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

P766 **[3767] - 32**

T.Y. B.Arch.

BUILDING CONSTRUCTION & MATERIALS - III

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

Instructions to the candidates :

1) ***Answer two questions from Section I and one question from Section II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Q1) A suspended ceiling in T.W/G.I, is to be provided for an office of size 4.0 m x 3.0 m, with a clear height of 3.0 m. Draw a reflected ceiling plan and section to the scale of 1 : 20. Also draw any three enlarged details to the scale of 1 : 5. **[30]**

Q2) Draw plan and section showing reinforcement details of a straight flight stringer beam staircase of 3.0 m width and floor height 2.10 m to the scale 1 : 20. Also draw railing fixing details and tile fixing details to finish the tread and riser to a suitable scale. **[30]**

Q3) Explain with neat sketches (Any Three) :

a) Stub column & stanchion fixing.
b) Types of pile foundations, any three.
c) Reinforced brick work.
d) Types of lifts.
e) Bay window and its advantages.
f) Any two roofing systems developed by C.B.R.I. **[30]**

SECTION - II

Q4) Write short notes with neat sketches (any five)

a) Raft foundation.
b) Method of polishing new wood-work.
c) Guniting and its uses.

P.T.O.

d) Stainless steel and its uses in the building industry.

e) Terminology of retaining wall.

f) Types of glass & its uses. **[40]**

OR

Q5) Explain the difference between (Any four)

a) Dense concrete and light weight concrete.

b) R.C.C. balcony and Canopy.

c) Spine beam and castellated beam.

d) Cohesive soil and non-cohesive soil.

e) Methods of water-proofing and damp proofing.

f) Painting of wood and painting of steel. **[40]**

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

P767 **[3767] - 34**

T.Y. B.Arch.

BUILDING SCIENCE & SERVICES - II

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 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.

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.

P.T.O.

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.

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

P845

[3767] - 42
Fourth Year B.Arch.
BUILDING CONSTRUCTION & MATERIALS - IV
(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 workshop of size 25 m x 50 m is to be provided in an institute of technology for the mechanical engineering department. The minimum height of working space required for the same is 6 m. Design an appropriate roofing system giving details of natural lighting, ventilation and rain water drainage to any appropriate scale, with plan and section at a scale of 1:200. **[30]**

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

a) Rectangular and diagonal grid coffered slab.

b) Overflow channel details for a swimming pool.

c) Short and long span barrel vaults.

d) Types of shoring.

SECTION - II

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

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

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

P.T.O.

c) Any one system of curtain walling.

d) RCC Vault north light details.

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

f) Hyperbolic Para bolides.

g) Use of skimmer units for swimming pools.

h) Construction of diaphragm retaining walls for multi basements.

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

P855

[3767] - 23
S. Y. B.Arch. (Annual)
HISTORY OF ARCHITECTURE & HUMAN SETTLEMENT - II

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 separate sheets.***
3) ***Figures to the right indicate full marks.***
4) ***Draw neat sketches wherever necessary.***

SECTION - I

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

a) Orissan Temples.

b) Planning & features of Gupta Temples.

c) Dravidian Architecture.

d) Mughal Gardens.

e) Planning & features of Late Chalukyan Temples.

f) Parts of a Mosque.

Q2) Discuss about the features of a typical Hindu Temple Complex, with an example of any temple in detail with the help of relevant sketches. **[10]**

OR

Explain the characteristic features of Islamic Architecture & the methods of Dome support in Indo-Islamic Architecture.

Q3) Write Short Notes on : (ANY THREE) **[15]**

a) Shikhars.

b) Evolution of Gopurams.

c) Squinches & Stalactite.

P.T.O.

d) Chaumukh Temple.

e) Bengal Temples.

f) Gol Gumbaz at Bijapur.

SECTION - II

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

a) Mayan Ball Game Court.

b) Machu Picchu.

c) Palladian Villa.

d) Raking Arcade.

e) Rib & Panel Vaulting.

f) Triforium.

Q5) Discuss about the characteristic features of Renaissance Period with suitable example. **[10]**

OR

Explain the characteristic features of Gothic Architecture with suitable example.

Q6) Write Short Notes on : (ANY THREE) **[15]**

a) Mayan Temples.

b) Baroque Architecture.

c) Angkor Wat.

d) Chinese Temples.

e) Japanese Gardens.

f) Pinnacle.

