⓞ ALL LINTOLS : 230 X 230
 Ⓞ ALL SKIRTINGS 100MM HT Ⓞ ALL FLOOR SLABS : 140 TK
 Ⓞ ALL WALLS 230 TH. EXCEPT SHOWN.

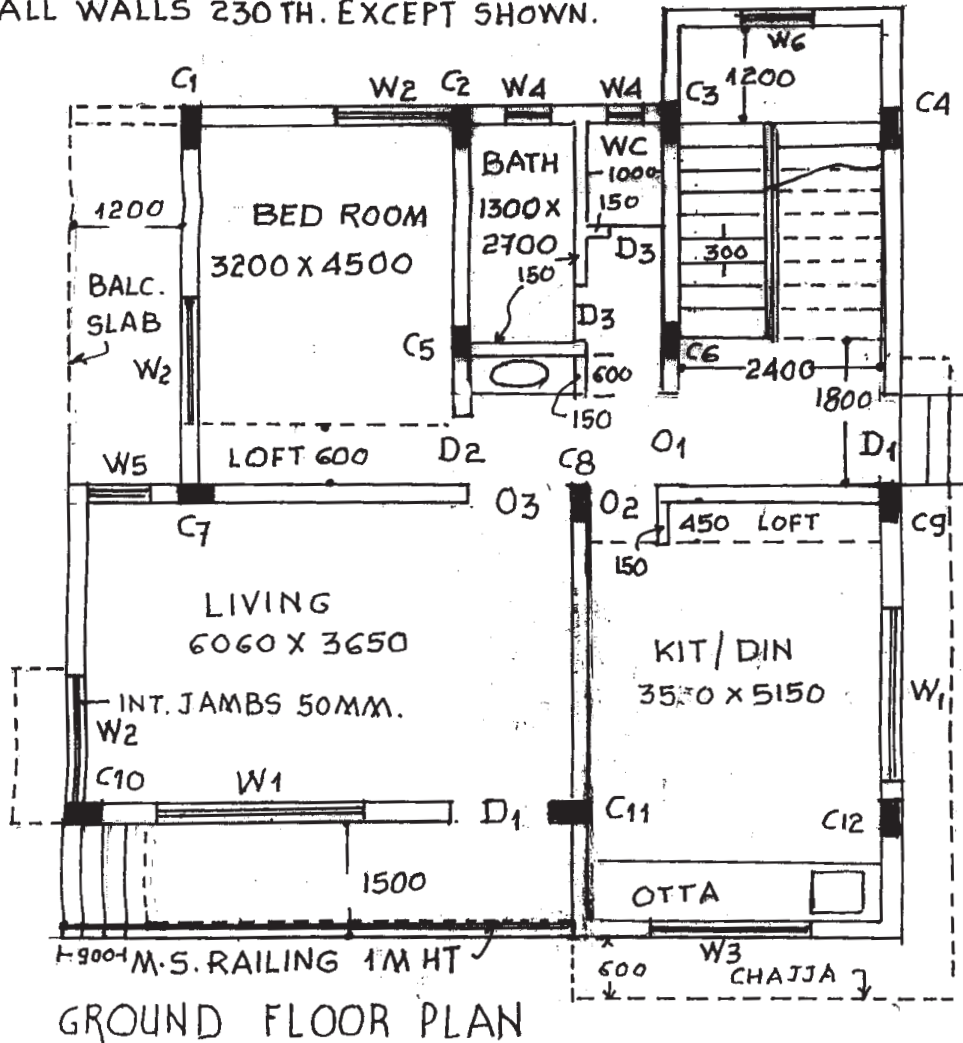


FIG-1



Total No. of Questions : 4]

P609

SEAT No. :

[Total No. of Pages : 2

[4167] - 42

Fourth Year B.Arch.

**BUILDING CONSTRUCTION AND MATERIALS - IV
(Yearly 2003 Pattern)**

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 swimming of size 25 M × 12 M is to be constructed in a housing colony near club house. Draw plan and section to a scale of 1:100 & constructional details with necessary services to a scale of 1:20. Draw a schematic sketch of working of swimming pool. **[30]**

Q2) A two level basement parking is to be proposed for a commercial building of size 30M × 20M with proper column grid, and ramps. Draw plan and section to a suitable scale showing parking details, lighting, ventilation, water proofing & rain water disposal. **[30]**

Q3) An industrial shed is to be constructed in for a company in Talegaon. The overall size of the shed to be constructed is 20M wide × 30M long. The truss tie level is 6.50 M from finished floor level. The columns are R.C.C. columns with steel truss & pre coated sheets for roofing and cladding. Draw framing plan and section to the scale of 1:50 and enlarged details to a suitable scale showing provision for light, ventilation, rain water disposal & roof details. **[30]**

P.T.O.

SECTION - II

Q4) Write short notes with neat sketches on any five of the following : **[40]**

- a) Constructional details of expansion joint.
- b) Space frames & Shell roofs.
- c) Construction details of curtain walls and structural glazing.
- d) Raking and flying shores.
- e) Any two structural systems used in high rise building.
- f) Methodologies for seismic retrofitting.
- g) False ceiling detail for interior of an office.
- h) Heat and sound insulating materials (any two).



