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

P1385

[3667]-1182
S.Y. M.Arch. (Environmental Architecture)
ENVIRONMENTAL IMPACT ASSESSMENT
(New Syllabus) (713202) (Sem. - III) (Theory Paper)

Time : 2.5 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Supplement the answers with sketches/diagrams as necessary.***

SECTION - I

Q1) What are the different EIA Methodologies? List them and briefly describe each. Describe in detail the Leopold Matrix, provide a sketch showing its concept. What are the merits of the Leopold Matrix? **[20]**

Q2) Write short notes on the following (any two) : **[10 Marks Each]**

a) Need of an interdisciplinary team for EIA studies.
b) Screening and scoping for EIA.
c) Evaluation of alternatives in an EIA.
d) Stepped Matrices.

SECTION - II

Q3) Develop a Conceptual Framework for the Description of the Environmental Setting for the EIA study that you are undertaking. How will you list the environmental factors and select the relevant environmental factors for baseline study to become a part of the Description of Environmental Setting for your EIA studies? **[25]**

Q4) Write notes on the following (any two) : **[5 Marks Each]**

a) Environmental Indices and Indicators.
b) Stepwise conceptual framework for Prediction and Assessment of Impacts in EIA studies.
c) Legislative framework for EIA in India.
d) Mitigation Measures.

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Total No. of Questions : 3] **[Total No. of Pages : 1**

P1386

[3667]-1188
S.Y. M.Arch. (Landscape Architecture)
LANDSCAPE CONSERVATION
(2008 Course) (Sem. - III)

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

Instructions to the candidates:

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

SECTION - I

Q1) Explain the following (any two) : **[10 marks each]**

a) Mangrove.
b) Wetlands.
c) Biodiversity.
d) Sacred groves.

Q2) Write short notes on (any two) : **[10 marks each]**

a) Desertification-Causes and Mitigation techniques.
b) Conservation of Historic Landscapes.
c) Ecological sustainable landscape conservation.

SECTION - II

Q3) Explain on the following (any five) : **[7 marks each]**

a) Non-Renewable energy resources.
b) Carbon sink.
c) Kyoto Protocol.
d) Clean development mechanism.
e) Social forestry.
f) Aerial photography.

OR

a) Write a short note on causes and impact of climate change and explain the National action plan on climate change. **[20 marks]**

b) Explain environmental impact assessment and its framework. **[15 marks]**

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

P1387

[3667]-1196
M. Arch. (Computer Applications)
INTRODUCTION TO PROGRAMMING
(2008 Course) (713401 (CA 313))

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) What is programming language? Explain various types of programming languages? **[7]**

b) Differentiate between compiler and interpreter. **[6]**

Q2) a) What is software? Explain different categories of software. Give some examples of each category. **[6]**

b) What is the purpose of 'if statement' in C/C++ language. Take suitable example to explain. **[6]**

Q3) a) What is the need of information hiding? How it is achieved in C++? **[6]**

b) What is friend function & friend class? Explain with the help of examples. **[6]**

Q4) a) Write a C program code print first 100 odd numbers. **[6]**

b) What is a function? Also write the need of function prototype. **[6]**

Q5) a) Explain the visibility modes for different members of base class in derived classes with the help of examples. **[6]**

b) Explain the following features of Object Oriented Programming. Your explanations should include examples. **[6]**

i) Inheritance.
ii) Polymorphism.

P.T.O.

SECTION - II

Q6) a) Explain few important characteristics of Java language. **[6]**

b) JDK has various editions like J2SE, J2EE and J2ME. Explain their purpose. **[7]**

Q7) a) Explain the procedure for compilation and execution of a java program. Give some example. **[7]**

b) Explain the concept of class and objects of Java language. Also write the syntax of declaration of objects. **[6]**

Q8) a) What is Visual Basic Events? Give some examples. **[6]**

b) Explain the properties and event procedures for command button with example. **[6]**

Q9) Use 5 text boxes and 5 labels. Design a form and write a program in Visual Basic to accept item_code, item_name, quantity and rate. It should display total amount as quantity*rate. If invalid input is provided display message and accept correct input. **[12]**

Q10) Write short notes on any three : **[12]**

a) Message Box in VB.

b) Properties for Labels.

c) String functions.

d) Events related with Mouse.

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

P1388

[3667]-1124

M. Arch. (Landscape Architecture)

LA 312 - ENVIRONMENTAL LEGISLATION AND ECONOMICS (Old) (Semester - III)

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

Instructions to the candidates:

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

SECTION - I

Q1) Explain in detail the importance of Constitutional provisions in Environmental Protection. **[15]**

OR

Constitution of State Pollution Control Board and explain the provisions for entry and inspection.

Q2) Discuss the need for an umbrella legislation i.e. Environment (protection) Act. **[15]**

OR

Discuss the importance of Public Liability Insurance Act, 1991.

Q3) Write short notes (any Four) : **[5 marks each]**

a) Water Cess Act.

b) Public Interest Litigation and environmental rights.

c) Kyoto Protocol.

d) Directive Principles of State Policy.

e) 73rd and 74th Constitutional Amendment Acts and Local Self Governments.

f) Noise Pollution Rules, 2000.

P.T.O.

SECTION - II

Q4) Explain the importance of Bhure - Lal Committee in the protection of City Environment. **[15]**

OR

Explain the economic significance of plants, insects and animals.

Q5) United Nations Environment Programme has played an important role in the protection of environment. **[15]**

OR

Explain in detail the composition of Municipal Solid waste and the management approaches for the same.

Q6) Write short notes (any Four) **[5 marks each]**

a) Zoning is important for proper planning.

b) Landscape development and energy conservation.

c) Environmental Pollutants.

d) Outcome of Bali conference.

e) National Parks.

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

P1389

[3667]-1151
F.Y. M. Arch. (Architectural Conservation)
INTRODUCTION TO CONSERVATION
(2008 Pattern) (Theory) (Semester - I)

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

Instructions to the candidates:

1) ***Attempt any 4 questions from Section - I.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Q.No.7 is compulsory and answer any three questions from Q.No.8 to Q.No.11.***
4) ***Neat illustrative sketches to be a part of the answer scheme.***
5) ***Figures to the right indicate full marks.***

SECTION - I

Q1) What are the various 'Degrees of Intervention' in conservation? **[10]**

Q2) Trace the history of the movement of conservation in Europe. **[10]**

Q3) Explain the terms "Heritage and Conservation". Discuss in detail the relation between Heritage and Conservation. **[10]**

Q4) What are the problems associated with Historic Core? **[10]**

Q5) What are the steps associated with documentation of Historic Structures? **[10]**

Q6) Describe the terms Value, Significance, Authenticity with respect to Historic Structure. **[10]**

SECTION - II

Q7) Answer any one of the following : **[5]**

a) What is the role of UNESCO and WHC in the nomination of a WHS?

b) Describe the background for the Nara Document of authenticity.

P.T.O.

Q8) Describe any one World Heritage Site of your choice. **[10]**

Q9) Describe the key features of Burra Charter. **[10]**

Q10) Explain the term 'Adaptive Reuse'. Apply it to any site of your choice. **[10]**

Q11) Describe the procedure of the on-site conservation work related to a heritage structure of your choice. **[10]**

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

P1390

[3667] - 1152
F.Y.M. Arch. (Architectural Conservation)
PLANNING THEORY
(613102) (2008 Pattern)

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

Instructions to the candidates:

1) ***The section 1 and 2 have to be solved in separate booklets.***
2) ***Question 1 (Sec 1) and Q.5 (Sec 2) are compulsory.***
3) ***Solve any 2 questions from Q.No. 2 to 4 and 6 to 8.***

SECTION - I

Q1) Write Short Notes with neat sketches on any 4 of the following. **[20]**

a) Zoning Legislation.

b) Urban Arts Commission.

c) Goals & objectives of Planning.

d) Types of Town plans and their merits and demerits.

e) Social Structure or Profile of a Population and their respective problems.

Q2) Write a detailed note on the Maharashtra Regional and Town Planning Act. How is a Development Plan prepared under the provisions of the same? **[10]**

Q3) What are the interventions required in Conservation of Historic Housing in the core areas of a city? **[10]**

Q4) What are the various types of industries and what are the locational and other aspects to be considered in planning for industries in a town? **[10]**

P.T.O.

SECTION - II

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

a) Economic structure of a town and its prospects.

b) Right of Eminent Domain & its use by the government.

c) Urban morphology, relative merits and demerits of various urban forms.

d) Define the terms census, laaldora, random sampling.

Q6) Transportation planning for a town should not be looked at in disregard of conservation of heritage areas. Please explain. **[10]**

Q7) Explain the evolution of Environmental conservation thought in India. How is it related to the sustainable development issues? **[10]**

Q8) What is an Environment Impact Assessment report? What are the factors taken into account while making the same? **[10]**

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

P1391

[3667] - 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) ***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) Describe the properties of clay. Give the classification of clays with its uses. **[10]**

Q2) What are the different types of corrosion found in Cuprous metals. Elaborate on Bronze disease. **[10]**

Q3) Describe briefly the chemical cleaning process adopted to conserve ferrous metals. **[10]**

Q4) Classify the types of lime and list the properties of lime mortar. **[10]**

Q5) What are the factors responsible for deterioration of stone. Describe with suitable examples. **[10]**

Q6) Describe in detail the various factors responsible for deterioration of timber. **[10]**

SECTION - II

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

a) Unequal settlement of historic structures.

b) Structural cracks in historic structures.

P.T.O.

Q8) What are the factors leading to the failure of sloping roof using traditional materials. **[10]**

Q9) Describe the process of defect mapping used for historic structures. **[10]**

Q10) A historic structure in Basalt is to be conserved. Cleaning would be the first step in the process of conservation. What different types of cleaning methods would you employ for the structure. Describe any one in detail with specification. **[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 : 9] **[Total No. of Pages : 2**

P1392

[3667]-1154
M. Arch. (Environmental Architecture)
SOCIO-ECONOMIC ASPECTS OF PLANNING
(2008 Pattern)

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

Instructions to the candidates:

1) ***Solve any 4 questions from section I.***
2) ***Question 6 from section II is compulsory and solve any two from the rest.***
3) ***Answers to the two sections should be written in separate answer books.***
4) ***Draw neat diagram to answer the question wherever necessary.***

SECTION - I

Q1) The age – sex pyramid helps in deciding the mix of facilities required to be provided in each of the towns or neighbourhoods. Please comment. **[10]**

Q2) What are various types of industries? How does the type of each decide the location vis a vis the residential areas? **[10]**

Q3) What is Regional Economic Analysis? How is it useful for regional planning? **[10]**

Q4) Explain how urban land market works. What are the problems associated with urban land use? **[10]**

Q5) How infrastructure management plays important part in improving 'quality of life'? What are various ways of infrastructure management? **[10]**

SECTION - II

Q6) Write short notes on any 3 of following : **[15]**

a) Importance of community participation in planning.

b) Factors responsible for degradation of environment.

c) Multi-level planning in India.

d) Reasons and effects of migration on sending and receiving areas.

e) Environmental Status Report.

P.T.O.

Q7) Explain the concept of human ecology and its relevance with spatial analysis of internal structure of city. **[10]**

Q8) 'Globalization is affecting urban design and architecture'. Support the statement with illustrations. **[10]**

Q9) Explain Industrial Policy in India and its direct and indirect impact on Environment. **[10]**

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

P1393

[3667]-1155
First Year M.Arch. (Environmental Architecture)
EA - 102 : URBAN AND REGIONAL PLANNING

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

Instructions to the candidates:

1) ***Questions 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) How, why and where did the first urban settlements occur? What were the important "contents" of the earlier cities? How did these "contents" change over time and what remains of them? **[15]**

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

1.	Roman Planning	Proactive Planning
2.	Jane Jacobs	New Landscape
3.	Ian Mcgarh	The Death and Life of Great American Cities
4.	Charles Correa	Image of City
5.	Kevin Lynch	Design with Nature
6.	CDP	Planning as Social and Political Tool
7.	DP	Reactive Planning

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

a) Biaggio Rosseti.

b) Effects of Industrial Revolution.

c) Negative and Positive Aspects of Chandigarh and Gandhinagar.

d) Principle of City Beautiful Movement.

e) Various Levels of Planning in India.

SECTION - II

Q4) Why cities should be made beautiful? How it helps in city development? Is it expenditure or investment? Discuss important city beautiful movements in world? **[15]**

P.T.O.

OR

State about 'Urban Renewal' and its roots? State its relevance, validity and principles.

Q5) 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.

[15]

OR

State the rational of planning? Debate about following :

a) Proactive Planning vs. Reactive Planning.

b) Advisory Planning Approach vs. Legal Planning Approach.

Q6) Write short answers on <u>any two</u> : **[10]**

a) What is Jawaharlal Nehru Urban Renewal Mission in India?

b) What is City Development Plan? State the funding mechanism and process of making CDP?

c) Discuss current tools of implementation of Development Plan.

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

P1394

[3667] - 1156

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

HOUSING AND ENVIRONMENTAL PLANNING

(613203) (Theory Paper) (New Syllabus) (Sem. - I)

Time : 2.5 Hours] ***[Max. Marks :75***

SECTION - I

Q1) Write briefly (Any Two) : **[15 Marks Each]**

a) List the different Planning Theories. Write briefly about Rational Comprehensive Planning theory and express your opinion as to why this theory needs to change for the new concept of Sustainability in Planning.

b) What are the issues central to Sustainability Planning? Explain in detail the issue of Transportation. For the city of Pune, how can sustainability become a part of transportation planning?

c) What are Green Building Rating Systems? Write briefly about any ONE Rating system that is used in India. In what way do you feel, Green Buildings contribute towards Sustainability?

Q2) Write Short Notes on (Any Two) : **[5 Marks Each]**

a) Development Plan.

b) Sustainability Indicators.

c) ECO Housing Rating System.

d) Polluter Pays Principle.

SECTION - II

Q3) Write briefly (Any Two) : **[10 Marks Each]**

a) Express your opinion on the importance of Housing in the development of a city and explain the concepts of housing demand and supply.

b) Discuss Cooperative Housing system and its effect on the housing scenario in India.

P.T.O.

c) Describe the features of the Slum Rehabilitation Schemes under SRA and JNNURM.

Q4) Write Short Notes on (Any Three) : **[5 Marks Each]**

a) Characteristics of Housing.

b) HDFC.

c) CAPART.

d) HUDCO.

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

P1395

[3667]-1157
F.Y. M. Arch. (Landscape Architecture)
NATURAL SCIENCES - I
(Semester - I)

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

Instructions to the candidates:

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

SECTION - I

Q1) Explain the following (Any 4) : **[5 marks Each]**

a) Types of soils in various parts of Maharashtra.

b) Air Pollution.

c) Energy Matter and environment.

d) Evolution of earth.

e) Types of sedimentary rocks.

Q2) Write short notes (Any two) : **[10 marks Each]**

a) Explain various ways in which Ground water pollution occurs and its effect on plant material.

b) Explain the qualities of rocks and their formation.

c) Weathering of rocks and formation of soil.

d) Plate Tectonics and its influence on natural landscapes.

SECTION - II

Q3) Explain the following (Any 5) : **[7 marks Each]**

a) Solar radiation and its impact on planting.

b) Forest Biome.

P.T.O.

c) Soil – Plant relationship.

d) Global warming and its effect on natural systems.

e) Microclimatic control through landscape.

f) Ecosystem.

OR

a) What are the various types of systems for classification of plants? Write a brief note on it with respect to broad outline. **[20]**

b) Plant succession – definition and process. Explain the types of succession. **[15]**

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

P1396

[3667] - 1158
M. Arch. (Landscape Architecture)
LANDSCAPE TECHNOLOGY - I
(Sem. - I) (Credit System) (Syllabus-2008)

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

a) Grading for sports fields.

b) Rain water harvesting.

c) Manning's equation.

Q2) Explain the significance of grading in Landscape design. Also explain grading of terraces with suitable examples. **[10]**

Q3) Explain the types of storm water management systems and their applications in designing hardscapes and softscapes. Also explain the components of any one of them with suitable sketches. **[10]**

OR

Explain the relationship between type of surface and coefficient of run-off with examples of hard and soft surfaces.

Q4) Explain the method and layout of 1.2m wide pathway from point A to point B on a contoured site given in the attached drawing (the same could be drawn on the answer sheet). The pathway gradient should not be more than 4 %.**[10]**

P.T.O.