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

P1583

[3767]-1162
M. Arch. (Computer Applications)
CA 103 : FUNDAMENTALS OF COMPUTER GRAPHICS
(2008 Course) (613403)

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

Instructions to the candidates:

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

SECTION - I

Q1) a) What are various methods/algorithms to draw a line? Explain any one of them in brief. **[7]**

b) Explain Bresenham circle drawing algorithm with suitable example. **[6]**

Q2) a) How a character is generated? Explain at least one method with suitable example. **[6]**

b) Explain BMP file format briefly. **[6]**

Q3) a) Give the transformation matrix if an object in 2D is scaled by 2 units in *x* and *y* direction, rotated about Y-axis by 30 degree. **[6]**

b) Explain rotation of 3D object about an axis parallel to X axis. **[6]**

Q4) Explain Warnock and painters algorithm for hidden surface. **[12]**

Q5) a) What is the need for clipping? Explain line clipping algorithm. **[7]**

b) What is polygon? Explain any one method for polygon filling. **[6]**

SECTION - II

Q6) a) How polygon shading is different from polygon filling? Explain Phong shading algorithm with suitable example. **[6]**

b) Explain diffuse illumination. **[6]**

P.T.O.

Q7) Write brief note on : Transparency, Reflection and shadows. **[12]**

Q8) a) Explain CRT display and controllers. **[6]**

b) How vector scan and raster scan displays are different? Explain. **[6]**

Q9) a) Explain the computer graphics applications in animation. **[7]**

b) What are fractals? Explain fractal surfaces. **[6]**

Q10) What is the need of graphics standards? Explain GKS and PHIGS. **[13]**

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

P762

[3767] - 11
F. Y. B. Arch.
BUILDING CONSTRUCTION AND MATERIALS - I
(Annual 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) *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 wherever necessary.*

SECTION - I

Q1) A timber stair of 1000mm clear width is to be provided for a mezzanine floor in a shop. The top height of the mezzanine floor is 2100mm.

Draw framing plan and longitudinal section of the stair to scale 1:20. **[30]**

Q2) A ledged braced and battened door is to be provided for a clear opening of size 950mm x 2150mm in one brick thick wall.

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

Draw detail of joint between bottom ledge and brace to scale 1:5. **[30]**

Q3) Draw neat details to suitable scale for any three out of the following : **[30]**

a) Different types of Arches.

b) Detail part plans of alternate courses of T junctions in one and half brick thick wall.

c) Sketch the different types of roofs with nomenclature and sizes.

d) Draw neat and proportionate sketches with names of any five types of hardware used in timber door.

e) Cross section through the foundation and compound wall 2.5m high (one brick thick wall).

P.T.O.

SECTION - II

Q4) Write short notes with proportionate sketches wherever necessary. (Attempt any five subquestions) : **[40]**

a) Types of timber floors based on support system.

b) Advantages of hollow concrete block masonry.

c) Strip foundation.

d) Slaking of lime.

e) Qualities of good brick.

f) Defects in timber.

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

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

P763

[3767] - 21
S.Y. B.Arch.
BUILDING CONSTRUCTION AND MATERIALS - II
(2003 Pattern) (Annual)

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

Instructions to the candidates:

1) ***Answers to sections should be to be written on separate sheets.***
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 M.S window is to be provided for an out house constructed out of 230mm thick brick masonry for an opening size of 1500 × 1200 mm. Draw plan, section and elevation to a suitable scale and enlarged details @sill level and fixing of glass panel. Sill level : 900 mm from finished floor level. **[20]**

OR

An outdoor canteen of size 3500 × 5000 mm is to be provided with a RCC slab. The slab is supported on four columns of size 230 × 450 mm. Draw the plan showing reinforcement and section through the slab and the beam showing reinforcement details.

Q2) A cavity wall construction is to be constructed for a farmhouse in brick masonry. Sketch section through cavity wall showing details at plinth level, sill level, lintel level, parapet level. **[20]**

OR

An office is to be provided with a partly glazed and partly paneled teak wood door. The size of opening is 1000 × 2100 mm located within one brick wall plastered on both sides. Draw plan, elevation and section to the scale of 1:10. Draw detail to the scale of 1:2.

a) Fixing of glazed panel.

b) Rail and stile.