Total No. of Questions : 7]

P610

SEAT No. :

[Total No. of Pages : 4

[4167] - 51
Fifth Year B.Arch.
PROFESSIONAL PRACTICE
(Yearly 2003 Pattern)

Time : 3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) Answer any three questions from section - I and any two questions from section - II.*
- 2) Answers to the two sections should be written in separate answer books.*
- 3) Figures to the right indicate full marks.*
- 4) Your answers will be valued as a whole.*

SECTION - I

Q1) Solve any two of the following :

[20]

- a) Explain the working of Architect's office from locating the client to the completion of the project and suggest a suitable Organizational Chart for efficient working of the office.
- b) Write short notes on any two of the following :
 - i) Indian Institute of Architects.
 - ii) Mandatory and Non-mandatory Registrations.
 - iii) Council of Architecture.
- c) Write short notes on any two of the following :
 - i) Ethics in Architectural Profession.
 - ii) Procedure laid down by Council of Architecture towards Architect's appointment and structure of fees payable by the client.
 - iii) Types of Company Formation.

P.T.O.

- Q2)** a) Differentiate among trade, business and profession. [5]
- b) Write short notes on any five of the following : [15]
- i) Role of Architect in Arbitration.
 - ii) Sole Arbitrator.
 - iii) Award.
 - iv) Articles of Agreement.
 - v) Natural Rights
 - vi) Dilapidations.
 - vii) Environmental Protection Act.
- Q3)** a) Differentiate among cost, price and value. State the characteristic of Market Value. [8]
- b) Explain any four of the following : [12]
- i) Board of Accessors.
 - ii) Sentimental value.
 - iii) Book Value.
 - iv) Easement Rights.
 - v) Umpire.
 - vi) Tenure
- Q4)** Write Short notes on any four of the following : [20]
- a) Registrations and Taxation for Architects.
 - b) Natural Rights.
 - c) Architect as an Executive and Manager.
 - d) Ways and Means of Securing and Servicing Clientage.
 - e) Working Drawings.
 - f) Role of Contractor in a Construction Project.

SECTION - II

Q5) Solve any two of the following : **[20]**

- a) Discuss the characteristic of Tender Notice and Explain the procedure you would adapt towards the selection of the contractor.
- b) Write short notes on any two of the following :
 - i) Validity of Tender.
 - ii) Mobilization Advance.
 - iii) Certification of Contractor's Bills.
- c) Differentiate between any four of the following :
 - i) EMD (Earnest Money Deposit) and SD (Security Deposit).
 - ii) Latent Defects and Patent Defects.
 - iii) Item Rate Tender and Lump Sum Tender.
 - iv) Clerk of Works and Contractor's Site Engineer.
 - v) Disputes and Arbitration.
 - vi) Contractor and Subcontractor.

Q6) Write your actions on any five of the following as the Architect with reference to Articles of Agreement. **[20]**

- a) Although lowest the Architect's office found that certain items were missed out or not quoted by the contractor in the tender.
- b) The EMD cheque given by the tenderer is not honoured by his banker.
- c) Contractor does not respond to Architect's notice for rectifying defects during defect liability period.
- d) Owner meets with an accident on site.
- e) General contractor does not co-operate with the Nominated subcontractor.
- f) A Faculty Member of an architecture college is also practicing as a Professional Architect.
- g) Contractor becomes bankrupt.
- h) Architect notices defects in construction after actual completion of work.

- Q7) a) Distinguish between any four of the following : [8]**
- i) Interim and Final Certificate.
 - ii) Leasehold and Freehold tenure.
 - iii) Variation and Extra Item.
 - iv) Actual and Virtual Completion.
 - v) Tender and Agreement.
 - vi) Defects Liability Period and Liquidated Damages.
- b) Write short notes on any four of the following : [12]**
- i) Role of Architect in Contract.
 - ii) Clerk of Works.
 - iii) Letter of Intent.
 - iv) Lump sum Tender.
 - v) Bill of Quantities.
 - vi) Quality Control on Project Site.



Total No. of Questions : 5]

P611

SEAT No. :

[Total No. of Pages : 2

[4167] - 301

T.Y. B.Arch.

Building Technology and Materials - III

(2008 Pattern)

Time : 3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) *Use drawing sheets for section - I and answer book for section - II.*
- 2) *Neat drawings must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Question no. 3 is compulsory. Solve any one question out of remaining two questions in section - I. Both the questions in section - II are compulsory.*
- 5) *Assume suitable data wherever necessary and mention it in your answer.*

SECTION - I

- Q1)** a) Draw plan and section showing reinforcement details of doglegged (half flight) staircase of Flight width 1.2m and floor height of 3.0m to the scale of 1:20. **[15]**
- b) Draw railing fixing details and tile fixing details for finishing of tread and riser to a suitable scale. **[5]**
- c) Explain through part plan and section of the half flight staircase to a scale of 1:20, the necessary details to match the soffit, the nosing, or both soffit and nosing of two flights at Landing level. Draw all the three possibilities. **[10]**
- Q2)** a) Draw plan and section to the scale of 1:10 of T.W. Dining table of a suitable size to seat six persons. **[15]**
- b) Draw joinery details at the scale of 1:2. **[10]**
- c) Provide material specification and finishes details at suitable scale. **[5]**

P.T.O.

- Q3)** Explain the following with neat sketches (any three) : **[30]**
- a) Hydraulic Lift.
 - b) Friction piles and pile cap.
 - c) Methods of Basement Waterproofing.
 - d) Any two roofing systems developed by CBRI.
 - e) False Ceiling System.

SECTION - II

- Q4)** Write Short Notes with neat sketches (any four) : **[24]**
- a) Straight Sliding doors.
 - b) Terminology and Different types of Retaining Walls.
 - c) Reinforced Brick pier.
 - d) Types of R.C.C. Balcony
 - e) Ridge and eaves/gutter fixing details for steel truss with G.I or AC sheeting.
 - f) Raft foundation.