SECTION - II

Q5) A 20-acre drainage area consists of 2-acre parking area(C=0.9), 2 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]**

Q6) What are the methods of computing cut and fill volumes? Explain any one method with supportive sketches. **[10]**

OR

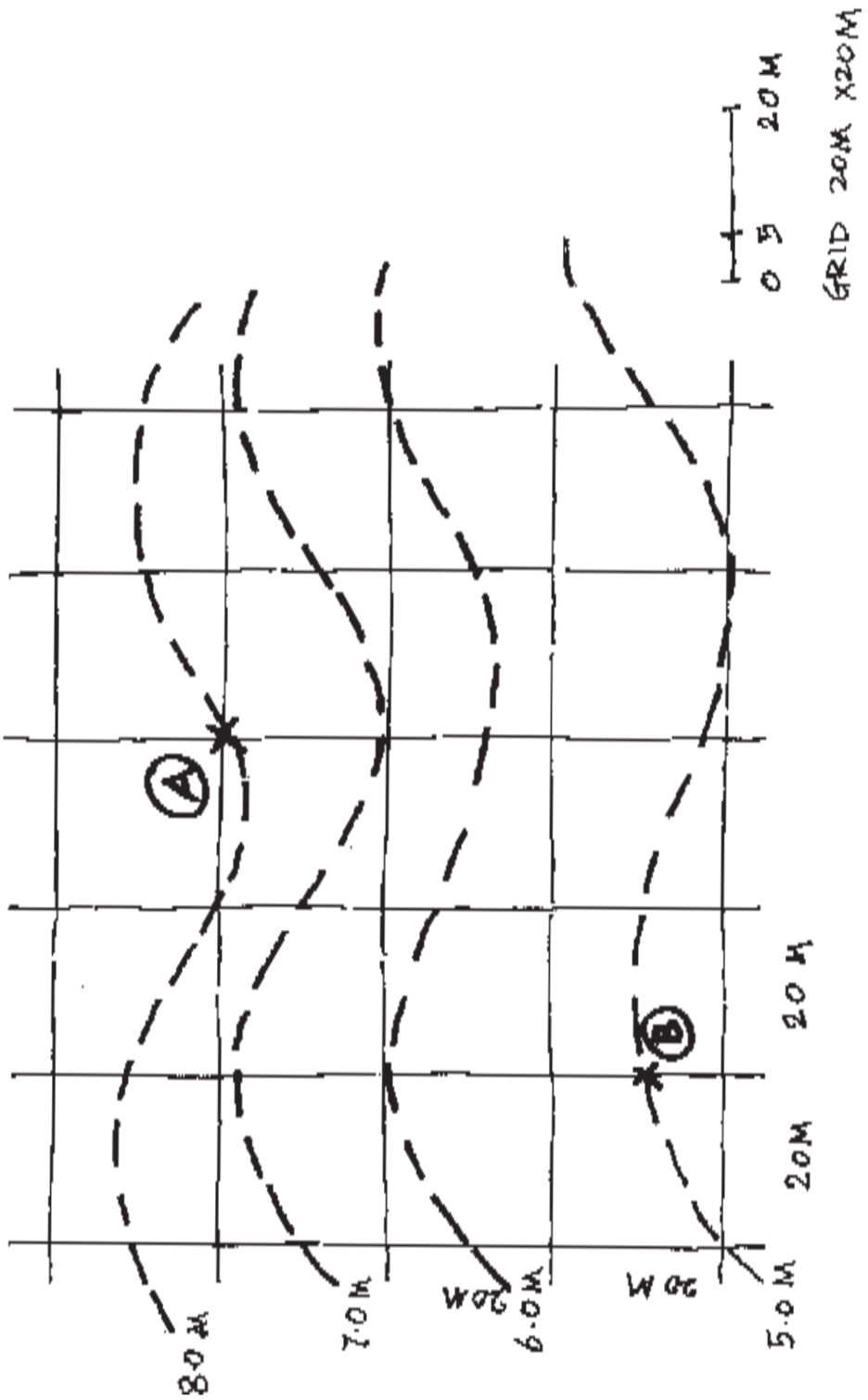
What is soil erosion? Explain the causes and the methods to control soil erosion.

Q7) Draw a plan, cross section of a typical road (6 m wide+ 1m wide pathway + 1 m wide swale) and minimum 3 contour signatures for the same with reference spot level as 20meter 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) Pathway slope away from the road: 2%
e) Curb height: 0.2m
f) Swale depth: 0.l0m

Q.4.



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

P1397

[3667] - 1159

M.Arch. (Landscape Architecture)

THEORY OF LANDSCAPE ARCHITECTURE - I

(Sem. - I) (2008 Syllabus)

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

Instructions to the candidates:

1) ***Q.1 and Q.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) Explain the principals of Persian Landscape and its reflections in Mughal Gardens. **[10]**

Q2) Discuss the association of Landscape and architecture in Babylon. **[10]**

Q3) Explain the historical influences which you think have had an effect on contemporary attitudes to the design of landscapes in India today. **[10]**

Q4) Write a note on Landscape of Alhambra in Spain. **[10]**

Q5) Compare with respect to siting, organization of space, Mughal gardens in India with gardens of the renaissance period in Italy. Draw illustrative sketches. **[10]**

SECTION - II

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

a) Symbolism in Landscape.
b) William Kent.
c) Salient features of Baroque period in France.
d) Capability Brown.
e) Use of vegetation in Chinese landscape.
f) Red Books.

P.T.O.

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

a) Vaux le Vicomte.

b) Kyoto garden.

OR

Q8) Write a note on 18th century picturesque gardens in England. **[10]**

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Total No. of Questions : 6] **[Total No. of Pages : 1**

P1398

[3667]-1160

M. Arch. (Computer Applications)

INTRODUCTION TO COMPUTER APPLICATIONS

(2008 Course) (Semester - II) (613401 - CA 101)

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

Instructions to the candidates:

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

SECTION - I

Q1) Describe how the process of visualization and model making has changed due to digital technology. **[12]**

Q2) Discuss various software's used in design process with their advantages and disadvantages. **[12]**

Q3) Define GIS and describe the components of GIS? **[13]**

OR

What is a Map Projection? Describe the common Map Projections? **[13]**

SECTION - II

Q4) What is the role of Building Automation in contemporary architecture? Discuss with respect to a residential unit. **[13]**

OR

Discuss Smart technologies for Intelligent buildings with respect to a commercial building. **[13]**

Q5) State and explain the causes and failure of MIS and also explain factors influencing MIS design. State the various classification of information required for MIS based on heads and types. **[13]**

Q6) What is Management, Information and System? Define MIS, explain the objectives and functions of MIS? **[12]**

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

P1399

[3667] - 1161
M. Arch. (Computer Applications)
HUMAN COMPUTER INTERFACE
(613402) (CA 102) (2008 Course)

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 indicates full marks.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) What important issues need to be considered while designing an interface for users with disabilities? **[7]**

b) What are different Human Factors that are to be considered while designing the user interface? **[6]**

Q2) Explain EIGHT golden rules of interface design. Give suitable examples to justify. **[12]**

Q3) a) What is UCD? Explain aim of user centered design. **[6]**

b) What is participatory design? Explain with suitable examples. **[6]**

Q4) You have to design an interface for vending machine which serves tea or coffee. Considering various user communities, their requirements and tastes, apply object action interface modeling technique to design this interface. Sketch the task and interface models. **[12]**

Q5) a) What are the different guidelines for data display and data entry? **[6]**

b) Explain three pillars of interface designs? **[6]**

P.T.O.

SECTION - II

Q6) a) What is direct manipulation technique? Explain any four metaphors used in this interaction style. **[6]**

b) The primary goal for menu, form fill in and, dialog box designer is to create a sensible; comprehensible, memorable and convenient organization relevant to user's task. Explain with examples. **[6]**

Q7) a) List and explain the steps of usability testing. What are some of the limitations of such testing? **[7]**

b) Comment and explain the use of natural language in computing. **[6]**

Q8) a) Compare and contrast online help with offline help **[6]**

b) Explain issues in face to face communications for CSCW. **[6]**

Q9) a) Explain how CSCW systems are, useful for cooperative working. **[6]**

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

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

b) What information visualization? Explain Data Type by Task Taxonomy (TTT). **[7]**

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

P1400

[3667] - 1162

M.Arch. (Computer Applications)

FUNDAMENTALS OF COMPUTER GRAPHICS

(2008 Course) (613403 - CA103)

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 indicates full marks.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Write the process of drawing a line using a DDA algorithm. How this process can be modified to draw a thick line? **[7]**

b) What is character generation? Explain any one process of character generation. **[6]**

Q2) a) What is bitmap? How different it is from vector graphics? **[6]**

b) Explain the process of rotation of a 2D object. Write the transformation matrix for the rotation. **[6]**

Q3) a) What is projection? Explain parallel and perspective projection. **[6]**

b) Explain homogenous coordinate systems. Write the homogenous transformation matrices for translation, scaling and reflection on x axis. **[6]**

Q4) a) What is clipping? How a line is clipped using Southerland-Cohen algorithm? **[6]**

b) Explain the steps in clipping a polygon on a rectangular clipping boundary. Take suitable example to justify your answer. **[6]**

P.T.O.

Q5) a) What is the need of visible-surface detection algorithms? Broadly classify these algorithms. **[6]**

b) A rectangle located in first quadrant with the vertices as $V_1(0,0)$ $V_2(0,3)$, $V_3(4,3)$ and $V_4(4,0)$ is to be rotated by 30 degrees and then to be scaled in X direction by 2 units and Y direction by 3 units. Get the vertices of the resultant rectangle. **[6]**

SECTION - II

Q6) a) Explain the RGB, CYM color models and draw suitable color cubes to explain the concept. **[7]**

b) What is fractal and explain fractal surfaces. **[6]**

Q7) a) What is shading? Explain Phong shading algorithm. **[6]**

b) Graphical Kernel system standardizes two-dimensional graphics functionality at a relatively low level. What are the primary purposes of the GKS standard? Also explain GKS output primitives. **[7]**

Q8) a) What is graphics hardware? Explain Video Display Standards. **[6]**

b) What are various Graphics Packages used for drawing and painting. Explain their important features. **[6]**

Q9) Explain the terms Transparency, Reflection and Shadows. **[12]**

Q10) Write short notes on any two : **[12]**

a) VRML.

b) Interpolating polygons.

c) Bezier curves.

d) B-splines.

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

P1401

[3667] - 1163

First Year M.Arch. (Computer Applications)

THEORY OF DIGITAL ARCHITECTURE - I

(Sem. - I) (New Course)

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

Instructions to the candidates:

1) ***All questions are compulsory.***

2) ***Figures to the right indicate full marks.***

Q1) Discuss with appropriate examples, how the visionary architecture of 20th century is shaping today's world with the help of innovative digital technologies. **[13]**

OR

Write a note on 1980's Radical Avant Garde movement in the field of art and architecture.

Q2) Discuss the philosophical journey of any two first generation architects using digital technology, through their works. **[13]**

OR

Explain the factors responsible for the paradigm shift from mechanistic Cartesian view to system view during 1960's. And discuss the key concepts of this newly emerged 'system view'. (i.e. *Behavioural studies*).

Q3) Discuss the influence of the study of nature and natural systems on Architectural design. **[12]**

OR

Discuss the various digital design processes and their use in the developmental stages of design.

P.T.O.

Q4) Explain modern philosophies & discuss their architectural interpretation with appropriate examples. **[12]**

OR

Write a short note on the influence of digital technology on (any two) :

a) Film industry.

b) Advertising industry.

c) Music and art.

d) News dissemination.

Q5) Write a short note on following (any two) : **[12]**

a) Archigram.

b) Situationist International & their architectural agenda.

c) Deconstruction & its influence on architecture.

d) Pop Culture.

OR

Write a short note on works of following architects (any two) :

a) Michael webb.

b) Greg Lynn.

c) Marcos Novak.

d) Norman Foster.

Q6) Discuss the radical concepts evolved by Architect Bernard Tschumi and their future implications. **[13]**

OR

Discuss the work of Architect Zaha Hadid and its influence on the current built forms.

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

P1402

[3667]-1168

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

ENVIRONMENTAL MANAGEMENT AND ECOLOGICAL LAND PLANNING

(New Syllabus) (Sem. - II) (Backlog) (613208) (Theory Paper)

Time : 2.5 Hours] ***[Max. Marks : 75***

Instructions to the candidates:

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

SECTION - I

Q1) Write briefly (any two) : **[15 marks each]**

a) List the different tools of Environmental Management. Describe in detail the Energy Auditing tool, particularly focusing on Energy Auditing of Buildings.

b) What are the merits and demerits of the PDCA Cycle in context of EMS. Describe each stage of the PDCA cycle.

c) Discuss the importance of 'Planning' in achieving success in EMS.

Q2) Write short notes on (any two) : **[5 marks each]**

a) Importance of communication within and outside the organization for EMS.

b) Internal Audits.

c) Energy Audit of Building Envelope.

SECTION - II

Q3) Write briefly (any two) : **[10 marks each]**

a) What is an Air Emissions Inventory? Write about the Emissions Inventory prepared for Pune. How, in your opinion, can the Emissions Inventory help preparation of Air Quality Management Plan for Pune?

b) How to analyze a wetland ecosystem? Write in detail what is a wetland and ideal conditions in any wetland ecosystem.

c) How do human activities impact the health of ecosystems? Give at least four human activities and elaborate their impacts on the ecosystem.

P.T.O.

d) What are the modern and alternative techniques for soil and water conservation? Explain each in detail.

Q4) Write short notes on (any three) : **[5 marks each]**

a) Survey methods for analysis of Forest Ecosystem.

b) Air Emissions.

c) Typical Steps in Watershed Planning.

d) Ecologically Sensitive Sites.

e) Soil Plant relationship.

Total No. of Questions : 6] **[Total No. of Pages : 1**

P1404

[3667]-1197
M. Arch. (Computer Applications)
GIS AND REMOTE SENSING
(New Course) (Semester - III)

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

Instructions to the candidates:

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

Q1) Define the Electromagnetic Energy and describe in detail the Electromagnetic Spectrum. **[12]**

OR

Describe the shape properties of the Earth? What is Map projection? In detail write about the three main types of projections.

Q2) Describe the interaction between the radiation with atmosphere and earth's surface. **[12]**

OR

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

Q3) Define GIS. Detail out the components of GIS. **[13]**

Q4) 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.

Q5) What are the data exploration techniques used in GIS? **[12]**

OR

What is Digital Image Processing? Describe any four image processing techniques.

Q6) Define Visual Image Interpretation. Describe the Elements of Visual Image Interpretation. **[13]**

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

P1405

[3667]-1167

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

ENVIRONMENTAL LAWS AND LEGISLATION

(Theory) (Semester - II) (613207)

Time : 2½ Hours] ***[Max. Marks : 75***

Instructions to the candidates:

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

SECTION - I

Q1) PIL is playing significant role in the protection of bio-diversity and environment. **[15]**

OR

Explain the significance of Public liability Insurance Act, 1991 in the light of Bhopal Gas Disaster case.

Q2) Explain in detail the principles laid down in Re: Noise Pollution case, 2000 and the effect of the Supreme Court decision on the abetment of Noise pollution. **[15]**

OR

Describe in detail powers and functions of Central and State Pollution Control Board under Water (Prevention and Control of Pollution) Act, 1974.

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

a) Need for Environment protection Act, 1986.

b) E-Waste: new source of pollution.

c) Fundamental duties.

d) NIMBY and NIYBYA.

SECTION - II

Q4) Discuss the issue of Urban Forests and Hill top – Hill slope, in Pune and critically appraise it. **[10]**

OR

Discuss in detail the role of NGOs in the implementation of environmental standards, rules and regulations.

P.T.O.

Q5) Does the outcome of 'Rio + 5' help the word to built consensus for the 'Only One Earth'? **[10]**

OR

Can proper planning and policies like eco-housing, electricity Conservation Building Codes, bio-diversity parks etc. possess potential to change the eco-footprint of Pune? Explain.

Q6) Write short notes (any three) **[15]**

a) UNEP.

b) Carbon Sequestration.

c) Eco-tourism Policy of Maharashtra.

d) BRT.

e) Sustainable Development and 3 R Principle.

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

P1406

[3667]-1169
M.Arch. (Landscape Architecture)
LA - 206 : LANDSCAPE TECHNOLOGY - II
(Credit System) (2008 Syllabus) (Backlog) (Sem. - II)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Section 1 carries 40 marks and section 2 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 design of roads with respect to landform. **[10]**

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

a) Explain the problems associated with disturbed landscapes of mines and quarries?

b) Explain landscape engineering measures with their advantages and disadvantages for watershed area with non-agricultural use.

c) Explain Landscape engineering measures for restoration of quarries.