P.T.O.

Q3) Draw proportionate and labeled sketches of the following (any 4) : **[20]**

a) T.W window frame and Transome joint.

b) Gutter detail for T.W truss.

c) M.S side hung gate fixing details.

d) Fixing of G.I. sheets to wooden truss.

e) Detail of concrete block masonry T junction

f) Fixing of chain link fencing to support.

SECTION - II

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

a) Soil stabilized mud blocks.

b) Any two defects in plastering.

c) Domes in masonry construction.

d) Forms of structural steel.

e) Bulb of pressure and its significance.

f) Flush doors.

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

a) Wall ties in cavity wall.

b) Eccentric footing.

c) Mullion.

d) Stirrups.

e) Bulking of sand.

f) Ferro crete.

g) Two way slab.

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

a) Cement is tested for a period of _____days to achieve the desired strength.

i) 7days

ii) 21 days

iii) 28 days

b) A toothed plate connector is used in

i) Collapsible gate

ii) Slab

iii) built up truss

c) Epicentre is_____

i) Point inside the earth at which earthquake or slip starts.

ii) Point on the surface of earth vertically above the origin of slip.

iii) Point on the surface of earth at a distance from origin where damage was maximum.

d) Adobe is_____

i) Earth used for making unburnt, sun baked bricks or blocks containing straw as reinforcement.

ii) Quick hardening gypsum plaster.

iii) Low density fibre board.

e) Cover in formwork_____

i) It is an additional safety for reinforcement.

ii) It is the space between reinforcement and shuttering.

iii) It required as an earthquake resistant feature.

Q7) Match the following with the correct option : **[5]**

a)	Scarfing Joint	Damp Proofing
b)	Sash Bar	Flooring
c)	I.P.S	Brickbats
d)	Asphalt	Timber Truss
e)	Surkhi mortar	Window

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

P764

[3767]-24
S.Y. B.Arch.
BUILDING SCIENCE AND 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) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***All questions are compulsory.***

SECTION - I

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

a) What is a valve? Explain with neat sketches different types of valves used in water supply system. Mention their locations in the system.

b) Explain with neat sketches different types of traps used along with soil and waste fittings. Describe their working along with its location with reference to the fittings.

c) Explain working of a septic tank with neat labelled sketch mentioning its salient parts.

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

a) Pumps used in water supply.

b) Joinery detail in R.C.C. pipes.

c) Disconnecting chamber.

d) Auto-pneumatic system.

e) Flushing cistern.

f) Rain water harvesting.

SECTION - II

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

a) What are different types of wiring systems used for artificial illumination system? Explain with necessary sketches.

P.T.O.

b) Explain Lumen method to find out the required number of luminaires in an interior. What are the factors which affect the same.

c) Explain direct and indirect system of hot water supply.

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

a) Daylight Factor.

b) Earthing.

c) Types of luminaires.

d) Garbage chute.

e) Fluoroscent Lamp.

f) A Bio-gas plant.

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[Total No. of Pages :3

P765

[3767] - 31
T. Y. B. Arch. (Annual)
ARCHITECTURAL DESIGN - III
(2003 Pattern) (General)

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

Instructions to the candidates:

1) ***The design will be valued as a whole.***
2) ***Assume suitable data, if necessary.***
3) ***Line drawings of one plan and one section 1 : 100 must be submitted at the end of first day. This drawing will be returned the next day, 30 min. before 12 hours end.***
4) ***All drawings should be clear and self explanatory.***

Maharashtra State Philatelic Museum (A Museum for Postal Stamps)

The Deccan Philatelic Society, Pune, the Pune General Post Office and the Government of Maharashtra have proposed a State level Philatelic Museum in Pune.

With the present decline of use of postal services due to the use of internet / email, the aim of this project is to promote the hobby of stamp collecting amongst the younger generation and create awareness of the value of stamps. Also it would serve as a meeting place for all stamp collectors.

The Museum will have a collection of Pre Independence and Post Independence Indian stamps, a rich collection of first day covers, rare stamps and foreign stamps.

The rectangular piece of land which is 3750sq.m (50.0 m x 75.0) is located in the cantonment area of Pune amongst low rise residential buildings and has a park situated adjacent to it on the south. (Please refer to the attached plan.)