- Q5)** Write Short Notes with neat sketches (any four) : **[16]**
- a) Methods and materials of polishing of wood.
 - b) Setting out structures.
 - c) Guniting and its uses.
 - d) Paints and method of painting.
 - e) Ready mix concrete.
 - f) Stainless steel and its application in buildings.



Total No. of Questions : 8]

P612

SEAT No. :

[Total No. of Pages : 4

[4167] - 302
T.Y. B.Arch.
THEORY OF STRUCTURES - III
(2008 Pattern)

Time : 3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) Answer any 3 questions from each section.*
- 2) Answer should be written in separate answer books.*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Figures to the right indicate full marks.*
- 5) Use of non programmable calculators and steel tables allowed.*
- 6) Assume suitable data if necessary.*
- 7) Use Fe415 steel and M20 grade concrete.*

SECTION - I

Q1) Write short notes on any 3. Please draw sketches wherever needed. **[16]**

- a) Under what soil conditions are piles provided? What are the different kinds of piles? Explain their structural action.
- b) What is S.B.C? Give values of S.B.C for different kinds of soil. How are these values related to designing foundations in them?
- c) Discuss Cantilever R.C.C Retaining Walls and Structural Detailing For Same. Explain Importance of shear key.
- d) List the different kinds of structural support systems for staircases and draw neat sketches to explain the reinforcement detailing in any two.
- e) Stresses in the walls and slabs of Rectangular and Circular Water tanks. Sketch steel placement in any one.

P.T.O.

Q2) A Col of size 350×400 (horizontal \times vertical) carries a load of 700 Kn and is to be given a foundation in a soil of S.B.C 160 Kn/m^2 .

- a) Design the size of the isolated footing i.e the length and width of footing. Draw a sketch of the footing in plan. [4]
- b) Design the depth for max B.M. [4]
- c) Draw a sketch of steel that is provided in an isolated footing (no calculations reqd). [3]
- d) If the same column is placed alongside another column of size 450×450 carrying a load of 850 Kn at a centre to centre distance of 3.5 m between the two columns, Design the size of the combined footing. Draw a sketch of the same in plan only. No steel detailing required.[6]

Q3) Design a R.C.C doglegged staircase for an office building for the following data :

- a) Width of the flight - 1200 mm.
- b) Floor to floor height - 3200mm
- c) Tread - 275 Riser - 160
- d) The staircase is supported on 230 mm wide beams on outer edges of landings.
 - i) Calculate the load and Design the depth of the waist slab for max loading. [8]
 - ii) Design the main steel and distribution steel and prepare table for same. [5]
 - iii) Draw a sketch of the reinforcement details. [4]

Q4) a) Check the stability of the R.C.C retaining wall for overturning and sliding. [11]

Retained earth is on the vertical face of the stem.

Density of retained earth 16 Kn/m^3

Angle of repose - 25°

Coefficient of friction - 0.5

S.B.C of soil - 300 Kn/m^2

Top Width of stem - 450 mm

Bottom width of stem - 900 mm

Height of stem - 5200 mm

Width of base - 2500 mm

Toe Projection - 900 mm

Depth of Base - 600 mm

- b) Find intensity of pressure at base both max and minimum. Draw sketch of same. [6]

OR

Design the stem reinforcement and draw a sketch of the same.

SECTION - II

- Q5) a) Fe 415 steel and M20 grade concrete are to be used in constructing a beam 230 wide and 5.5 m span carrying a load of 25 Kn/m over its span inclusive of its self wt. Calculate depth and steel reqd from working stress method, Ultimate load method and limit state method and compare the results. [7]

OR

Explain the essential differences between working stress method and Ultimate load method. Explain using the stress diagrams.

- b) A prestressed concrete beam of overall size 300×600 is simply supported over a span of 7 m. The beam carries an udl of 20 Kn/m inclusive of the self weight and a central point load of central 50 Kn. The prestressing tendons are located at a distance of 100 mm from the neutral axis and provide a prestressing force of 1200 Kn. Calculate the extreme fibre stresses at mid span. [10]

- Q6) a)** Design a purlin factory for the following data : **[8]**
- i) Span of the truss - 16m
 - ii) Spacing of the trusses - 4.5m
 - iii) Slope of roof - 30°
 - iv) Spacing of purlins - 2.4 m
 - v) Roofing is of G.I Sheets.
- Use angle section.
- b)** Write short notes on any two of the following : **[9]**
- i) Ductility detailing for earthquake resistant buildings.
 - ii) Gantry Girders with neat sketches.
 - iii) Conventional R.C.C construction against Prestressed Techniques.

Q7) A compound stanchion of a factory building consists of 2 no ISMC 350 placed back to back. Calculate the spacing between the two sections so that they take maximum load. What load will such a column carry for a height of 6m with both ends fixed, Design a suitable lacing or battening system for the same compound column. Sketches reqd. Detail calculations for lacing or battening not reqd. **[17]**

- Q8)** Write short notes on any three : **[16]**
- a) Intze water tank with structural detailing.
 - b) Two methods for providing prestressing.
 - c) Different kinds of foundations in Buildings with respect to structural requirements.
 - d) What are trial pits? What is bulb of pressure?
 - e) Explain Castellated girders. Need and Situations in which to be used.