SECTION - II

Q3) Describe landscape engineering measures for canalization and flow control for river. **[15]**

OR

Describe Environmental issues related to waterfronts. **[15]**

Q4) Write brief notes on any two of the following : **[20]**

a) Parkways and role of a landscape architect.

b) Environmental impacts of a landfill site.

c) Landscape treatment for improving saline soils

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

P1407

[3667]-1170
M. Arch. (Landscape Architecture)
THEORY OF LANDSCAPE ARCHITECTURE - II
(2008 Course) (Semester - II)

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

Instructions to the candidates:

1) ***Q.1 and Q.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) Write a note on the contribution to the Landscape Design by Geoffrey Jellicoe. **[10]**

Q2) What are the ideals of the 'Garden city movement'? Give examples of towns planned in the early 20th century. **[10]**

Q3) Write a short note on contribution of Landscape Architect Ian Mcharg to the current Landscape Design. **[10]**

Q4) What is the role of open spaces in Haussman's Plan for Paris? Illustrate with graphics. **[10]**

Q5) Write short note on Energy saving site planning and Landscape Architecture. **[10]**

SECTION - II

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

a) Parc de La Vilette.

b) Lovejoy Plaza, Portland.

c) Prospect – Refuge Theory.

d) Geoffrey Bawa.

e) Elements of new urban landscapes.

f) Lawrence Halprin.

P.T.O.

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

a) Cultural Landscapes.

b) Prof. Mohammed Shaheer.

OR

Q8) Trace the philosophical origins of the design of Central Park and subsequent works of Fredrik Law Olmsted. **[10]**

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

P763

[3667] - 11

First Year B.Arch.

BUILDING CONSTRUCTION & MATERIALS - I

(2003 Annual Pattern)

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

Instructions to the candidates:-

1) ***Answers to the two sections should be written in separate books.***
2) ***Answer any two questions from section - I and five subquestions from section - II.***
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 partly paneled and partly glazed door is to be provided for a clear opening of size 900mm × 2100mm in one brick thick wall.

Draw plan, elevation and vertical section to scale 1:10

Draw detail joint between rail and glass scale 1:5. **[30]**

Q2) A room of 3.5m × 7.0m (internal dimension) of 350mm thick brick walls is to be provided with double joist timber floor and timber flooring.

Draw framing plan (1:20) and joint details of binders and joist to the wall at suitable scale. **[30]**

Q3) Solve any three sub questions : **[30]**

a) Draw neat and proportionate sketch of a straight flight timber stair case and name the various parts.

b) Details part plans of alternate courses of "cross" junction in one brick thick wall.

c) Crosssection through a compound wall (one brick wall) showing coping & foundation (height 1.75m) (foundation 0.60m).

d) Hollow core flush door and its parts.

P.T.O.

SECTION - II

Q4) Write short notes with proportionate sketches where necessary (Attempt any five sub questions) : **[40]**

a) Draw sketches of any five tools used in excavation and masonary construction with their names and use.

b) Timber as a building materials (advantages/disadvantages).

c) Principle in timber balcony.

d) Roofing tiles (in brief).

e) Use of bamboo in building industries.

f) Importance of bond in load bearing structure and state the various types of bonds with their main feature in short.

g) Types of coping and its importance.

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

P764

[3667] - 13
First Year Architecture
HISTORY OF ARCHITECTURE AND HUMAN SETTLEMENTS - I
(2003 - Pattern)

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

Instructions to the candidates:-

1) ***Answers to the two sections should be written on 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) Explain the following terms with respect to their context (any 5) : **[20]**

a) Stone Henge.
b) Pylon.
c) Ball game court.
d) Stupa at Sanchi.
e) The Granary.
f) Hieroglyph script.
g) Dougong bracket.

Q2) Attempt any one : **[15]**

a) With help of well annotated sketches explain the different spaces of an Egyptian temple through plan, elevation and section.

OR

b) With the help of proper sketches and examples explain the salient features of the Indus Valley Civilisation.

Q3) Write short note on : **[15]**

a) Pagoda.
b) Viharas.
c) Any two vedic village pattern.
d) Egyptian Columns.
e) Chaitya Hall.

P.T.O.

SECTION - II

Q4) Explain the following terms with reference to their context (any 5) : **[20]**

a) Doric and Ionic order.
b) Thermae.
c) Ziggurat.
d) Forum.
e) The city plan of Babylon.
f) A Roman villa.
g) Acropolis.

Q5) Draw the plan and elevation of a Greek temple and explain its characteristic features. **[15]**

OR

What is a pendentive? With the help of sketches explain the characteristic features of a typical Basilica church.

Q6) Write short notes on : **[15]**

a) Aqueducts.
b) Any 2 optical corrections.
c) The treasury of Atreus.
d) The Arcuate and Trabeate System of construction.
e) Domus and Insula dwellings.

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Total No. of Questions : 7] **[Total No. of Pages : 4**

P765

[3667] - 21

S.Y. B.Arch.

BUILDING CONSTRUCTION AND MATERIALS - II

(Annual 2003 Pattern) (Theory)

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

Instructions to the candidates:-

1) ***Answer to the two sections to be written on separate books.***
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) A room measuring 3500mm × 4000mm is constructed with RCC framework with a projection canopy of 900mm at enterance door. Size of the column is 230mm × 350mm. Height of the room is 3200 mm (from the finished floor level to the slab top) Lintel level @ 2100mm. **[20]**

(Assume necessary reinforcement details for the concerned r.c.c. frame structure.)

a) Draw a keyplan.

b) Enlarged details of section through shorter span of slab with reinft. detail.

c) Details of the canopy.

OR

A multi purpose hall of size 7.5m × 15m with a clear height 5 mts is to be provided with timber roof truss and GI sheets. Trusses are resting on 300mm × 350mm RCC column at suitable intervals.

Draw key plan and section to scale 1:50

Draw sketches of

a) Fixing of sheets.

b) Gutter details.

P.T.O.

Q2) MS window of size 1500mm × 1200 mm is to be provided in an office building with cill level of 900mm. **[20]**

a) Draw plan, Section and external elevation of window to scale 1:10

b) Details of glass fixing and hinges to 1:5 scale.

OR

Hollow core flush door to a toilet with one brick thick masonry wall is to be provided for an opening size 900mm × 2100mm.

a) Draw Plan, Section and external elevation of door to scale 1:10.

b) Details of lock rail and ventilation grooves.

Q3) A hall size of 3000mm × 5000 mm constructed in concrete block masonry is divided with internal partition wall across its longer dimension with the same material. Size of window opening 1200mm × 1200mm and overall height of hall is 3200 mm. **[20]**

a) Draw plan and section to scale to scale 1:50.

b) Details at junction and openings.

OR

A room size 3000mm × 8000 mm is to be constructed with RCC columns of size 230 mm × 380 mm located at four corners. Draw internal wall.

a) Draw key plan and section to 1:50 scale showing footing and plinth beam and ground beams.

b) Draw enlarged detail of footing to 1:10 scale.

(Assume necessary reinforcement details for the concerned r.c.c. frame structure.)

SECTION - II

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

a) PCC, RCC and Reinforcement.

b) Stabilized blocks.

c) Vault and dome in masonry construction.

d) Market forms of timber.

e) Curing methods.

f) Any one type of temporary structure.

g) Stirrups and links.

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

a) Bulking of sand.

b) Eccentric footing.

c) Plinth beam.

d) Grading of aggregate.

e) One way slab.

f) O.P. Cement.

g) Water cement ratio.

h) Bulb of pressure.

i) D.P.C.

j) Wall ties in cavity walls.

k) Guniting.

l) Tie beam in composite roof.

Q6) Complete the following **[5]**

a) External plinth beams are located at :

i) Ground level ii) Plinth level

iii) Finished floor level.

b) Asphalt is a material used for,

i) Plastering. ii) Damp proofing.

iii) Arches iv) Drainage.

c) Butterfly ties is used in,

i) Doors ii) Floors

iii) Roofs iv) Cavity walls

d) The J bolts are used in,

i) Flooring. ii) AC Roofing.

iii) Timber floor. iv) DPC

e) Slenderness ratio means,

i) Ratio of area to height.

ii) Ratio of cement to sand in concrete.

iii) Ratio of steel to concrete.

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

a)	Cement	40mm
b)	Bending moment	Below all external walls of building.
c)	Distribution steel	Diagram to calculate stress
d)	Ground beam	53 grade
e)	Cover for RCC column	RCC slab

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

P766

[3667] - 24

S.Y. B.Arch.

BUILDING SCIENCE & SERVICES - I

(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) ***Figures to the right indicate full marks.***
3) ***All questions are compulsory.***

SECTION - I

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

a) What are the different materials used for water supply pipes? Mention their advantages & disadvantages. Show their joinery details with sketches.

b) What are the principles of working of septic Tank? Draw and label different parts of a septic Tank.

c) What are the functions of traps? Draw and mention the locations of Floor Trap, Gully Trap and Sewer Trap.

Q2) Write short notes of the following with sketches wherever necessary (Any Four): **[4 × 5 = 20]**

a) Pillar tap.

b) Gate Valve.

c) Anti-siphonage pipe.

d) Auto-Pneumatic system.

e) Inspection Chamber.

f) Rainwater harvesting.

P.T.O.

SECTION - II

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

a) What is Daylight Factor? What are the parameters of Daylight Factor? Explain with sketches.

b) What is Lumen Method? Explain its components and mention the formula.

c) Describe systems of distribution of hotwater supply.

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

a) Refuse chute.

b) Bio-Gas plant.

c) Bus-bars.

d) Miniature Circuit Breaker.

e) Incandescent Bulb.

f) Lightning conductor.

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

P767

[3667] - 32

T.Y. B.Arch.

BUILDING CONSTRUCTION & MATERIALS - III

(Yearly Pattern) (New Revised Course 2003)

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

Instructions to the candidates:

1) ***Answer any two questions from Q.1 to 3 and Q.4 is compulsory.***
2) ***Answer to section - I and section - II should be written in two separate answer sheets.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Draw plan, elevation & section of T.W. Sliding and folding center hung door. For an opening 5000mm × 2100mm between living room and a terrace to the scale of 1:10. **[20]**

b) Draw detail at bottom and top explaining the sliding mechanism to a scale 1:5 **[10]**

Q2) a) Draw plan & section showing Reinforcement detail of cantilever beam balcony of width of 1200mm and length of 4500mm from building line to the scale 1:20 **[15]**

b) Draw details Reinforcement of beam & balcony slab to the scale 1:10. **[10]**

c) Draw detail at R.C.C parapet for the balcony of height 1.2m to the scale 1:10. **[5]**

Q3) Draw sketches and explain in detail (any three) : **[30]**

a) Long span structures.
b) Advantages of Reinforced brick work.
c) Stub column and Stanchions fixing detail at base.
d) Terminology & types of R.C.C retaining wall.
e) T.W. Bay Window.

P.T.O.

SECTION - II

Q4) Write short notes (any five) : **[40]**

a) Light weight concrete.

b) Guniting.

c) Alloyed steel and stainless steel.

d) Modular co-ordination in building industry.

e) Methods of polishing for old or new wood.

f) Process of painting on wood and steel.

g) Types of Glass and their uses.

h) Different types of cladding.

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

P768

[3667] - 34

T.Y. B.Arch.

BUILDING SCIENCE & SERVICES - II

(2003 Annual 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) ***Assume suitable data if required.***
4) ***All questions are compulsory.***

SECTION - I

Q1) a) Explain the ways in which natural ventilation can be achieved in buildings. **[10]**

b) Write in brief the conditions in which artificial ventilation is required to be provided. **[10]**

OR

a) Explain the procedure and data required for the no. of exhaust fans calculation for a kitchen. **[10]**

b) Which general rules should you observe for artificial ventilation in a building. **[10]**

Q2) Write short notes on any FIVE : **[30]**

a) Types of fans used in mechanical ventilation.
b) Fan coil units.
c) Types of filters used in Air Conditioning.
d) Wind Catchers
e) Condition of comfort.
f) Window A.C. Unit

P.T.O.

SECTION - II

Q3) What is Time of Reverberation? How is reverberation time calculated? State the optimum time of reverberation for the following buildings: **[20]**

a) Cinema theatres.

b) Music concert hall.

c) Assembly hall.

d) Conference room

Q4) 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.

f) Methods of cutting off air borne noise.

g) Two types of fire hydrants.

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

P769

[3667]- 35

T.Y. B.Arch.

Quantity Surveying and Specification Writing

(Annual 2003 Pattern)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answers 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.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, electronics calculator and steam table is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) Work out the quantities for the following items of work based on the details given in the accompanying diagram (any five) : **[30]**

a) 230 mm thk. Brick work in 1:6 C.M. in superstructure.

b) R.C.C. Column in C.C. 1:2:4 in superstructure.

c) Ceramic tile flooring in all rooms (except bath and w.c.)

d) T.W.Doors frames 125 × 65 mm for doors D and D1.

e) Glazed tile dado in Bath and W.C. upto 2.1 mtr. Height.

f) R.C.C. Lintols for windows (bearing 300).

g) Oil Bound Distemper for all internal walls.

h) White wash for ceiling in all rooms.

Q2) State the mode of measurement for the following items confirming to IS Code 1200 (any two) : **[10]**

a) R.C.C. slab.

b) 230 thick brick masonry.

c) Ceramic tile flooring.

d) External sand faced plaster.

e) T.W. frames.

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

a) Indent of Materials.

b) Rules fir deduction in plaster.

P.T.O.

c) Profit and Overheads.

d) Supplimentry and Revised Estimate.

e) Difference between Schedule of Rates and Analysis of Rate.

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

a) R.C.C. slab.

b) P/L ceramic tile flooring.

c) P/F T.W. Frames.

d) P/L 230 mm thick brick masonry.

SECTION - II

Q5) Describe specification and describe briefly different types of specifications and elaborate any two types of specification. **[10]**

Q6) Write detailed material specifications of (any two) : **[10]**

a) Bricks.

b) Water.

c) Cement.

d) Cement tiles.

Q7) Write in brief specifications on workmanship (any two) : **[10]**

a) 230 th.B.B. Masonry in superstructure.

b) Random rubble masonry.

c) Painting of wood work.

d) Rough cast cement plaster.

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

a) Ceramic tiles.

b) W.C.Pan.

c) Stainless steel kitchen sinks.

d) Electric Cables.

e) 43 Grade cement.

f) Modular switches.

g) Laminates for furniture.

h) Clay roofing tiles.

i) Lifts.

j) Cement paint.

k) Glass films.

l) Laminates for furniture.

SCHEDULE OF OPENING
D - 920 x 2100 PANELLED DOOR WITH T.W.FRAME
D1 - 900 x 2100 FLUSH DOOR
D2 - 750 x 2100 FLUSH DOOR
W - 1800 x 1200 M.S.WINDOW
W1 - 1500 X 1200 M.S.WINDOW
W2 - 1000 x 1200 M.S.WINDOW
V- 600 x 900 M.S.VENTILATOR
WATERPROOFING LIME TERRACING WITH BRICK BAT COBA LAID TO SLOPE.
BRIEF SPESIFICATIONS & DETAILS OF STRUCTURE
DEPTH OF EXCAVATION 1500 BELOW GL.
FILING -230DRP OVER MURUM FILING.
CONCRETE WORK
CC 1:4:8 BELOW R.C.C FOOTING &
CC 1:3:6 ABOVE PLINTH LEVEL.
R.C.C.WORK
EXTERNAL COLUMUNS 230 X 300
EXTENRNAL FOOTING 900 X 900
D-400 d-150 EXTERNAL PLINTH / FLOOR BEAMS-230 X 380
INTERNA PLINTH / FLOOR BEAMS - 230 X 450
RCC FLOOR SLAB 130 mm THK.
RCC TREAD 250 RISER 165 RCC WAIST SLAB 150 mm THK.
RCC PARDI 130 mm THK., HT-1000
FLOORING
ALL ROOMS HAVE CERAMIC TILE FLOORING.
BATH & WC HAVE GLAZED TILE DADO UPTO 2.1M
FINISHING -
EXTERNAL PLASTER 20 mmTHK. SANDFACE PLASTER WITH WHITE CEMENT PAINT FOR EXTERNAL 230 mm THK. BRICK WALLS INTERNAL PLASTER 12mm THK.SUNLA PLASTER WITH DRY DISTEMPER TO INTERNAL 150 mm THK BRICK WALLS EHITE.WASH FOR CEILINGS.
SECTION AT X-X
GROUND LEVEL
1000
3350
450
3800
8230
GROUND FLOOR PLAN
BED ROOM 3810 X 3350
W.C 1500 X 1200
TOILET 1400 X 1200
LIVING 4570 X 3350
KITCHEN 2750 X 3350
BED ROOM 3810 X 3350
W1
D1
D2
D
V
UP
10470

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P770

[3667]- 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 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. Skill of drafting should have language of architecture.***

NURSING COLLEGE AT AURANGABAD

Nursing profession is noble profession with requirement of highly skilled and trained manpower and dedication. Health tourism has made India a preferred destination. Hence, there is shortage of trained nurses in India. A well established charitable trust running a hospital on the outskirts of Aurangabad city has proposed to start Nursing College for women attached to the hospital providing diploma, degree and post graduate courses simultaneously.

The selected plot for the Nursing College is fairly flat and rectangular in shape having 80M. east-west and 50M. north-south dimensions. It has 18M. wide road on south side existing hospital is on north and east side. West side plot is reserved for the proposed hostel building.