Front margin (main road) is 4.5 m and side margins 3.0 m.

P.T.O.

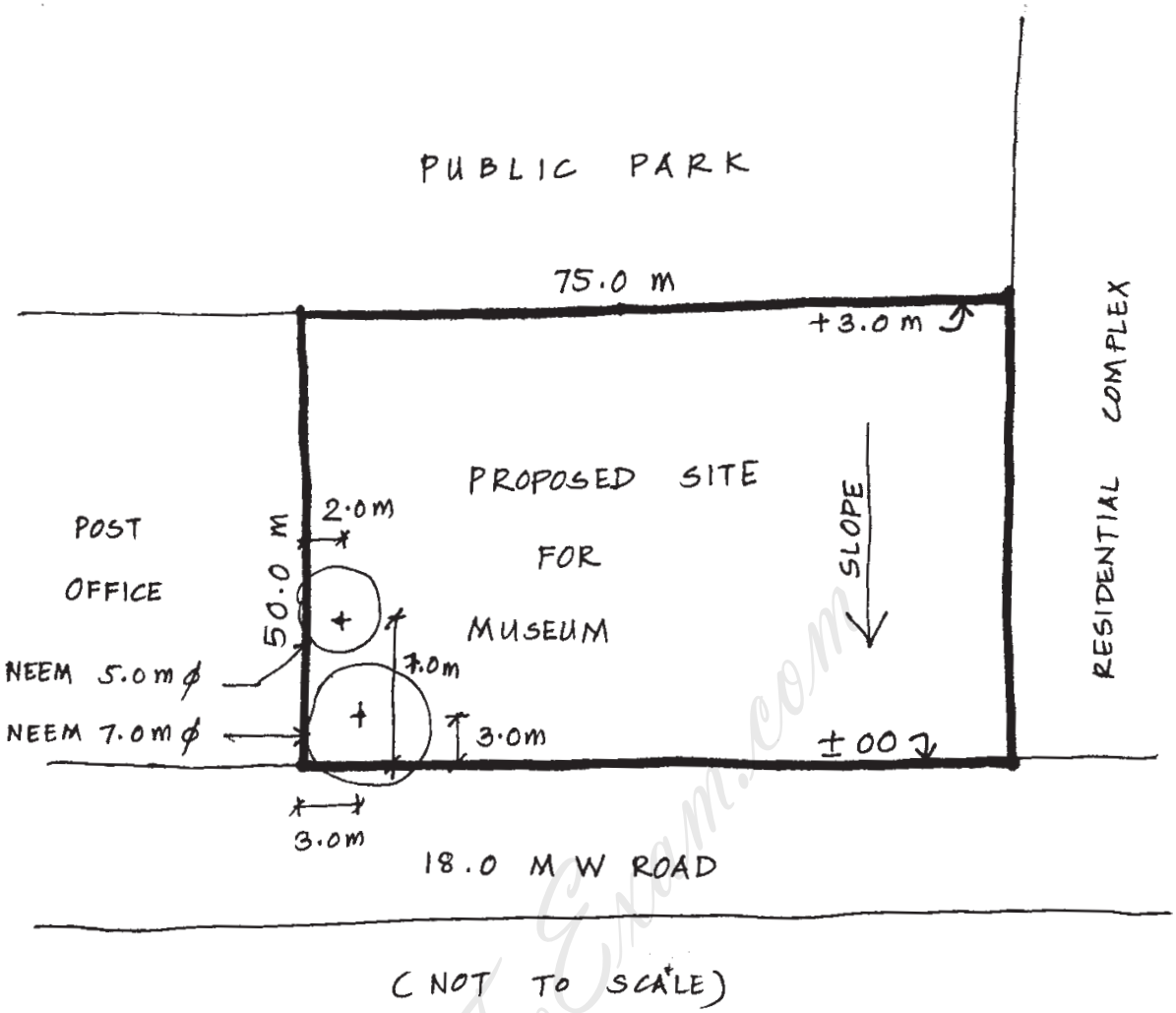
Requirements :

1.	Entrance lobby +waiting	01	40 sq.m
2.	Curators cabin with attached toilet	01	20 sq.m
3.	Office for 4 persons	01	40 sq.m
4.	Pantry	01	10 sq.m
5.	Toilets	01 Ladies +01 Gents	15 sq.m each
6.	Store	01	20 sq.m
7.	Documentation room	01	20 sq.m
8.	Audio visual room	01	40 sq.m
9.	Large Permanent exhibition halls	04	80 sq.m each
10.	Small Permanent exhibition halls	02	40 sq.m each
11.	Temporary exhibition hall	01	80 sq.m each
12.	Sales counter	01	20 sq.m
13.	Adequate toilets for Ladies and Gents as per norms		
14.	Parking 10 cars and 40 two wheelers		

Total Built up area 640 sq. m + 30 % circulation ie. 832 sq. m = 850 sq.m.