Total No. of Questions : 4]

P613

SEAT No. :

[Total No. of Pages : 2

[4167] - 303
T.Y. B.Arch.
Building Services - I
(2008 Pattern)

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) Figures to the right indicate full marks.*
- 4) All questions are compulsory.*

SECTION - I

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

- a) What are the types of fans used in Mechanical ventilation system?
Describe with sketches.
- b) What are the different types of filters used in Air-conditioning system?
Describe with sketches.
- c) What is “Refrigeration cycle”? How it is used in Air-conditioning?
Explain different components of RAC (refrigeration & Air-Conditioning) with appropriate sketches.

Q2) Short notes (with sketches wherever necessary) (any four) : **[4 × 5 = 20]**

- a) Stack effect.
- b) Air handling unit.
- c) Plenum system of ventilation.
- d) Air-cooled condenser.
- e) Cooling tower.
- f) A.C. Ducting system.

P.T.O.

SECTION - II

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

- a) Explain with sketches various methods of controlling the structure borne noise in construction of walls and floors.
- b) State Sabine's Formula for finding reverberation time. Discuss about various types of acoustical materials used for sound insulation in a building.
- c) Explain with sketches water supply scheme in a high rise building for fire fighting purposes.

Q4) Short notes (with sketches wherever necessary) (any four) : **[4 × 5 = 20]**

- a) Defects of sound.
- b) Decibel.
- c) Cutting off air-borne noise.
- d) Fire escape staircase.
- e) Smoke detectors.
- f) Fire proof door.



Total No. of Questions : 5]

P614

SEAT No. :

[Total No. of Pages : 4

[4167] - 304

T.Y. B.Arch.

**QUANTITY SURVEYING AND ESTIMATING
(2008 Pattern) (Theory)**

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) *Figures to the right indicate full marks.*
- 4) *Use of logarithmic tables, slide rules, Mollier charts, electronic pocket calculator & steam tables is allowed.*
- 5) *Assume suitable data, if necessary.*
- 6) *All questions are compulsory.*

SECTION - I

- Q1) a)** Work out the quantities for the following items of work, based on details given in the accompanying diagram (Fig. 1) Any eight **[40]**
- i) Excavation in soil & S.M. (Footings only).
 - ii) M20 Column Footings.
 - iii) M20 Columns (In G.Floor only).
 - iv) B.B.Masonry (1:6) 230 thick for G.Floor (only).
 - v) C.C.T.W. door frames (125 × 65)-doors D₁, D₂.
 - vi) M20 Floor Beams at 1st Slab Level.
 - vii) Aluminium windows & ventilators.
 - viii) Dado in W.C's (only) - Ht of dado 2.10m.
 - ix) Polish Kota treads for entrance & stair.
 - x) B.B.M. (1:6) in entrance steps.
 - xi) Niroo plaster to walls (Hall only).
 - xii) Nahani Traps.

P.T.O.

- b) State the unit of measurement for the following items of work as per IS 1200. [10]
- i) Plinth filling.
 - ii) P/F M.S./Tor reinforcement.
 - iii) B.B.M. (1:4) half brick thick.
 - iv) Mangalore tiles on battens.
 - v) Sintex O.H. tank.
 - vi) Inspection chambers (900 × 450).
 - vii) 200 dia. hume pipes.
 - viii) Malaminic polish to doors.
 - ix) 100mm Ht. Ceramic Tile Skirting.
 - x) Sunk cement pointing (1:3).

SECTION - II

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

- a) Characteristics of Approximate Estimates.
- b) Overheads.
- c) Interim Bill Certification.
- d) Schedule of quantities.

Q3) Based on the material and Labour rates stated below, analyse & work out the “UNIT-RATES” for the following items of work (any two) : [14]

- a) P.C.C. (1:3:6) for floor sub-base.
- b) B.B.Masonry (1:5) 150mm thick.
- c) Vitreous Tile Flooring on 30mm C.M.(1:6) bedding.
- d) U.C.R. in C.M.(1:6) for foundation.

Aggregate - Rs. 700/CUM, Sand - Rs. 1500/CUM, OPC - Rs. 320/Bag,
Bricks - Rs. 8/each, Vitreous tiles - Rs. 900/SQM, Rubble - Rs. 530/CUM.