You have to design the proposed Nursing College with the following requirements. Convenient connectivity should be provided to the existing hospital.

SPACE REQUIREMENTS

Note : Figures to the right indicate carpet area in square meters.

Adequate areas for passages, lobbies, porch, stairs, services and toilets should be added wherever required.

A : Administration

1. Entrance hall, Waiting ---------- 60
2. Administration Office ---------- 60
3. Principal's office with attached toilet, Secretary and Visitor's waiting--- 60
4. Conference ---------- 60
5. Staff Room with attached toilet ---------- 60
   4 cabins attached to staff room, 15 smt each ---------- 60
6. Pantry for staff ---------- 15
7. Store room ---------- 15
8. Toilet for both sexes

B : Academics

1. Small class rooms for undergraduate and post grad. course 4 nos, 60 smt each ---------- 240
2. Large class rooms of diploma course 4nos, 90sqm each ---------- 360
3. Laboratories-nursing art ---------- 120
4. Laboratories-Community health ---------- 60
5. Laboratories-Nutrition ---------- 60
6. Nursing museum ---------- 120

C : Library

1. Entrance hall with bag storage etc ---------- 30
2. Reading room for newspapers and periodicals ---------- 30
3. Stack space for 6000 books and with open browsing system--as required
4. Reading room for serious referencing ---------- 90
5. Study carrels 10nos, 5sqm each ---------- 60
6. Librarian's cabin ---------- 30

D : Other

1. Audio-visual room with projection facility ---------- 60
2. Seminar Hall ---------- 60
3. Computer Room ---------- 60
4. Workshop ---------- 30

E : Auditorium & Ancillary Spaces

1. Auditorium hall with 200 seating capacity with projection facility --- 300
2. Foyer, lobbies and adequate toilets
3. Students' Common Room ---------- 60
4. Canteen ---------- 80
5. Kitchen with store room. Washing area and Pantry ---------- 50

F : Parking

1. Parking for 2 buses 6 cars and 50 two-wheelers should be provided with adequate drive-way.

Design Parameters :

1. Minimum side margins from all sides 6.0 meters.
2. Maximum permissible height is 15M.
3. Outdoor activity spaces should be integrated with indoor activity spaces.
4. Interesting Landscape should be provided.

Drawings Required :

First Day : Scale

1. Single line Layout Plans showing site, buildings, parking, driveways, pathways, landscaping etc. 1:200
2. Single line plans at all levels

Final Day :

1. Layout plan showing site, buildings parking, driveways, pathways, landscaping etc. 1:200
2. Plans at all levels 1:200
   Internal layout should be shown.
3. Minimum 2 sections to explain the scheme 1:200
4. Minimum 2 elevations 1:200
5. A sketch perspective or bird's eye-view.

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

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[3667]- 1002

F.Y. B.Arch. (I.D.) (Theory)

HISTORY OF ARCHITECTURE, ART, CULTURE AND INTERIOR DESIGN - I

(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) Torana.

b) Padmaka.

c) Obelisk.

d) Ziggurat.

e) Sphinx.

Q2) Describe the salient features of Buddhist architecture with reference to their building typology. **[15]**

OR

Describe the salient features of Egyptian temple with suitable example.

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

a) Mesopotamian brick construction.

b) Prehistoric art.

c) Chinese roof construction.

d) Japanese house interiors.

e) Egyptian Furniture.

f) Stonehenge.

P.T.O.

SECTION - II

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

a) Nave and Apse.

b) Circus.

c) Agora.

d) Bell tower.

e) Roman Villa.

Q5) Describe the religious typology of Roman architecture and describe salient features of Roman masonry construction. **[15]**

OR

Describe the evolution of church architecture from Basilica Plan.

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

a) Frescoes.

b) Thermae.

c) Lion gate.

d) Megaron.

e) Roman Residences.

f) Mayan Vault.

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

P772

[3667]- 1003

F.Y. B.Arch. (I.D.)

Construction, Services and Materials - I (ID3)

(Theory) (2003 Pattern)

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

Instructions to the candidates:

1) ***Answer any two questions from section-I. Section - II & Section - III are compulsory.***
2) ***Answers to the three sections should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***
4) ***Draw neat diagram to answer the questions wherever necessary.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Draw alternate courses of 'T' junction of one bk. thk. External wall and ½bk. thk. internal wall in English bond and part elevation to a suitable scale with nomenclature and dimensions. **[10]**

Explain the terms toothing and perpends in the elevation. **[5]**

b) Draw elevation of segmental arch to the suitable scale to explain any 5 terminologies used in Arches. **[10]**

Q2) a) Give strip foundation detail for load bearing construction out of 1 brick thk. wall with the help of plan and section to the scale of 1:10. **[10]**

Give detail of entrance steps showing plinth formation. **[5]**

b) Draw typical section of compound wall in stone masonry with nomenclature and dimensions. **[10]**

Q3) a) Draw neat sketches of any three of the following : **[15]**

i) Joint between head and post for door frame.

ii) Joint between rafter and collar.

iii) Any 2 lengthening joints.

iv) Joint between two door battens.

v) Section through any type of staircases.

P.T.O.

b) Draw a section through lean to roof with terminology and dimensions. **[10]**

SECTION - II

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

a) Double pipe drainage system.

b) Water distribution systems for the cities. (any two)

c) 'S', 'P', Nahni traps.

d) Sluice valve.

Q5) Draw illustrative sketches (any two) : **[10]**

a) Plan, Section of Orissa Pan.

b) Plan, Section of Bath Tub.

c) Plan, Section of Wash Hand Basin.

SECTION - III

Q6) Answer the following (any three) : **[15]**

a) Explain good qualities of bricks.

b) Explain use of stone in construction.

c) Explain defects in timber.

d) Explain various materials used for roofing.

Q7) Write short notes on following (any two) : **[10]**

a) Initial and final setting time for cement.

b) Comparison of lime mortar and cement mortar.

c) Explain various materials used for flooring.

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

P773

[3667]- 2002

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

HISTORY OF ARCHITECTURE, ART, CULTURE AND INTERIOR 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 indicate full marks.***

SECTION - I

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

a) Mihrab.

b) Islamic Gardens.

c) Pradakshina Path.

d) Column order-Gupta.

e) Indo Islamic Domes.

f) Pushkarinis.

g) Jain temple interiors.

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

Q3) Differentiate between Nagara style and Vesara style of Hindu Temple Architecture. **[10]**

Q4) Discuss Akbar's contribution in Indo Islamic Architecture with ref. to Mughal Architecture. **[10]**

Q5) Describe salient features of Orrisan Temples. **[10]**

P.T.O.

SECTION - II

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

a) Triforium gallery.

b) Sexpartite vault.

c) Brunelleschi's Dome.

d) Incan Art.

e) Bell Tower.

f) Forbidden city.

g) Angor wat.

Q7) State the salient features of Gothic architecture. **[10]**

Q8) Discuss contribution of Christopher Wren to English Renaissance Architecture. **[10]**

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

Q10) State the salient features of Romanesque Architecture. **[10]**

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

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[3667]-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 questions are compulsory.***
2) ***Answers to the three sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Q1) A room of size 3000 mm × 3500 is to be constructed in RCC with Columns of size 230 × 350 mm at 4 corners. Draw a key plan and section to 1 : 50 scale showing columns, beams, footings and plinth beams with reinforcement detail of beams along the shorter span. **[10]**

Draw enlarged detail of footing to 1 : 10 scale showing reinforcement. **[5]**

Detail of external plinth beam. **[5]**

OR

Give a detailed plan and section from foundation to roof using hollow concrete masonry to scale 1 : 20. **[10]**

Draw enlarged lintel detail to 1 : 5, **[5]**

Draw enlarged Jamb detail to 1 : 5 **[5]**

Q2) A Composite truss roof is to be provided for a workshop 12 m × 18 m with AC Sheet roofing with 450 mm overhang on both side, clear internal height is 4.5 m and external walls are 350 mm thk in brick, strengthened with 450 mm × 450 mm brick piers at 3 m c/c draw key plan (scale 1 : 50) showing trusses and members. **[10]**

Draw detailed Elevation at eaves using suitable scale. **[5]**

Draw detail at ridge using suitable scale. **[5]**

OR

P.T.O.

A community hall of size 6000 × 9000 is to be provided with Partly glazed and partly Paneled Entrance door of size 1.5 m × 2.1m. Draw Plan, Elevation and Section to explain the construction to 1 : 20 scale. **[10]**

Draw the joinery between stile and middle rail. **[5]**

Draw enlarged detail of glazing fixing and Panel fixing to 1 : 5 scale. **[5]**

Q3) Explain with the help of sketches the following (Any 2) : **[10]**

a) Draw isometric view of timbering and strutting for loose soil condition.

b) Section of chajja with reinforcement.

c) Foundation on sloping sites.

SECTION - II

Q4) Write short notes : (Any 5) **[25]**

a) High Alumina cement.

b) Defects in plaster.

c) Method of fixing AC sheet roofing.

d) Natural Stones available in India.

e) Types of pointing.

f) Neeru finish cement plaster.

g) Bulking of sand and its significance in cement mortar.

SECTION - III

Q5) Answer the following : (Any 5) **[25]**

a) Draw typical section through Over head tank water tank.

b) Explain the terms: flutter and echo.

c) Explain Anti syphonage pipe and its use.

d) Draw and explain the flow diagram for the internal electrical distribution system.

e) Explain various types of materials used for acoustical treatments.

f) State different types of hot water distribution systems.

g) Explain safety devices used in electrical installations.

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

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[3667]-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) ***Answers to Section I, Section II and 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, if necessary.***

SECTION - I

Q1) Draw the Plan and longitudinal section through a RCC straight flight staircase with the following details showing all reinforcements with supporting column and beam positions in plan and section.

Floor to Floor Height	3.20 m
Width of flight	1.00 m
Scale	1 : 20

[20]

OR

Draw a plan and section of North light truss. Scale 1 : 20. Give details of any two joints at a suitable scale. **[20]**

Q2) Draw a partly glazed - partly paneled partition with a door of size 0.9 m × 2.1m for a recording studio of size 4.5 m × 3.75 m. The ceiling height of the recording studio is 2.9 m. Draw Plan and Section through partition and door to a scale of 1 : 20. **[20]**

OR

A suspended luminous ceiling is to be prepared for the above mentioned recording studio at a height of 2.8 m above the floor. Draw the reflected ceiling plan showing framing and lighting and sections to a scale of 1 : 20 and details to a scale of 1 : 5. **[20]**

P.T.O.

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

a) Different types of retaining walls with explanation of active and passive forces, dewatering details.

b) Any two types of pile foundation.

c) Any two types of long span construction systems up to a span of 3.0 m.

SECTION - II

Q4) Explain with neat sketches (**Attempt any five**) : **[25]**

a) Reinforced brick pillars and lintels.

b) Advantages and disadvantages of Lightweight Concrete.

c) Different types of glasses used in construction industry.

d) Different methods of waterproofing for terraces.

e) Aluminum and Stone cladding to external surface.

f) Types and use of structural steel in Building Industry.

g) Different types of polishing to timber.

SECTION - III

Q5) Write short notes (**Attempt Any five**) : **[25]**

a) Passive cooling strategies.

b) Types of filters used in air-conditioning.

c) Fire protection of steel members.

d) Smoke detectors.

e) Conditions and regulations with different means of escape in case of fire.

f) Air handling units.

g) Different types of ducts used in AC system.

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[3667]-3003
T.Y. B. Arch.
ARCHITECTURAL DESIGN - III
(2003 Annual 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 drawings of the site & floor plans and sections at 1:200 scale at the end of the first day. These sketches shall not be returned to the candidates therefore due record of the same should be kept for reference on the subsequent day. Candidates should refrain from making serious deviations from the sketch design submitted on the first day.***
4) ***The drawings should be self explanatory with structural clarity in the drawings.***

Shopping and Recreation Centre in a Residential Colony at Nagpur

In a residential colony in Nagpur, a corner plot admeasuring 80 m × 60 m (as per the sketch attached) has been reserved for convenience shopping, fast food centre and recreational facilities. An outdoor party space for community activities such as festival celebrations, cultural programs, kids play etc. also has to be provided.

Nagpur experiences severe summers from March to May with temperature exceeding 40 deg. Celsius. The winters are very cold (November to January) and the temperature even dips down below 10 deg. Celsius. The rainy season is from June to September. It is desired that the designer takes into account the climatic factors and creates habitable spaces (indoor as well as outdoor) using passive strategies for climatic control.

The design should be inclusive and barrier free.

Following is the design programme (carpet areas in sq.m.) :

A **Convenience Shopping** :-

1. 10 Shops of area 15 sq.m. each. ... ... 150 sq.m.
   (these shops would include a florist, an ATM, bakery, medical store, saloon, vegetable shop, stationery shop, laundry, netcafe, xerox shop)

B **A Fast Food Centre** :-

1.	Kitchen, pantry, washing space and store ...	30 sq.m.
2.	Covered seating space	30 sq.m.
3.	Open seating space for 20 persons	As per design

C **Indoor Recreation Facilities** :-

1.	Multipurpose hall to accommodate a badminton Court	200 sq.m.
2.	Table Tennis hall	40 sq.m.
3.	Pool Table	40 sq.m.
4.	Games Space for cards, carom etc.	40 sq.m.
5.	Library with reading space for 10 persons. ...	40 sq.m.
6.	Estate Manager's Office	20 sq.m.
7.	Store and maintenance room	20 sq.m.

D **Outdoor Spaces** :-

1. Party space for community functions ... ... 3000 sq.m.
   - The area is inclusive of a stage, a kitchenette for catering services, and requisite number of toilets.
2. Parking for 6 cars, 20 two wheelers and 20 cycles.

Notes :

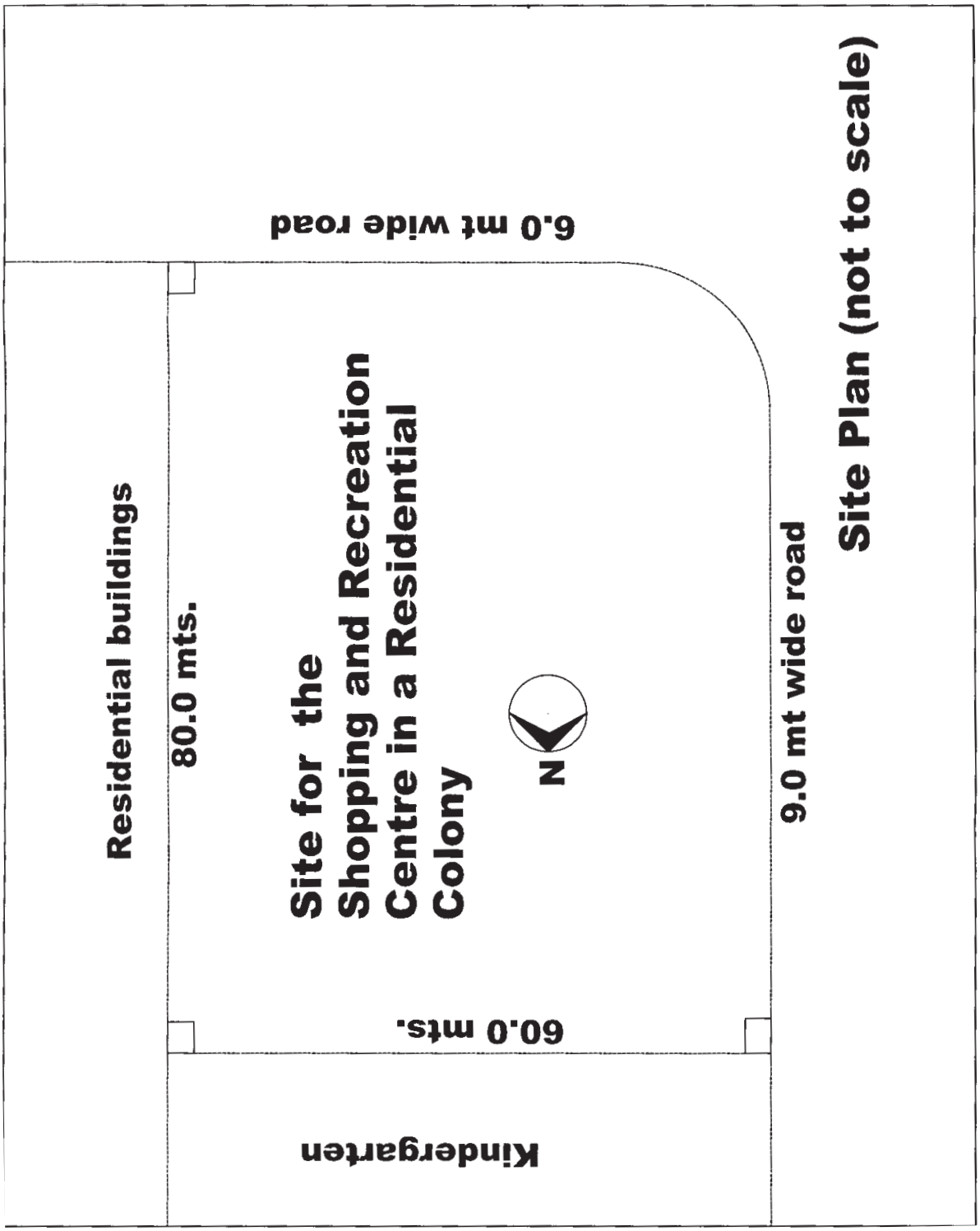
a) Road side setback for the building - 6 mts and from all other sides leave 3 mts. margin.

b) There are no restrictions on the height, materials, constructional idioms etc.

c) The designer may club various spaces or segregate them as per the concept and accordingly **provide and locate appropriate number of toilets (for staff and visitors), passages, staircases, verandahs.**

The students should graphically explain the design scheme by preparing manually drafted drawings that are as follows :

1.	Site plan with ground floor plan showing overall site and landscape development.	1 : 200
2.	Other Floor plans	1 : 200
3.	Roof plan	1 : 200
4.	Two sectional elevations	1 : 200
5.	Roadside elevation	1 : 200
6.	A perspective sketch.	