Drawing requirements

1. Site Plan with roof plan of structure and landscape, roads, parking and pathways. 1: 200.
2. Ground floor plan and with all furniture with entrance, pathways, roads 1: 100.
3. All floor plans and with all furniture 1: 100.
4. Two sections or sectional elevations 1: 100.
5. Two elevations 1: 100.
6. Part section showing fenestration detail (external wall with window its protection) 1: 50.
7. View.



PLOT

NORTH

A.D. – III (2003 PATTERN)

T.Y. B.ARCH., APRIL – MAY 2010.

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

P768

[3767] - 35

T.Y. B.Arch. (Annual)

QUANTITY SURVEYING AND SPECIFICATION WRITING

(Revised Course 2003 Yearly Pattern) (313440) (Theory)

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

Instructions to the candidates:

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

SECTION - I

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

a) R.C.C footing for all columns (excluding M.S reinf).

b) P.C.C for footings.

c) R.C.C column below ground and up to plinth level only.

d) R.C.C plinth beam only.

e) 23 cm thk. brick work in plinth only.

f) T.W door.

g) R.C.C stair paradi only and its reinforcement.

h) Neeru finish plaster for living hall and bed room only.

i) Inspection chamber, gully trap and drainage line.

j) Bib cock and stop cock.

k) Oil paint for door only.

P.T.O.

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

a) Bill of Quantity.

b) Schedule of rate.

c) Methods of calculation for load bearing structure.

d) Rules for plaster deduction.

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

a) R.C.C column (1:2:4)

b) 35 cm brick masonry.

c) Neeru finish plaster.

d) P.C.C in foundation (1:4:8)

Material :

- Cement - Rs. 250/bag,
- Sand - Rs. 1000/cum,
- Brick - Rs. 4000/brass (1000 no.),
- Neeru - Rs. 80/bag.

Labour :

- Column - Rs. 750/m^3,
- Brick work - Rs. 150/m^3,
- Neeru finished plaster - Rs. 50/m^2,
- P.C.C (1:4:8) - Rs. 160/m^3.

Q4) Indent of material for items calculate quantities from Q.1 (any two) : **[10]**

From Q.1 out of Ten quantities work out any two.

SECTION - II

Q5) What are the different types of specifications, elaborate any two types of specifications. **[10]**

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

a) Cement.

b) Reinforcing steel.

c) Bricks.

d) Glazing.

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

a) Uncoursed rubble masonry.

b) Brick work.

c) Sand faced cement plaster.

d) White or colour wash.

Q8) a) State the objective of specification writing. **[5]**

b) Specify following materials by trade/manufacturer's name (any five) : **[5]**

i) Modular switches.

ii) A.C. sheets.

iii) Lifts.

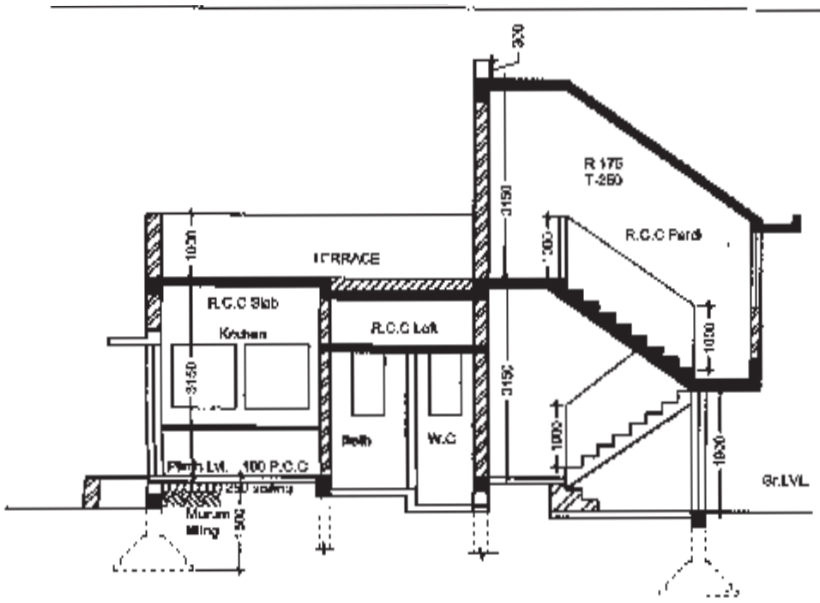
iv) Glass films.