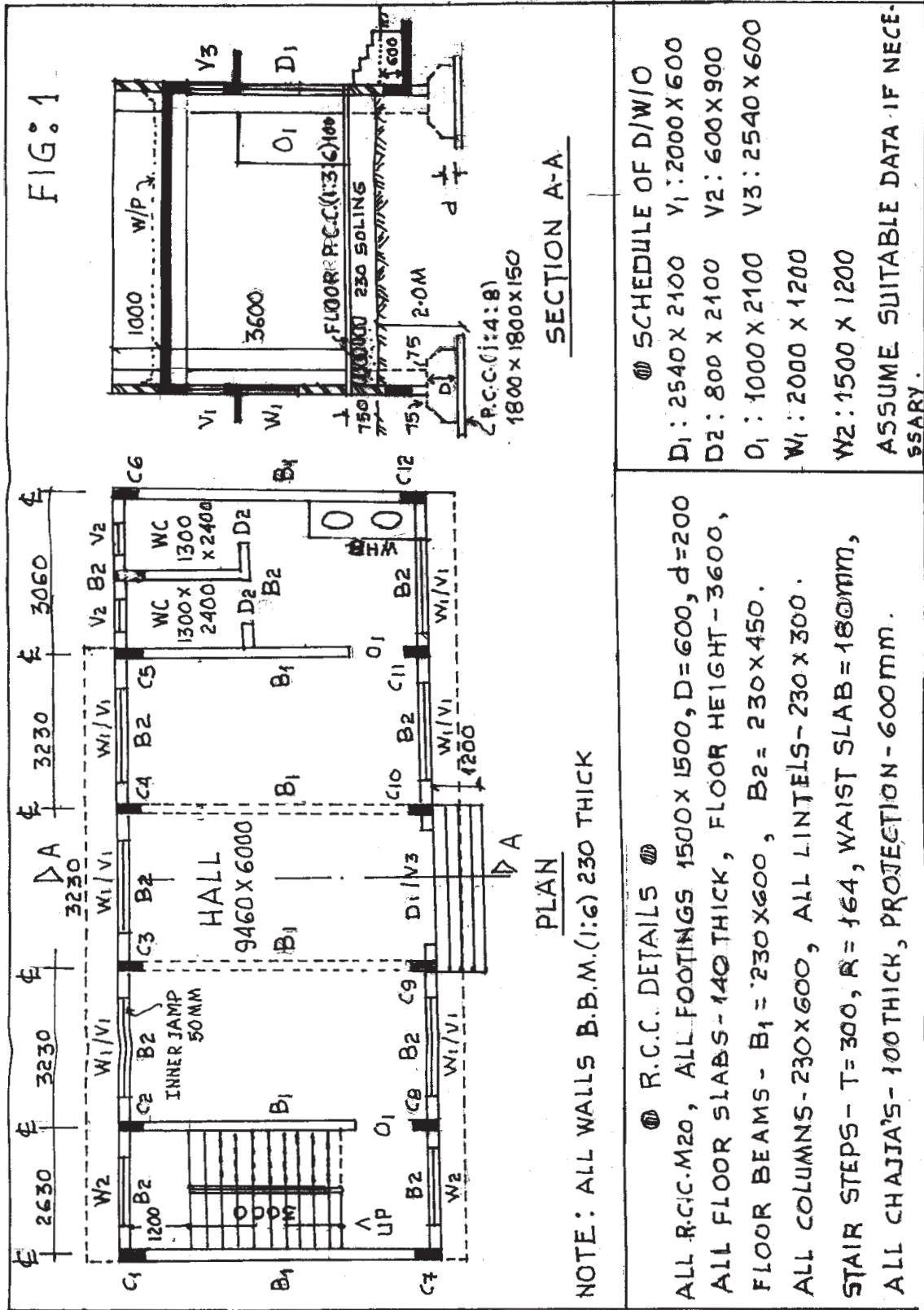
Labour :- a) Rs. 430/CUM b) Rs. 120/SQM
 c) Rs. 220/SQM d) Rs. 450/CUM.

Q4) Describe the items (any two) as described in Bill of quantities for the following items of work stating inclusions, exclusions, unit of measurement. **[12]**

- a) P/F 25 dia. G.I. Tubings.
- b) Excavation in H.M. (0-1.5m).
- c) P/F Polish Kota Treads.
- d) P/F Wash Hand Basin.

Q5) Indent the materials for the following work (any two) : **[12]**

- a) R.C.C. (1 : 1½ : 3) slab & beams - 36 CUM.
- b) B.B.Masonry in C.M. (1:6) 350 thick - 60 CUM.
- c) Sand Faced Plaster (1:4), 25mm thick - 150 SQM.
- d) No. of ceramic tiles (200 × 300) for dado - 28 SQM.



P615

SEAT No. :

[Total No. of Pages : 3

[4167] - 401
Fourth Year B.Arch.
ARCHITECTURAL DESIGN - IV
(2008 Pattern) (onwards)

Time : 18 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) Your answer will be valued as a whole.*
- 2) Assume suitable data wherever necessary.*
- 3) Single line sketch plans of the entire scheme with the site to the required scale shall be submitted by the candidates at the end of first day. These drawings shall not be returned the candidates, therefore due record of the same should be kept for subsequent days. The candidate will not make any considerable departure from the sketch submitted on the first day.*
- 4) The drawings should be self-explanatory.*

**INSTITUTE OF ENVIRONMENTAL STUDIES AND RESEARCH AT
BANGALORE**

NGO working in the area of environment proposes to start INSTITUTE OF ENVIRONMENTAL STUDIES AND RESEARCH AT BANGALORE to promote research activities along with formal postgraduate studies. The site is located off Mysore road and measures 100m by 60m abutting 12m wide road on the South (as shown in FIG 1). You are required to give a sensitive design solution for the same for following requirements.

Space Requirements

Carpet area in Sq. mts.

ADMINISTRATION

- | | |
|--|-------------|
| 1. Entrance lobby with waiting and reception | 100 |
| 2. Administrative office for 2 staff | 30 |
| 3. Director's cabin with attached toilet | 30 |
| 4. Meeting room with pantry | 40 |
| 5. Staff room with 4 cabins | 40 |
| 6. Research and publication cell | 40 |
| 7. Store and Xerox facilities | 20 |
| 8. Toilets for both sex | As required |

P.T.O.