Site Plan (not to scale)
6.0 mt wide road
Residential buildings
80.0 mts.
Site for the
Shopping and Recreation
Centre in a Residential
Colony
N
9.0 mt wide road
60.0 mts.
Kindergarten

***

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

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[3667]-3004
T.Y.B. Arch. (Interior Design)
HISTORY OF ARCHITECTURE, ART, CULTURE & INTERIORS - III
(Annual 2003)

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

Instructions to the candidates:

1) ***Write answers to each section in a separate answer book.***
2) ***Question 1 from Section I & Question 6 from Section II are compulsory.***
3) ***Solve any three of the remaining questions from each Section.***
4) ***Support your answer with neat sketches.***

SECTION - I

Q1) Write short notes with sketches (Any 4) : **[20]**

a) Indian motifs in Colonial architecture of India.

b) Post-independence Indian Architecture.

c) Monuments in contemperory Indian Architecture.

d) Influence of modernism on Interior design in India.

e) Use of water in traditional Indian architecture.

f) Influence of material & technology in Indian architecture.

Q2) Explain the role of climate & resources in the architecture of Laurie baker. **[10]**

Q3) Explain the influence of prevailing styles on Maratha Architecture. **[10]**

Q4) What is the contribution of Le Corbusier &Louis Kahn in Indian architecture? **[10]**

Q5) Explain philosophy & works of any Indian architect of your choice. **[10]**

P.T.O.

SECTION - II

Q6) Write short notes with sketches (Any 4) : **[20]**

a) Art Nouveau

b) Bauhaus

c) Minimalism & architecture of Mies van de rohe.

d) Monumentalism & architecture of Louis Kahn.

e) Regionalism.

f) Post Modernism.

Q7) What is International style of architecture? Explain with sketches. **[10]**

Q8) What is the background & influences on the 'Arts & Crafts' movement. **[10]**

Q9) What is 'Organic Architecture'? Explain with examples from Architect F.L. Wright's works. **[10]**

Q10) Explain how the traditional Japanese architecture has influenced the contemperory architecture. **[10]**

Total No. of Questions : 7] **[Total No. of Pages : 4**

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[3667]-3005
T.Y. B. Arch. (I.D) (Theory)
ESTIMATION & COSTING (313484)
(Annual Pattern)

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) Work out the quantities for the following items (Any Five) for the structure shown in the accompanying diagram (Fig. 1) based on the details & data given, **[30]**

a) Mirror polished Kotah Flooring and skirting.

b) 230 thk. B.B. Masonry (CM 1 : 6) in superstructure.

c) U.C.R. in CM 1 : 6 in foundation & plinth.

d) T.W. door frame (125 mm × 65 mm) for doors D1 & D2.

e) Excavation in soft soil.

f) 12 mm thk. Internal plaster to walls in CM 1 : 4.

g) R.C.C. lintels for windows & doors (bearing 300 mm).

Data - All lintels to be 230 mm × 230 mm with both side bearing of 300 mm.

All skirting height to be 100 mm.

D1 – 900 mm × 2100 mm

D2 – 750 mm × 2100 mm

P.T.O.

Q2) Write short notes on (any two) : **[10]**

a) Schedule of Rates (DSR).

b) Requirements of an Estimator.

c) Spot Items.

d) Task Work.

Q3) Describe the items of work as described in Bill of Quantities for the following items of work (any two) **[10]**

a) P/F 600 mm × 450 mm Disconnecting Chamber.

b) P/F solid core flush door.

c) P/F 20 mm dia. Heavy grade G.I. pipe on walls/ceiling/floors.

d) P/A Waterproof Cement Paint.

SECTION - II

Q4) a) How does specification writing help the Architect & the client? **[5]**

b) Write the general checklist/sequence of writing specification for items of construction work. **[5]**

Q5) Write detailed specification for the following (Any one) : **[10]**

a) Structural steel work for trusses.

b) Earthwork in excavation in foundation.

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

a) Objective of Specification writing.

b) Sources of information for specification writing.

c) Brief specification for removal of water from foundation.

d) Advantages of closed specifications.

e) Technical provisions in detailed specification.

f) List the essential principles of specification writing.

Q7) Specify following materials by trade/manufacturer's name. (Any Ten) : **[10]**

a) Modular False Ceiling.

b) Stainless steel kitchen sink.

c) Electric switches.

d) PVC water storage tank.

e) Electric cables.

f) Laminate for furniture.

g) Vitrified Tiles.

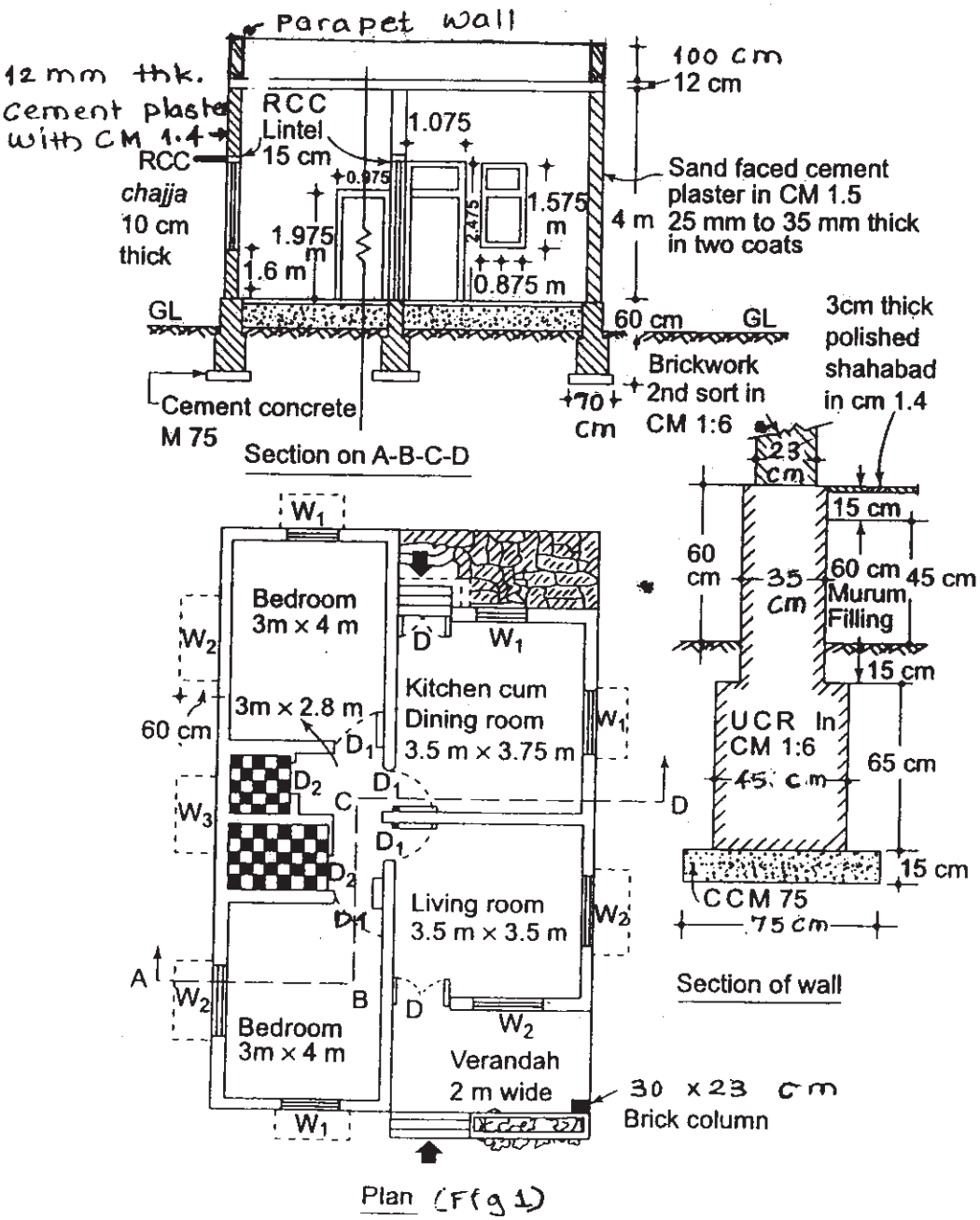
h) Diesel generator.

i) Cement paint.

j) Adhesives.

k) Lift.

l) Air conditioner.


Parapet wall
12 mm thk. Cement plaster with CM 1:4
RCC Lintel 15 cm
RCC chajja 10 cm thick
1.075
0.975
1.975 m
1.6 m
2.475
1.575 m
0.875 m
100 cm
12 cm
4 m
Sand faced cement plaster in CM 1.5 25 mm to 35 mm thick in two coats
GL
60 cm
GL
Brickwork 2nd sort in CM 1:6
70 cm
Cement concrete M 75
Section on A-B-C-D
3cm thick polished shahabad in cm 1.4
23 cm
15 cm
60 cm
35 cm
60 cm
45 cm
Murum Filling
15 cm
UCR In CM 1:6
45 cm
65 cm
15 cm
CCM 75
75 cm
Section of wall
W1
Bedroom 3m x 4 m
W2
D
W1
3m x 2.8 m
Kitchen cum Dining room 3.5 m x 3.75 m
60 cm
D1
W1
D2
C
D1
D
W3
D1
D2
D1
Living room 3.5 m x 3.5 m
W2
A
W2
B
D
W2
Bedroom 3m x 4 m
Verandah 2 m wide
30 x 23 cm
Brick column
W1
Plan (Fig 1)

* * *

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

P901

[3667] - 22
S.Y. B.Arch.
THEORY OF STRUCTURE - II
(Yearly 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 answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steel tables is allowed.***
6) ***Assume suitable data, if necessary.***
7) ***In R.C.C. design use M 20 grade concrete and Fe 415 (Tor) grade of steel.***

SECTION - I

Q1) a) Distribution and carry over factor in moment distribution method. **[8]**

b) i) Advantages of welded connection over bolted connection.

ii) Different steel section used in construction. **[8]**

Q2) Design a compression member to carry an axial load of 180 kN and effective span of 2.0 m. Use unequal single angle section. What will be the load carrying capacity of this member in tension. Design a suitable welded connection.**[17]**

Q3) A fixed beam of uniform cross-section has 6m span and carries a UDL of 15 kN/M over its entire span. It is also subjected to a point load of 15kN and 20 kN at a distance of 2.0M and 4.0M from the left support respectively. Determine fixing moments and support reactions. Also draw S.F.D. and B.M.D. **[16]**

Q4) a) A simply supported steel beam carries an udl of 20 kN/m over its entire span including its self weight. Effective span of beam is 5.0m. The compression flanges of beam are having adequate lateral support. Design the steel beam using "I" section. Check the beam for shear and deflection. Assume permissible stress in steel as 165 N/mm^2 in bending and 100 N/mm^2 in shear. **[12]**

b) Explain Flitched Beam with sketches. **[5]**

P.T.O.

SECTION - II

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

a) Necessity of steel in concrete.

b) Types of aches.

c) Different grade and diameter of steel used for R.C.C. work.

d) Difference between One way and Two way slab.

Q6) Design a doubly reinforced beam having size 300 × 550 mm and effective span of 6.0 m. It has to carry UDL of 22kN/m including its self weight. Assume permissible shear stress in concrete as 0.22 N/mm^2. Design the beam for shear and draw longitudinal and transverse section of beam showing reinforcement details. **[17]**

Q7) Design a simply supported reinforced concrete slab for a library building for the following data : **[16]**

a) Clear room dimension 4000 mm × 4000 mm.

b) Width of support = 230 mm.

c) Floor finish load = 0.75 kN/m^2.

d) Live load = 3.50 kN/m^2.

Draw reinforcement details in both directions.

Q8) a) Design a circular column to carry a working load 1200 kN. Use concrete mix M20 and Fe 415 steel. Sketch the reinforcement details. **[12]**

b) State IS provision for main reinforcement of column. **[5]**

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

P902

[3667] - 23
S.Y. B.Arch. (Annual)
HISTORY OF ARCHITECTURE & HUMAN SETTLEMENTS - II

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

Instructions to the candidates:-

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

SECTION - I

Q1) Explain the following terms with reference to their context (any 4) : **[20]**

a) Early Chalukyan Architecture.

b) Gopurams.

c) Mandapas.

d) Parts of a Mosque.

e) Kund.

f) Types of Islamic Arches.

Q2) What are the characteristic features of Dravidian Architecture? Answer with any particular style of Dravidian architecture. **[15]**

OR

"Delhi is known as cities within city". Explain with reference to the Indo-Islamic period.

Q3) Write short notes on (any 3) : **[15]**

a) Compare temple & mosque.

b) A typical Hindu temple.

c) Jain school of architecture.

d) Orissan temple.

e) Provincial pathan school.

P.T.O.

SECTION - II

Q4) Explain the following terms with reference to their context (any 4) : **[20]**

a) Mayan temple pyramid.

b) Mughal gardens.

c) Baroque art.

d) Angkor wat

e) Squinches & stalacties.

f) Sir Christopher Wren's work.

Q5) Write in brief the characteristics of gothic architecture, with illustrated sketches. **[15]**

OR

Discuss the constructional methods & features of Romanesque architecture.

Q6) Write short notes on (any 3) : **[15]**

a) Ball game court.

b) Rustication.

c) Pagoda.

d) Racking arcade.

e) Dome's of Renaissance period.

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Total No. of Questions : 8] **[Total No. of Pages : 4**

P903

[3667] - 33
T.Y. B.Arch.
THEORY OF STRUCTURE - III
(Yearly 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 indicate full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, non-programmable electronic calculator and steel table is allowed.***
6) ***Assume suitable data if necessary.***
7) ***In R.C.C. design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) Design a RCC dog-legged staircase for an office 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 300 mm wide beams at outer edge of landings. Draw neat details of reinforcement.

Q2) Design an isolated and sloping footing for column of size 300 mm × 600 mm carrying an axial load of 950 kN. Assume safe bearing capacity of soil as 280 kN/m^2. Check the footing for two way shear. Draw the reinforcement details. **[17]**

P.T.O.

Q3) a) Check the stability of mass concrete retaining wall for the following data : **[12]**

i) Top width = 600 mm.

ii) Bottom width = 3500 mm

iii) Density of retained earth = 16 kN/m^3

iv) Angle of repose = 30°.

v) Coefficient of friction = 0.5.

vi) Safe bearing capacity of soil = 300 kN/m^2.

b) Design the stem of a retaining wall as shown in the figure - 1 Assume following data : **[5]**

i) Density of retained earth = 17 kN/m^3.

ii) Angle of repose = 30°.

iii) Coefficient of friction = 0.5.

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

Draw detailed reinforcement diagram for the stem.

Q4) Write short notes on (any 3) : **[16]**

a) Types of retaining wall.

b) Shear key in retaining walls.

c) Raft foundation.

d) Flat slab.

e) Friction Pile.

SECTION - II

Q5) a) Design a purlin for a factory building for a roof truss for the following data : **[8]**

i) Span of Truss = 12m

ii) Spacing of Truss = 4m c/c.

iii) Slope of the roof = 25°.

iv) Spacing of Purlins = 1.8m c/c.

v) Wind Pressure = 1.2 kN/m^2.

vi) Roof Coverage = G.I sheets of weight 0.5 kN/m^2.