v) Electric Cables.

vi) Reinforcing steel.

vii) P.V.C. water tanks.

viii) Clay roofing tiles.



DETAIL OF STRUCTURE
(R.C.C FRAME STRUCUTRE)

R.C.C COLUMN
C1- 230 X 300
C- 230 X 350

R.C.C FOOTING
FOR C1P.C.C SIZE 1200 X 1300
FOOTING SIZE - 900 X 1000
DEPTH - D = 350 d = 250
FOR C P.C.C SIZE 1200 X 1500
FOOTING SIZE = 900 X 1200
DEPTH D = 400 .d = 250

PLINTH BEAM = 230 X 350

FLOOR BEAM = 230 X 400

ROOF SLAB THK. = 125
CHAJJA/ LOFT THK = 100

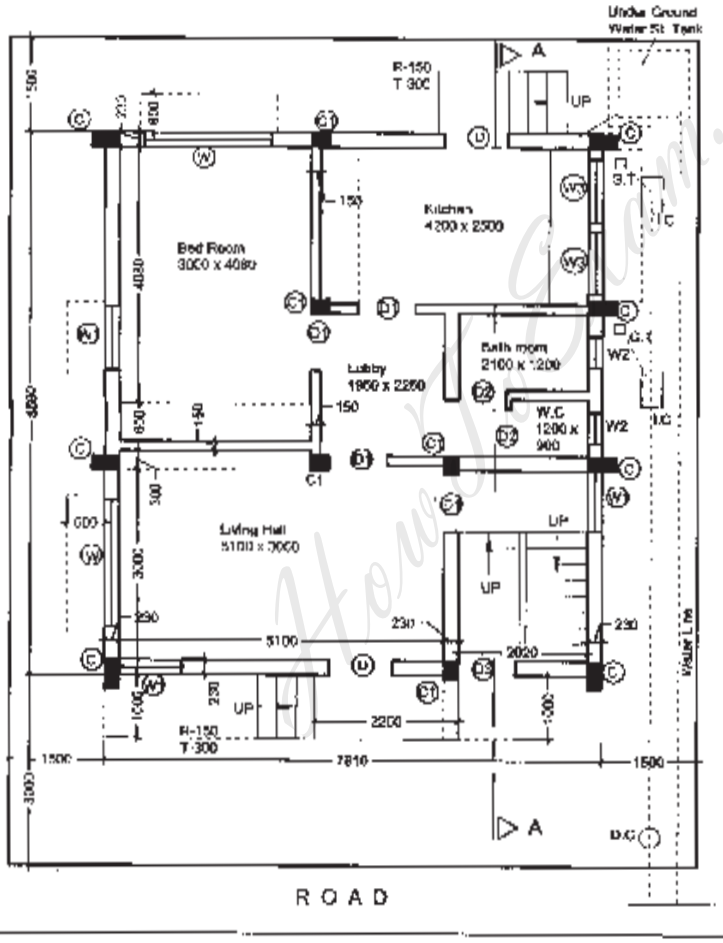
BRICK WALL = External - 230
Internal - 150

DOOR & WINDOW
DOOR - T.W PANNELED
WINDOW - T.W GLAZED

FLOORING
MARBEL MOSAIC TILES,
HALF TILE SKIRTING,
POLISHED SHABAD FOR
BATH, GLAZED TILE FLOOR
FOR W.C & DADO FOR W.C -
1000 / BATH ROOM - 2000

SCHEDULE OF OPENING
DOORS
D - 1000 X 2100
D1 - 900 X 2100
D2 - 750 X 2100
D3 - 900 X 1800
WINDOWS
W - 2000 X 1200
W1 - 1000 X 1200
W2 - 500 X 1000
W3 - 1000 X 1000

N.B
1. ALL DIMENSION ARE IN MM
2. ASSUME SUITABLE DATA
IF NECESSARY.