ACADEMICS

1. Lecture halls 4no for 30 students	40 each
2. Laboratory 2 no. (botany-zoology, environment)	80 each
3. Computer lab for 30 PCS	60
4. Audio-visual room for 40 students	60
5. Library with issue counter, reading and stack	180
6. Toilet facility for both the sex	As required

Public Areas

1. Auditorium for 150 capacity with green room	300
2. Exhibition and display	120
3. Cafeteria with Kitchen and indoor seating for 30	60

Outdoor areas

1. Amphitheatre for 150
2. Botanical Garden
3. Nature trail
4. Parking
 - 10 four-wheelers
 - 60 two-wheelers
 - 1 mini bus

NOTES :

- Toilet number and areas are to be provided adequately.
- Circulation and allied areas should not exceed 40% of carpet area.
- Height of the building not to exceed 15m.
- Ground coverage not to exceed 33% of plot area.
- Set back 6 m from all sides.
- Services like UG water tank, A/C plant if any, transformer, septic tank, etc to be indicated on site at appropriate locations.
- Landscape details to include outdoor interactive areas, botanical garden and nature trail.

DRAWING REQUIREMENTS :

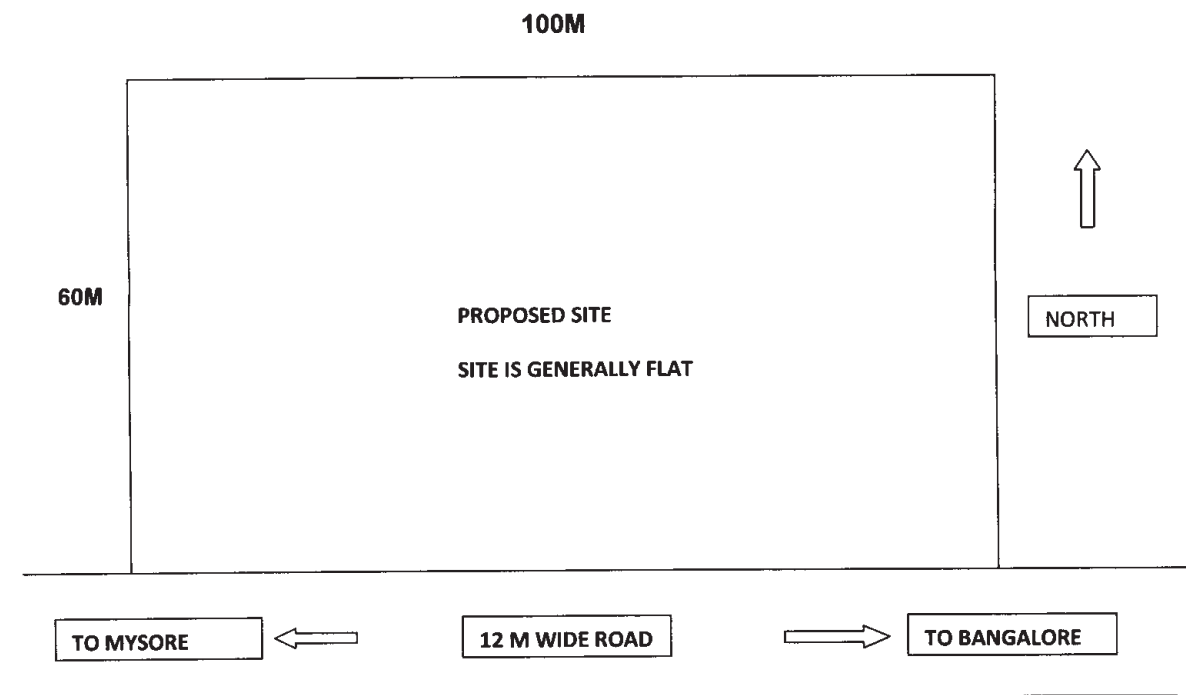
First Day

1. Site plan with building blocks showing zoning 1:200
2. Single line floor plans and section (at least one) 1:200

Final Day

1. Site plan with access, roads, parking, roof plan of building, landscaped areas and services 1:200
2. All double line floor plans showing furniture layout 1:100
3. Sections (min two) 1:100
4. Elevations (min two) 1:100
5. View (perspective or isometric)

FIG 1



Total No. of Questions : 10]

P616

SEAT No. :

[Total No. of Pages : 2

[4167] - 402
Fourth Year B.Arch.
TOWN PLANNING
(2008 Course)

Time : 3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) *Question 1 and Question 6 are compulsory.*
- 2) *Answer ANY THREE questions from EACH SECTION from the remaining.*
- 3) *Answers to the TWO SECTIONS should be written in separate books.*
- 4) *Draw neat diagrams or sketches wherever necessary.*
- 5) *Assume suitable data if required.*

SECTION - I

- Q1)* Explain the terms row houses, twin bungalows and detached bungalows with appropriate sketches. Describe the difference among these types, in detail. **[14]**
- Q2)* Explain the concept of Neighborhood by Clarence Perry and its characteristics. **[12]**
- Q3)* Write a detailed note on Garden City concept by Sir Ebenezer Howard. Explain the same with appropriate examples. **[12]**
- Q4)* Explain the importance and relevance of learning “Town Planning” for an Architect. Support your answer with appropriate cases and examples from the profession. **[12]**
- Q5)* Write a note on any one of the planned cities in India. **[12]**

P.T.O.

SECTION - II

- Q6)** Describe various types of surveys in town planning and explain importance of surveys in planning process. **[14]**
- Q7)** Describe the importance of DC (Development Control) Regulations in planning. **[12]**
- Q8)** Explain Local Self Government in urban and rural areas and write a note on 73rd and 74th Amendment of the constitution. **[12]**
- Q9)** Write a note on M.R. & T.P. Act and explain its importance. **[12]**
- Q10)** What is Urban Design? How does it differ from Urban Planning? **[12]**



P617

SEAT No. :

[Total No. of Pages : 3

[4167] - ID 41
Fourth Year B.Arch.
INTERIOR DESIGN - IV
(Old Pattern) (Onwards)

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 candidate shall not make any considerable 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.*

Abhisheki Kala Academy, Pune

Location Baner road.