Use unequal angle section.

b) A prestressed concrete beam of overall size of 300 × 600 mm is simply supported over a span of 7m. The beam carries a UDL of 22 kN/m over entire span inclusive self weight. The beam is prestressed with a prestressing force of 1000 kN. The prestressing tendons are located at an eccentricity of 50mm. Calculate the extreme fiber stresses in the beam at mid span. **[8]**

Q6) a) Explain the following terms : **[17]**

i) Sections of compound column and Lacing system.

ii) Advantages of Prestressed concrete over R.C.C.

b) Explain combined footing and types of combined footing with neat sketches.

Q7) Design a compound stanchion for a factory building consisting 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 4.5m with both ends fixed. Design a suitable batten system.**[17]**

Q8) Write short notes on (any 3) : **[16]**

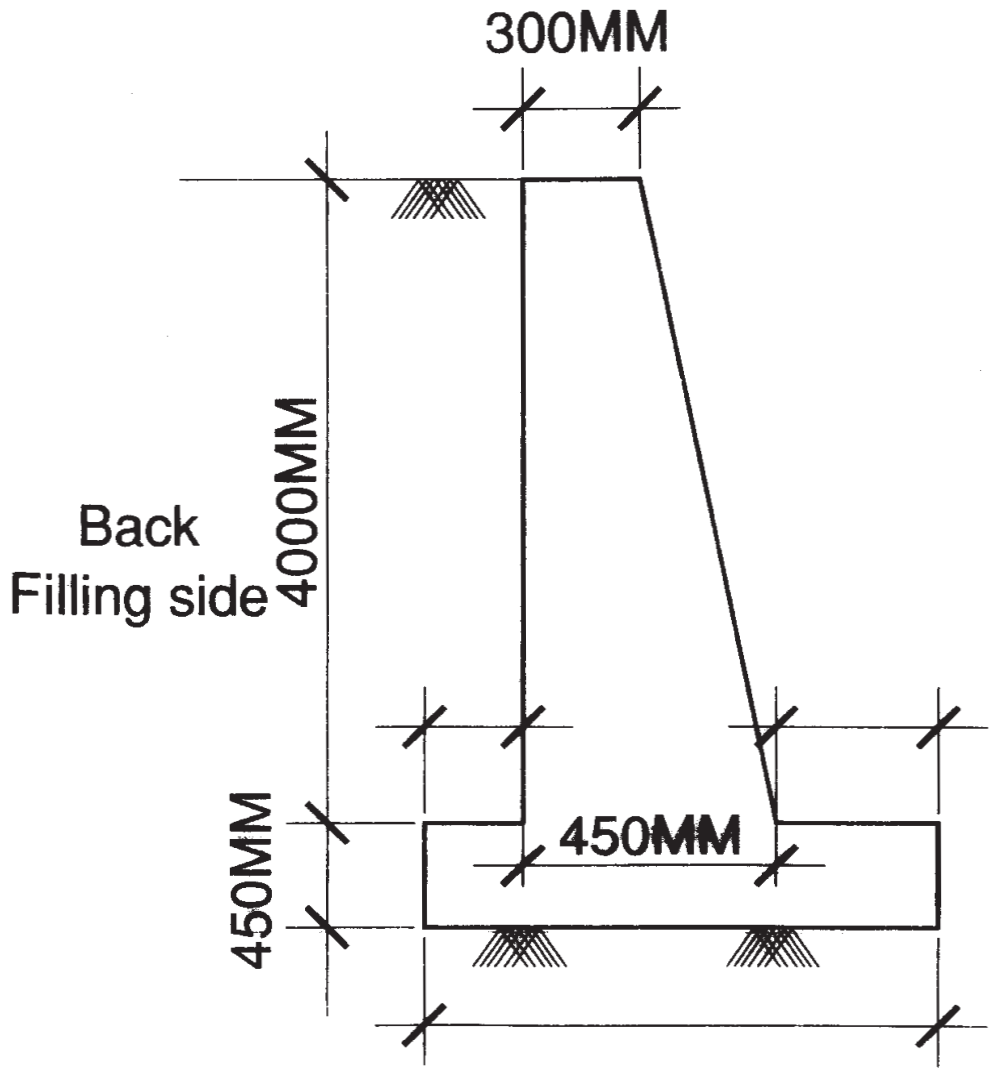
a) Safe bearing capacity (S.B.C.).

b) Earthquake Resistant Structure.

c) Limit state Method.

d) High rise buildings.

Q.No.3(b). (fig-1)



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

P904

[3667] - 2001
S.Y. B.Arch. (Interior Design)
THEORY OF STRUCTURE - II

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 answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steel tables is allowed.***
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7) ***In R.C.C. design use M 20 grade concrete and Fe 415 (Tor) grade of steel.***

SECTION - I

Q1) a) Distribution and carry over factor in moment distribution method. **[8]**

b) i) Advantages of welded connection over bolted connection.

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b) Explain Flitched Beam with sketches. **[5]**

P.T.O.

SECTION - II

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Use M20 and Fe 415.

Q7) Design a simply supported reinforced concrete slab for a library building for the following data : **[16]**

a) Clear room dimension 4000 mm × 4000 mm.

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d) Live load = 3.50 kN/m^2.

e) M20 grade of concrete and Fe 415 steel.

Draw reinforcement details in both directions.

Q8) a) Design a circular column to carry a working load 1200 kN. Use concrete mix M20 and Fe 415 steel. Sketch the reinforcement details. **[12]**

b) State IS provision for main reinforcement of column. **[5]**

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Total No. of Questions : 8] **[Total No. of Pages : 4**

P905

[3667] - 3001
T.Y. B.Arch. (Interior Design)
THEORY OF STRUCTURE - III
(Yearly Pattern)

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

Instructions to the candidates:

1) ***Answer any three 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 is allowed.***
6) ***Assume suitable data, if necessary.***
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SECTION - I

Q1) Design a RCC dog-legged staircase for an office building for the following data : **[16]**

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P.T.O.

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ii) Bottom width = 3500 mm

iii) Density of retained earth = 16 kN/m^3

iv) Angle of repose = 30°.

v) Coefficient of friction = 0.5.

vi) Safe bearing capacity of soil = 300 kN/m^2.

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Draw detailed reinforcement diagram for the stem.

Q4) Write short notes on (any 3) : **[16]**

a) Types of retaining wall.

b) Shear key in retaining walls.

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e) Friction Pile.

SECTION - II

Q5) a) Design a purlin for a factory building for a roof truss for the following data : **[8]**

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iv) Spacing of Purlins = 1.8m c/c.

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vi) Roof Coverage = G.I sheets of weight 0.5 kN/m^2.

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Q7) Design a compound stanchion for a factory building consisting 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 4.5m with both ends fixed. Design a suitable batten system.**[17]**

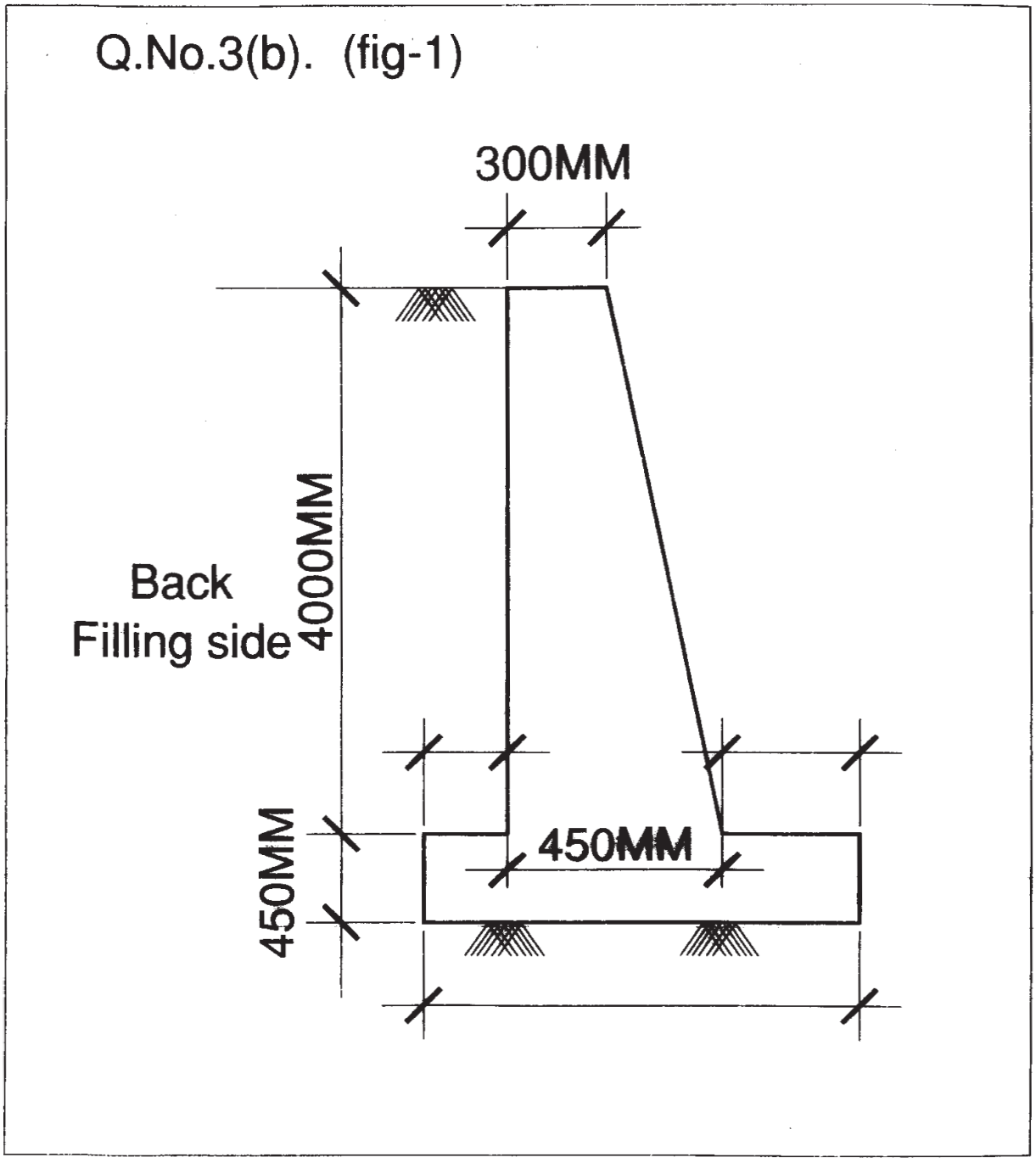
Q8) Write short notes on (any 3) : **[16]**

a) Safe bearing capacity (S.B.C.).

b) Earthquake Resistant Structure.

c) Limit state method.

d) High rise buildings.


Q.No.3(b). (fig-1)
300MM
4000MM
Back
Filling side
450MM
450MM

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Total No. of Questions : 8] **[Total No. of Pages : 4**

P908

[3667]-12
F.Y. B. Arch. (Annual)
THEORY OF STRUCTURES - I
(2003 Pattern) (113424)

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 different systems of forces with suitable practical examples and with proper sketches. **[6]**

b) A body subjected to a coplanar force system as shown in Figure 1.b. Find the magnitude, direction and point of application of resultant from point A **[10]**

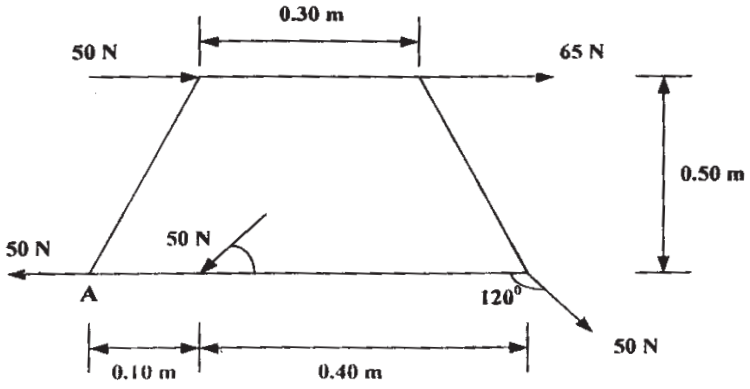


Figure 1.b

Q2) a) Explain different types of supports for a beam. **[4]**

b) Explain Lami's theorem. **[2]**

P.T.O.

c) Find the reaction for the beam shown in Figure 2.c **[10]**

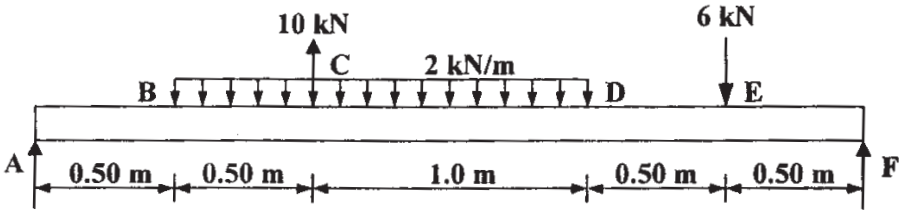


Figure 2.c

Q3) a) Find the moment of inertia for the figure given in Figure 3.a **[8]**

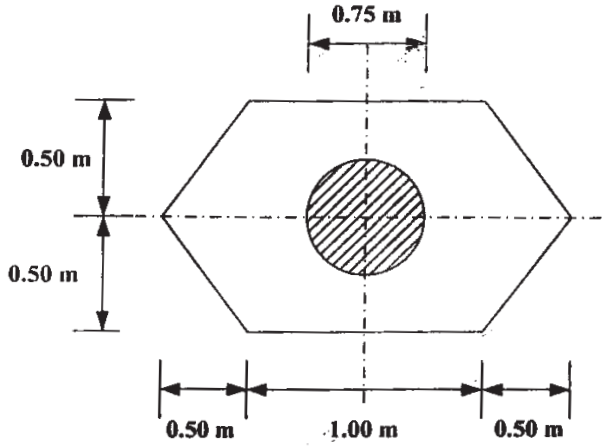


Figure 3.a

b) Draw the SFD and BMD for the beam shown in Figure 3.b **[8]**

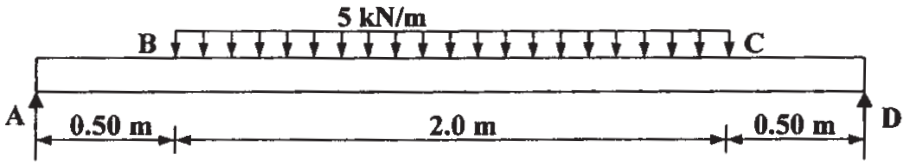


Figure 3.b

Q4) a) Explain **[8]**

i) Stress and strain.

ii) Modulus of elasticity.

iii) Poisson's ratio.

b) Find maximum stress and elongation of the rod subjected to forces as shown in Figure 4.b. Take E = 2×10^5 N/mm^2. **[10]**

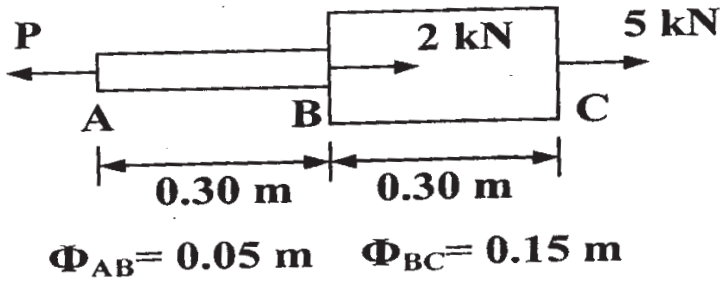


Figure 4.b

SECTION - II

Q5) a) Explain the terms used in the formula to find shear stress at a section in the beam subjected to transverse loading. Draw the shear stress distribution diagram for rectangular section and write the relation between the maximum and average shear stress. **[6]**

b) Draw the bending stress distribution diagram for the mid span section for a beam loaded as shown in Figure 5.b. The section of the beam is rectangular with width equal to 230 mm and depth 350 mm. **[10]**

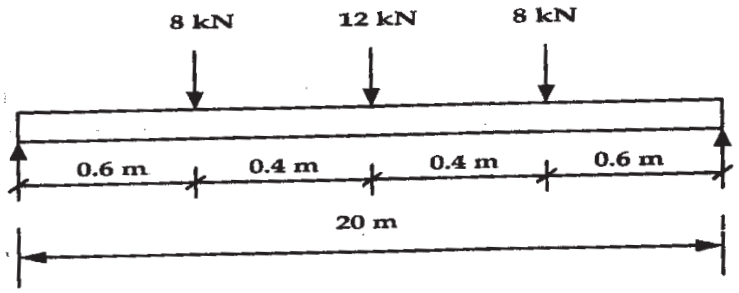


Figure 5.b.

Q6) a) Find the deflection at C for the beam shown in Figure 6.a. using double integration method. **[10]**

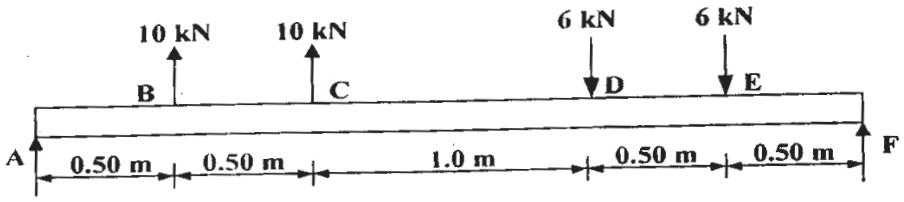


Figure 6.a.

b) Find the forces in the members of the truss shown in Figure 6.b **[8]**

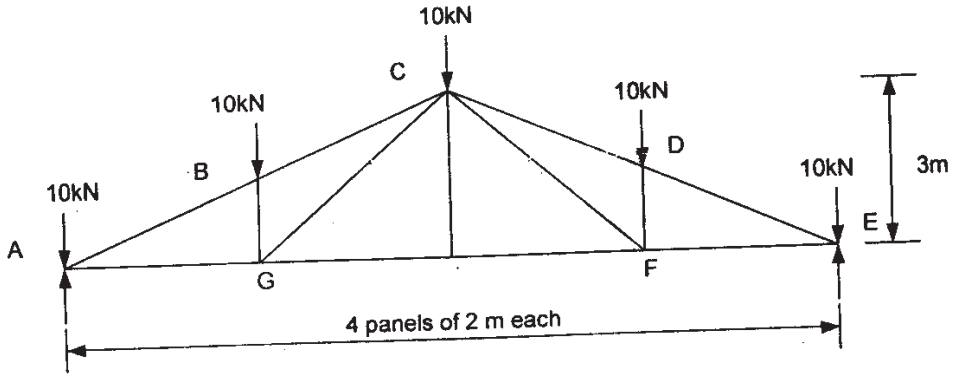


Figure 6.b.

Q7) a) Explain statically determinate and indeterminate structures with proper examples and sketches. **[6]**

b) Obtain the centroid with respect to the origin for the lamina given in Figure 7.b **[10]**

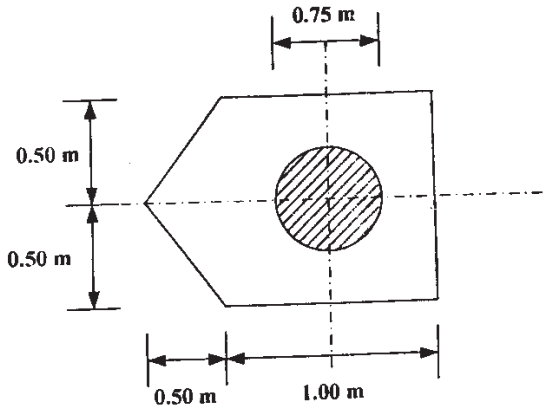


Figure 7.b.

Q8) a) Explain core of a section with reference to no tension condition. **[6]**

b) Find the stress at all the corners of the column section shown in Figure 8.b. The column is carrying a vertical load of 1000 kN at point P. **[10]**

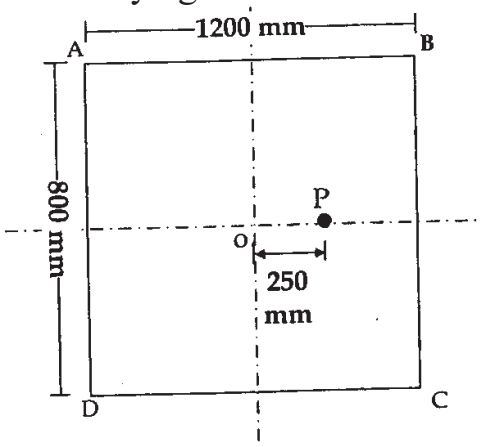


Figure 8.b.

P909

[3667] - 31
T.Y. B.Arch. (ID)
ARCHITECTURAL AND INTERIOR DESIGN - III

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 programme centre

An organization based in Pune working in Youth Welfare, wishes to construct a facility near Pune to hold camps for youth. The centre will hold summer and winter camps of up to a weeks duration and occasional day long events.

Design Brief

Indoor Areas

1.	Entrance Lobby (Waiting Hall) with Reception Desk	50 Sqm
2.	Administration Office	30 Sqm
3.	Classrooms: 2 Nos, 40 Sqm Each No of students per classroom 20	80 Sqm
4.	Staff Room with Toilet	25 Sqm
5.	Audiovisual room with Projection Facility	75 Sqm
6.	HVAC Room, Electrical Room and Store : 15 Sqm Each	45 Sqm
7.	Dormitories for boys and girls @ 120 Sqm Each	240 Sqm
8.	Toilets attached to Dormitories 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

P.T.O.

Other Areas

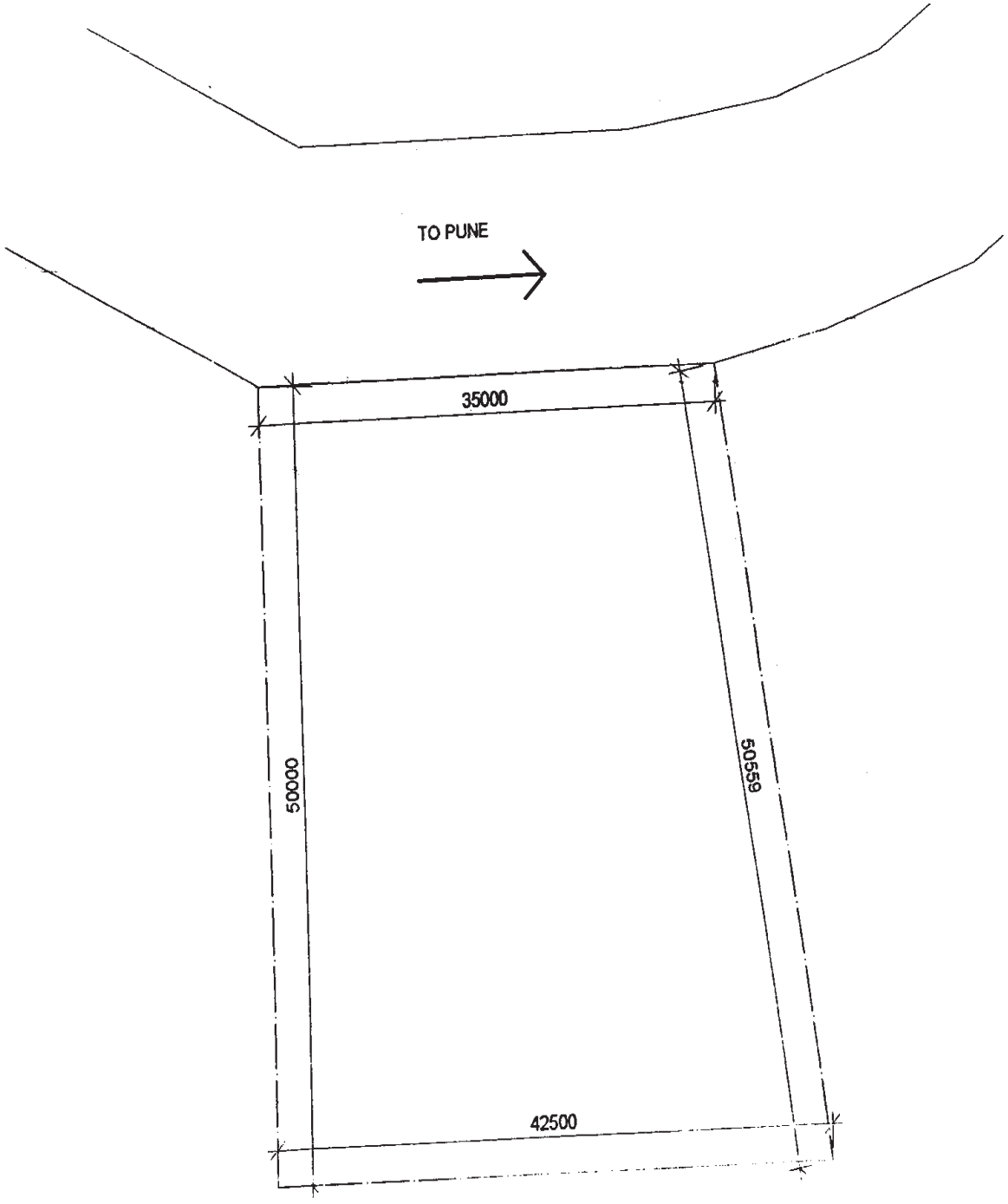
1.	Security Cabin	Adequate
2.	Parking for 10 Cars, 20 Two wheelers	Adequate
3.	Open air Amphitheatre	For 100 persons

Site Parameters

1	Setback from roadside	6.0 m
2	Setback from other 3 sides	4.5 m
3.	Max. Ground Coverage	1/3rd of plot Area
4.	Permissible FSI	1.00
5.	Plot Area	1937.5 Sqm
6.	No structure should be more than G+1 Floors in Height	

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.	Dormitory plan with furniture layout and with a list of materials and finishes to be used	1:50
6.	Perspective view of the Dormitory.	


TO PUNE
35000
50000
50559
42500


4 2 0
10 M.
5 3 1
5 M.
15 M.
NORTH

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Total No. of Questions : 8] **[Total No. of Pages :5**

P910

[3667] - 1001
F.Y.B. Arch. (Interior Design)
THEORY OF STRUCTURES - I
(113424) (2003 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 indicate full marks.***
5) ***Use of electronic calculator is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Explain different systems of forces with suitable practical examples and with proper sketches. **[6]**

b) A body subjected to a coplanar force system as shown in Figure l.b. Find the magnitude, direction and point of application of resultant from point A **[10]**

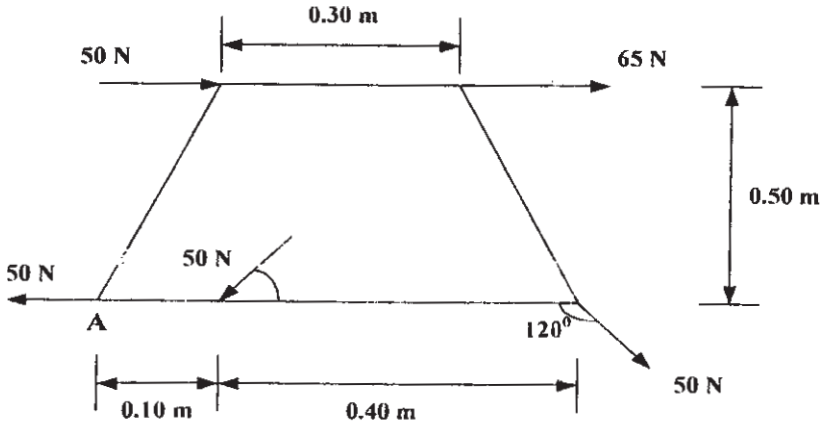


Figure 1.b

Q2) a) Explain different types of supports for a beam. **[4]**

b) Explain Lami's theorem. **[2]**

P.T.O.

c) Find the reaction for the beam shown in Figure 2.c **[10]**

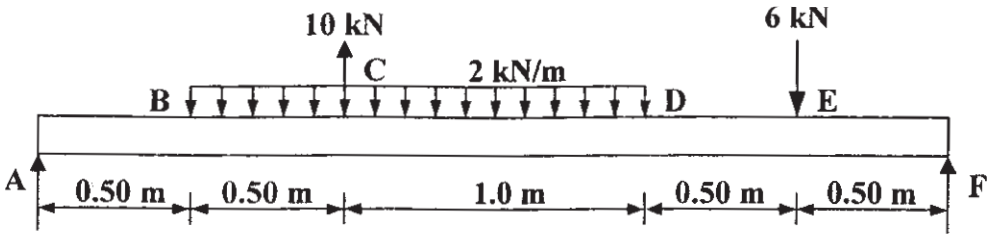


Figure 2.c

Q3) a) Find the moment of inertia for the figure given in Figure 3.a **[8]**

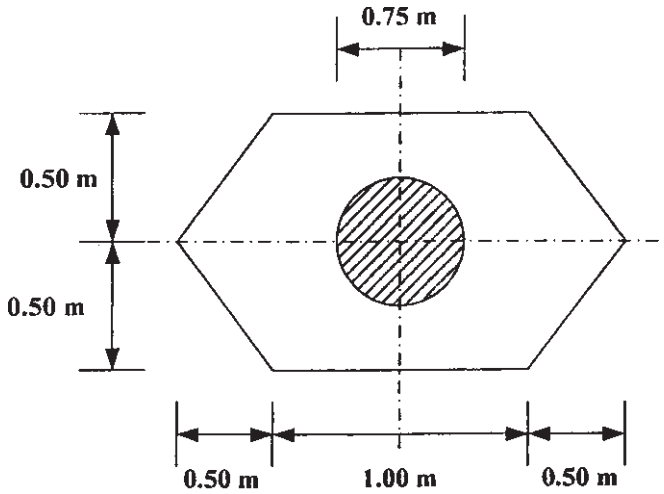


Figure 3.a

b) Draw the SFD and BMD for the beam shown in Figure 3.b **[8]**

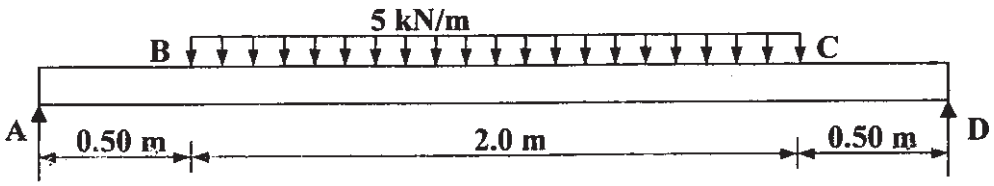


Figure 3.b

Q4) a) Explain **[8]**

i) Stress and strain

ii) Modulus of elasticity

iii) Poisson's ratio

b) Find maximum stress and elongation of the rod subjected to forces as shown in Figure 4.b. Take E = 2 X 10^5 N / mm^2 **[10]**

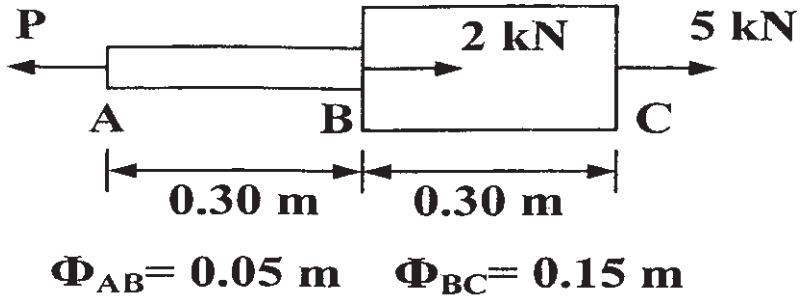


Figure 4.b

SECTION - II

Q5) a) Explain the terms used in the formula to find shear stress at a section in the beam subjected to transverse loading. Draw the shear stress distribution diagram for rectangular section and write the relation between the maximum and average shear stress. **[6]**

b) Draw the bending stress distribution diagram for the mid span section for a beam loaded as shown in Figure 5.b. The section of the beam is rectangular with width equal to 230mm and depth 350mm. **[10]**

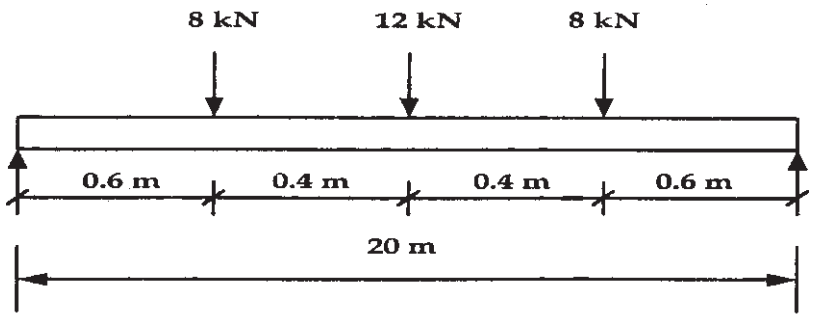


Figure 5.b.