Plot area-7800 sqm.

Pune municipality has proposed a new kala academy in Baner area for the benefit of people residing in Baner, Balewadi and Aundh area. The design Program.

A) Administration area...	300 sqm
Reception/waiting....	50
Office	50
Director	30
Meeting room	30
Seminar	100
Facility	50

P.T.O.

- B) **Academic block** **800 sqm**
 12 nos class rooms, each 50 sqm 4 each, for Dance, Drama and Music.
 Store 2 nos × 25 50 sqm
 Library 50 sqm
 Archives 50 sqm
- C) **Amphitheatre for dance/drama/music** **300 sqm**
 Capacity 150
 Provide stage, back stage and other suitable facilities.
- D) **Closed Auditorium** **400 sqm**
 Capacity 300
 Provide stage, back stage and other suitable facilities.
- E) **Guest House** **400 sqm**
 6 rooms of 30-35 sqm each
 Common entrance/lobby
 Lounge/living area
 Kitchen and dining
 Store and other facilities
- F) **Parking/security etc**
 For 50 cars and 2002 wheelers
 Main site plan should include all the blocks and zoning of all services
 along with landscape layout.

Drawing requirements

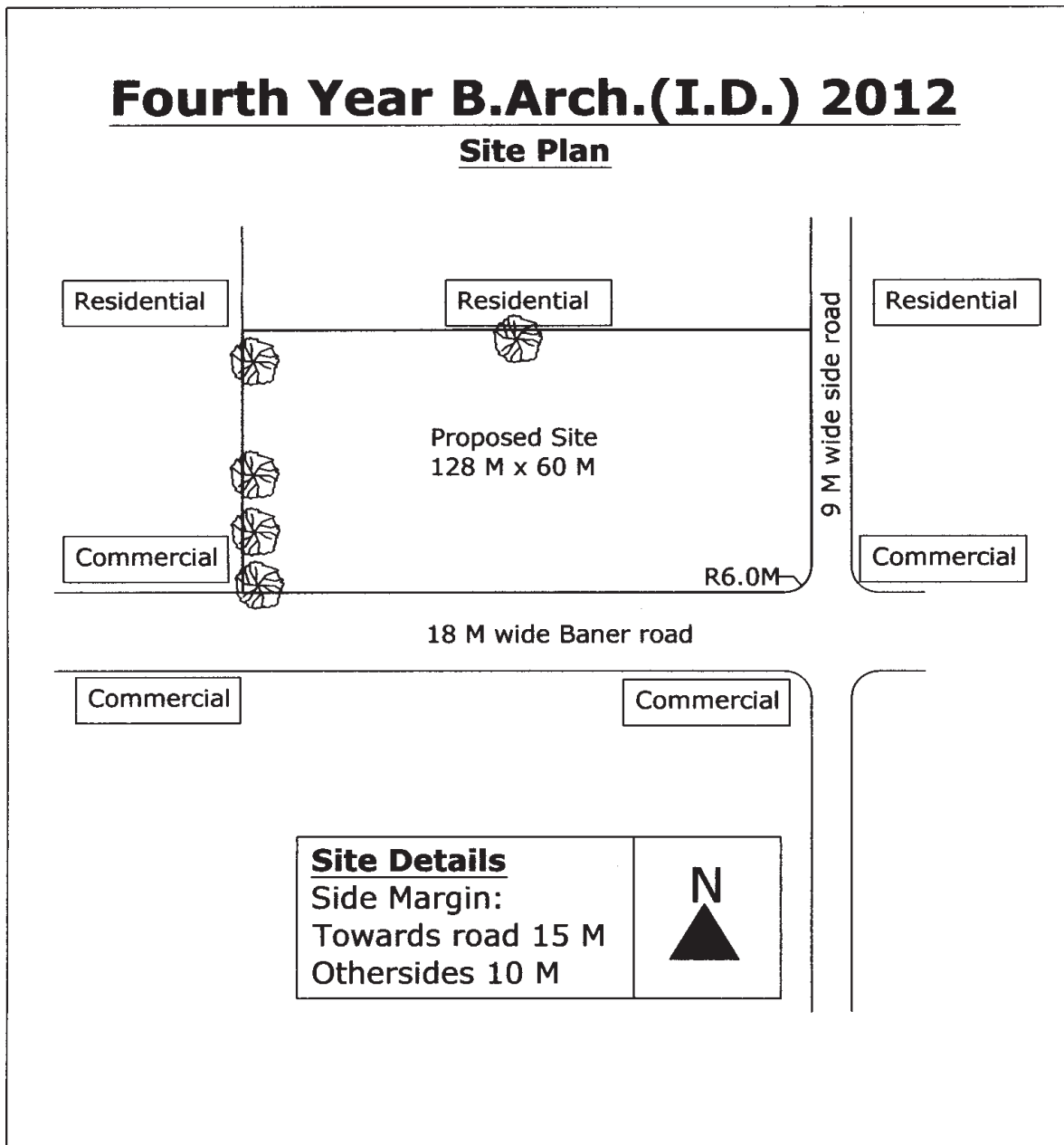
First day submission - 10 Marks

1. Concept of design
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**



Total No. of Questions : 5]

SEAT No. :

P618

[Total No. of Pages : 1

[4167] - ID 51
Fifth Year B.Arch. (Interior Design)
PROFESSIONAL PRACTICE - II
(Annual Pattern) (513482) (Old)

Time : 2 Hours]

[Max. Marks :50

Instructions to the candidates:

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

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

- a) Market Value.
- b) Cost, Price and Value.
- c) Sentimental Value.
- d) Sinking Fund.
- e) Servient Heritage.
- f) Natural Rights.
- g) Public Purpose (as defined in the Land Acquisition Act).