Q6) a) Find the deflection at C for the beam shown in Figure 6.a. using double integration method **[10]**

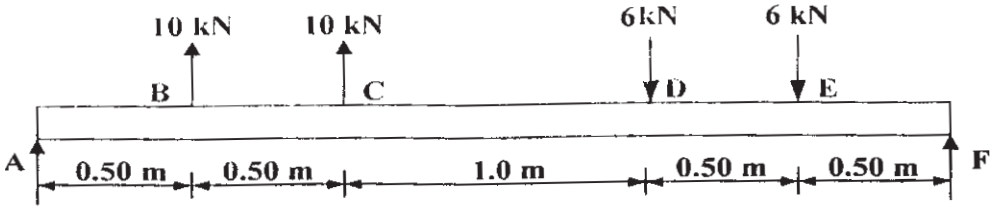


Figure 6.a.

b) Find the forces in the members of the truss shown in Figure 6.b **[8]**

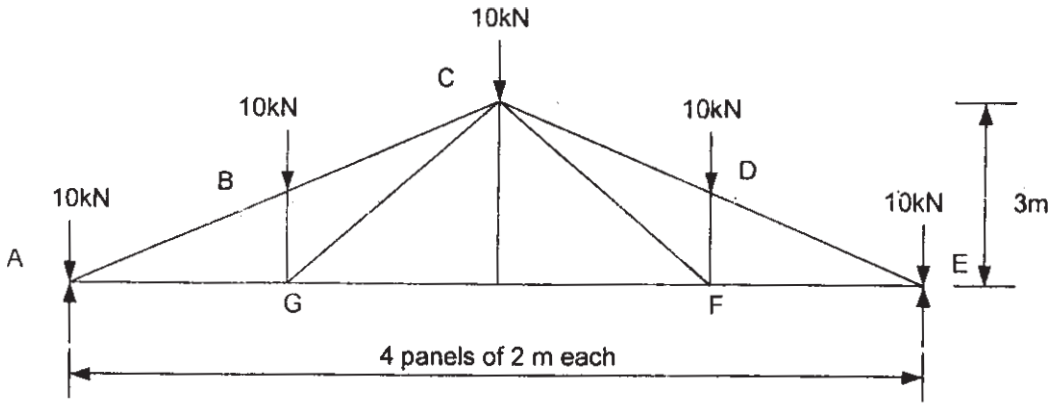


Figure 6.b.

Q7) a) Explain statically determinate and indeterminate structures with proper examples and sketches. **[6]**

b) Obtain the centroid with respect to the origin for the lamina given in Figure 7.b **[10]**

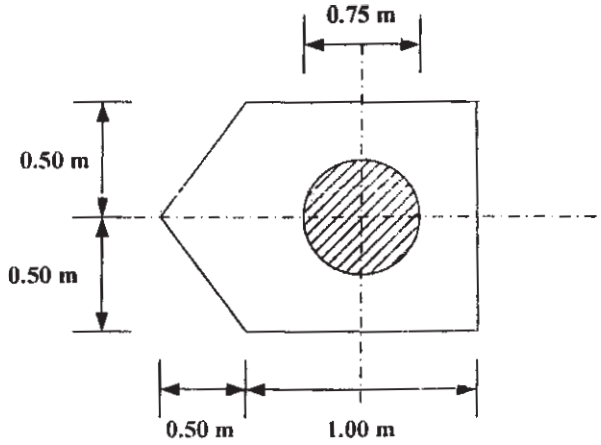


Figure 7.b.

Q8) a) Explain core of a section with reference to no tension condition. **[6]**

b) Find the stress at all the corners of the column section shown in Figure 8.b. The column is carrying a vertical load of 1000 kN at point P. **[10]**

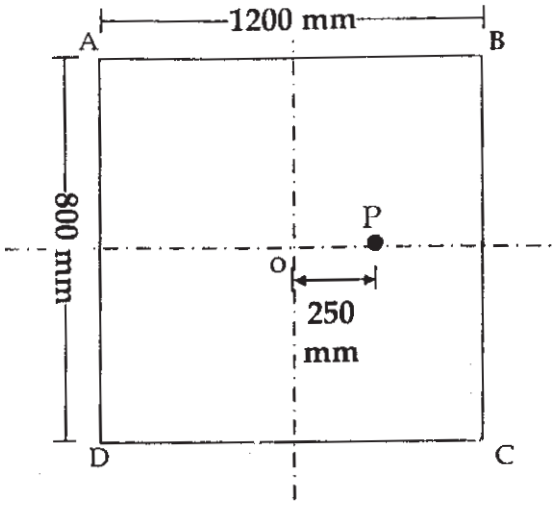


Figure 8.b.

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

P911

[3667] - 2004
S.Y. B.Arch.
ARCHITECTURAL GRAPHICS, SKILLS MANUAL AND COMPUTERS - II
(Interior Design) (213485)

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

Instructions to the candidates:-

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Assume suitable data, if necessary.***
3) ***All questions are compulsory.***

Q1) Draw perspective view :

a) Shown in Fig. No. 1 is a kitchen cum dining. **[30]**
Draw a view of the given room using any projection method or measuring point method to the scale 1:10.

b) Render the view in any medium. **[10]**

c) Draw a presentable drg. with all interior elements along with human fig. **[20]**

[Total marking scheme a + b + c = 60 marks]

Given :

Station point = 3500	Lintel = 2100
Eye lvl = 2000	Door D = 1500 × 2100
Scale = 1:10	D_1 = 900 × 2100
Windows W = 1000 × 900	W_1 = 1800 × 1800

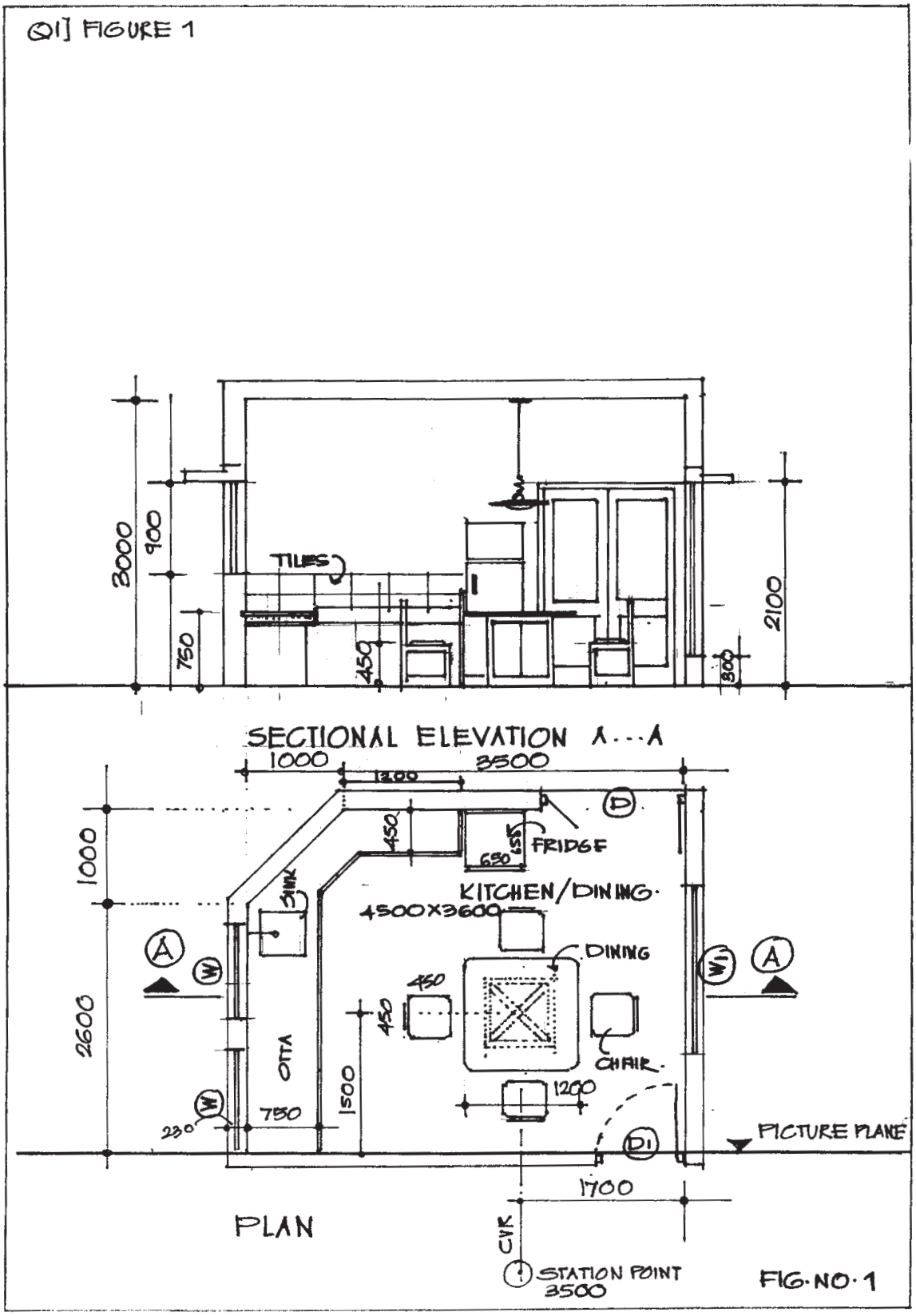
Q2) Show shades and shadows

a) Figure No. 2 shows plan and front elevation of an object. Draw an isometric view of the object to scale 1:1. **[20]**

b) Show Shades and Shadows as the case may be on the plan and elevation of the object is placed on the ground and 45 mm away from v.p. give colour wash to shades and shadows. **[20]**

[Total marking scheme a + b = 40]

P.T.O.


Q1] FIGURE 1
3000
900
750
450
300
2100
TILES
SECTIONAL ELEVATION A...A
1000
1200
3500
1000
2600
450
650
FRIDGE
SINK
KITCHEN/DINING
4500X3600
DINING
CHAIR
OTTA
1500
750
230
1200
1700
PICTURE PLANE
PLAN
CVR
STATION POINT
3500
FIG·NO·1

Q2] FIGURE 2

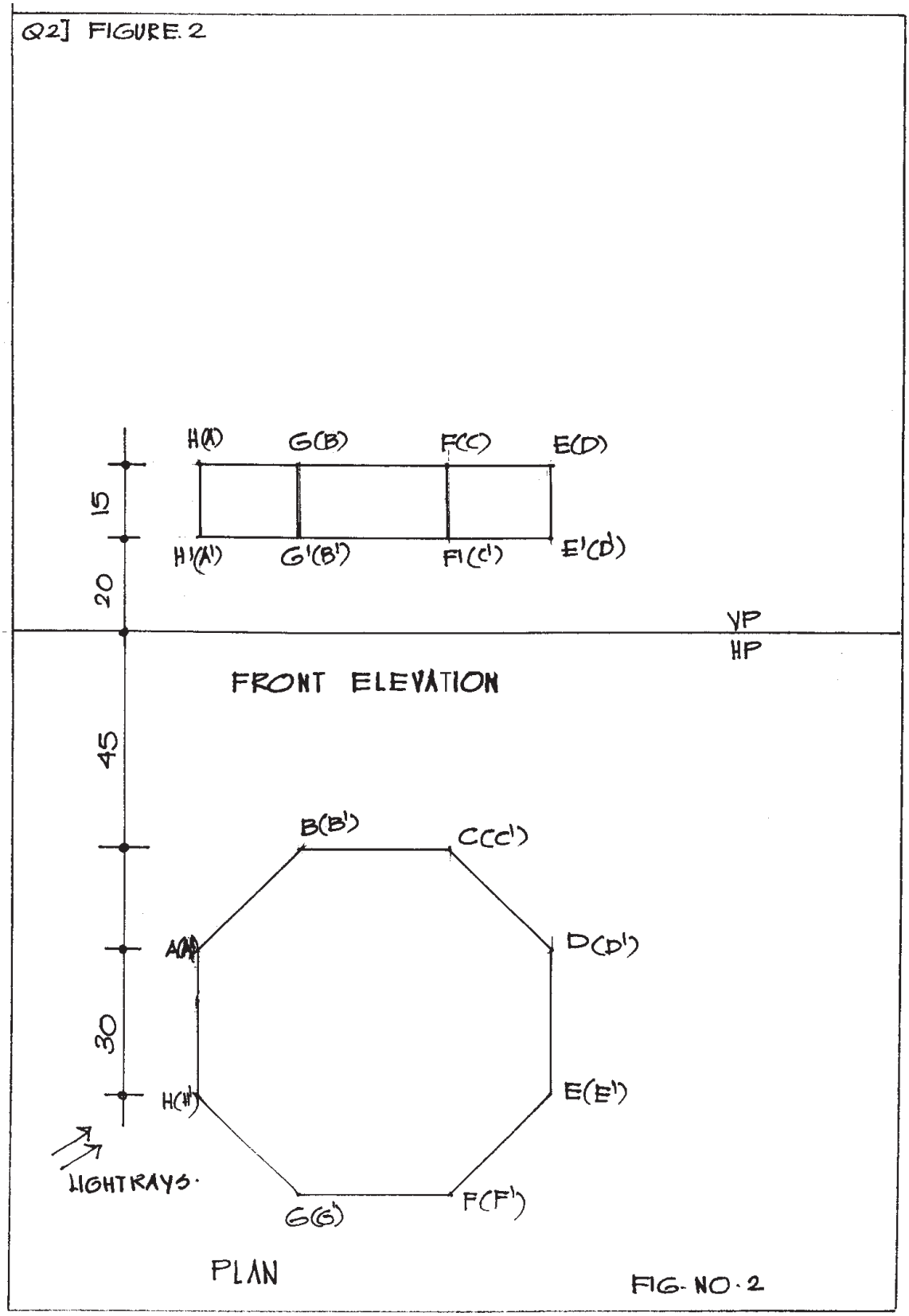


FIG. NO. 2

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

P922

[3667]- 42
Fourth Year B.Arch.
BUILDING CONSTRUCTION AND MATERIALS - IV
(Annual 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) Draw plan and section to a scale of 1:100 and two important constructional details to a scale of 1:20 of a swimming pool of size 25m × 10m. Also show the necessary services. **[30]**

Q2) An industrial shed of overall size 10.00m × 15.0m is to be constructed for a mechanical engineer, using steel/R.C.C frame and appropriate roofing. Clear height required is 5.0m from finished floor level. Good light, ventilation and rain water disposal system should be incorporated. Draw framing plan and section to the scale of 1:50 and enlarged details to a suitable scale showing roofing truss, lighting, ventilation and rain water disposal details. **[30]**

Q3) A cinema theatre is to be constructed having overall size of 58.0m × 22.0m. A fully cantilever balcony of size 10m × 22.0m is proposed to be constructed. Draw a framing plan and section through the balance to a suitable scale showing all the relevant construction details. **[30]**

SECTION - II

Q4) Write brief notes with neat sketches (any five) : **[40]**

a) Typical housing colony road section with basic terminology and surface water drainage details.
b) Expansion joints and its necessity.
c) Fire resisting construction details.
d) Any two heat and sound insulating materials.
e) Raking and flying shores.
f) Space frames.
g) Any two structural systems used in high rise buildings.
h) Systems of curtain walling.

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

P926

[3667] - 51
Fifth Year B.Arch. (Annual Pattern)
PROFESSIONAL PRACTICE I & II

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

Instructions to the candidates:-

1) ***First question of Section - I & 5th question of Section - II are compulsory.***
2) ***Out of remaining attempt any two questions from section - I & one question from Section - II***
3) ***Answers to the two sections should be written in separate books.***
4) ***Figures to the right indicate full marks.***
5) ***All questions carry equal marks.***

SECTION - I

Q1) Discuss the set up of Architect's office & elaborate upon the following (any three) : **[20]**

a) Company formation.

b) Registrations.

c) Taxes to be paid to various government departments by Architects / Architectural firm.

d) Securing at servicing clientage.

Q2) a) Discuss Easements Rights, Type of Easement & how they affect the value of the property. **[10]**

b) Explain the difference between value price & cost. Define market value highlighting its characteristics. **[10]**

Q3) a) Explain Dilapidations & how to go about repairs. **[8]**

b) Comment upon the following (any four) : **[12]**

i) Client is requesting you to take up an ongoing project without the consent of the Architect already executing the project.

ii) Client requests you to take part in the competition not approved by the COA.

iii) You decide not to pay renewal fees of COA & IIA.

iv) Corporation decides to construct a crematory opposite the river facing plot of your client.

v) Contractor wants you to certify extra items executed in the tender.

P.T.O.

Q4) a) Why are Architectural competitions conducted? **[20]**

b) What are the types in which they can be conducted?

c) Explain the procedure laid down by COA for two stage competition.

SECTION - II

Q5) What is tender? Briefly discuss various ways in which tendering can be done, stating advantage vis a vis disadvantages; also highlight the characteristics of an Item Rate Tender. **[20]**

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

a) Actual & Virtual competition.

b) EMD (Earnest Money Deposit) & SD (Security Deposit).

c) DLP (Defects Liability Period) & Penalty/Bonus.

d) Insurance policies in a contract.

e) Liquidated damages.

Q7) a) What are Articles of Agreement? What's the role of Architect in the execution of Agreement? **[11]**

b) Write short notes on (any three) : **[9]**

i) Architect's instructions.

ii) Clerk of works.

iii) Contract Document.

iv) Pre qualification of contractors.

Q8) a) What is Arbitration? When was Arbitration Act framed? How does that help in sorting out disputes during/after construction/explain. **[8]**

b) Write short notes on (any four) : **[12]**

i) Sole Arbitrator.

ii) Umpire.

iii) Award.

iv) Arbitration proceedings.

v) Quasi Judicial Arbitration.

vi) Role of Architect in Arbitration.

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