Q2) What are the various factors that can affect the Value of Land? **[10]**

Q3) What is the difference between Arbitration and other common methods of solving disputes? **[10]**

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

Q5) What are the different types of Easements? Explain with examples. **[10]**



Total No. of Questions : 10]

SEAT No. :

P630

[Total No. of Pages : 2

[4167] - 403
Fourth Year B.Arch.
PROFESSIONAL PRACTICE
(2008 Pattern) (Theory)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Question No.1 and 6 are compulsory. Out of the remaining attempt any 3 questions from section-I and 3 from section-II.*
- 2) Answer to the two sections should be written in separate books.*
- 3) Figures to right indicate full marks.*
- 4) Your answers will be valued as a whole.*

SECTION - I

Q1) Write short notes on (Any Four) : **[20]**

- a) Ways and means of securing and servicing clientage.
- b) Principal requirements and conditions for conducting an architectural competition.
- c) Professional Ethics.
- d) Appreciation and Depreciation of the property.
- e) Reimbursable expenses.
- f) Stages of payment of fees.

Q2) Comment upon the following (Any Two) : **[10]**

- a) Client is requesting you to take up an ongoing project without the consent of the architect already executing the project.
- b) You decide not to pay renewal fees of council of architecture.
- c) Client wants to know how you would process his project from inception to completion?
- d) Client asks you to prepare a draft of your appointment for his project stating all the details you wish to incorporate.

Q3) What is valuation? Enlist its purpose. Name various types of values. **[10]**

P.T.O.

- Q4)** Discuss the Architects Act & its provisions, scope relating to : [10]
a) Architectural education.
b) Architectural Profession.
c) Council of Architecture.

- Q5)** Explain various types of taxes that are applicable to architectural practice and discuss various tax saving options. [10]

SECTION - II

- Q6)** Write short notes on (Any Four) : [20]
a) Market value.
b) Easement Rights.
c) Dominant Heritage and Servient Heritage.
d) Defects liability period.
e) Opening and evaluation of tender.
f) Difference between itemrate contract and percentage rate contract.

- Q7)** Who is the clerk of works? Discuss the role of the clerk of works in an architectural project. [10]

- Q8)** What is a Tender? Enlist the essential components of a tender document. [10]

- Q9)** Explain Arbitration and its significance in sorting disputes. Discuss Award, Umpire, Quasi Judicial Arbitration and sole Arbitrator in this reference. [10]

- Q10)** What would your actions be and why? If
a) Building shows defects during DLP.
b) There is no response to the publication of tender notice. [10]



Total No. of Questions : 10]

SEAT No. :

P911

[Total No. of Pages : 2

[4167] - ID 42
Fourth Year B.Arch. (Interior Design)
CONSTRUCTION, SERVICES AND MATERIALS - IV
(Annual Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Write answers to each section in a separate answer book.*
- 2) Q.No. 1 from Section-I is compulsory. Solve any two of the remaining questions from Section-I.*
- 3) Q.No. 5 from Section-II and Q.No. 8 from Section-III are compulsory. Solve any one of the remaining questions from Section-II and 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) Industrial Shed in Pune with nominal size of 15.00 M × 30.00 M with a minimum internal height of 6.00 M. and covered with MS corrugated roofing Sheets. Details to be provided :
 - i) External walls with supporting columns and beams in R.C.C. or structural Steel.
 - ii) Roof structure with trusses, purlins and roofing sheets.
 - iii) Rainwater gutter and downtake pipes.

OR

- b) Swimming Pool in a Hotel premises of approx. 60.00 Sq.Mt. Area and a maximum depth of 1.20 mts., showing.
 - i) Overall Plan and Section showing structural system.
 - ii) Waterproofing system and materials for flooring and walls.
 - iii) Details of Inlet and Outlet of water and sketch details of Filtration Plant.

Q2) State in which way architectural forms of buildings can increase or decrease their resistance to earthquake forces. **[10]**

P.T.O.

Q3) State the architectural and construction detailing issues in the design of Auditorium seating. [10]

Q4) Give details of construction of a multi-level basement with respect to

a) Type of construction vis-à-vis soil type and water table.

b) Waterproofing treatment and

c) Provision of light and ventilation. [10]

SECTION - II

Q5) Write short notes on Any Three of the following : [15]

a) Adhesives.

b) External Façade Paints.

c) Materials for Curtain Walls.

d) Materials used for main frame of furniture.

e) Fire-resistant building materials.

Q6) Which materials are used for the main structural frame of the long span structures? Discuss suitability and limitations of each material. [10]

Q7) What materials are used for Temporary Structure? Discuss their properties and suitability. [10]

SECTION - III

Q8) Write short notes on Any Three of the following : [15]

a) Smart fire detection and control systems.

b) Bio-metric identification systems.

c) Automatic sprinklers.

d) Smart systems for Water Supply.

e) Smart systems for HVAC.

Q9) Describe the components and design issues of modular kitchen furniture. [10]

Q10) Describe intelligent systems for disaster-management in buildings. [10]