N

GROUND FLOOR PLAN

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SECTION - II

Q4) Explain the terms : [any 5] **[20]**

a) Basilica.

b) Triumphal arch.

c) Narthex.

d) Ziggurat.

e) Megaron.

f) Corinthian Order.

Q5) Discuss the classical orders and optical corrections developed by the Greeks. **[15]**

OR

Discuss any three public buildings in the Classical Greece civilization.

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

a) Mosaics and Frescoes.

b) Triforium gallery.

c) Greek temples.

d) Basilican churches.

e) Thermae.

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Total No. of Questions : 06] **[Total No. of Pages : 2**

P769

[3767] - 1002

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

HISTORY OF ARCHITECTURE, ART, CULTURE & INTERIORS DESIGN - I

(Theory) (Yearly 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 sketches should be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***All questions are compulsory.***

SECTION - I

Q1) Write short notes with illustrations : [any 5] **[20]**

a) Pylon.

b) Dolmen.

c) City planning of Indus Valley.

d) Mayan Pyramid.

e) Stupa.

f) Heirogylphs.

Q2) Discuss the salient features of Chinese architecture and explain in detail the Chinese roof construction. **[15]**

OR

Describe the religious typology of Egyptian civilization giving suitable examples.

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

a) Japanese house interiors.

b) City of Babylon.

c) Prehistoric cave paintings.

d) Mahayana Buddhism.

e) Padmaka.

P.T.O.

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

P770

[3767] - 1003
F.Y. B.Arch.
INTERIOR DESIGN
Construction, Services & Materials - I (ID3)
(Theory - 2003 Pattern)

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

Instructions to the candidates:

1) ***Answer any two questions from Section I. and 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 question wherever necessary.***
5) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Give detail of compound wall in random rubble masonry built to courses in plan, elevation and section with given data : **[15]**

Ht. of compound wall – 1500 mm.

Depth of hard strata – 600 mm.

Thk. of wall – 450 mm.

b) Give elevations of any two type of stone masonry walls other than random rubble masonry built to courses. **[10]**

Q2) a) Draw plans of two alternate courses and elevation for 'T' junction of brick wall in English bond where thickness of external wall is one brick and thickness of internal wall is half brick. **[15]**

b) Draw neat proportionate sketches of 4 different types of purpose made bricks with labeling and dimensions. **[10]**

Q3) a) Draw free hand sketches of **[15]**

i) Joint between post and head for timber door.

ii) Joint between transom and mullion.

iii) Any two widening joints.

b) Draw elevation of pointed arch for opening of 1200 × 2400 mm with any 5 terminology used in arch construction to the scale 1 : 20 **[10]**

P.T.O.

Q4) Explain with sketches different components involved in plumbing system. **[8]**

OR

Explain the terms with sketches **[8]**

a) Water seal in 'p' trap.

b) Fixing of wall mounted wash basin.

Q5) Draw sketch of plan & section of floor mounted UWC, Urinals. **[8]**

OR

Explain with the help of sketches following sanitary fitting. **[8]**

a) Wall Mounted UWC.

b) Orissa Pan.

Q6) Explain with sketches journey of water from the source to the water tap at household level. **[9]**

SECTION - III

Q7) Answer any 3 of following **[15]**

a) What are the applications of bamboo in interior design?

b) Explain the market forms of timber based boards with its application in interior design.

c) List and explain the use of various stones available in India.

d) Differentiate between setting and hardening of cement.

e) What is meant by mortar? Explain the types of mortar.

Q8) Write short notes on any 2 of following **[10]**

a) Bulking of sand.

b) Any 2 types of flooring materials.

c) Thatch roofing.

d) Concrete blocks.

# # # #

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

P771

[3767] - 2002
S.Y. B.Arch. (ID)
HISTORY OF ARCHITECTURE, ART, CULTURE & INTERIORS - II
(Yearly Pattern)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Draw suitable sketches wherever necessary.***
4) ***Write two sections in separate answer books.***

SECTION - I

Q1) What are the important characteristics of temples built during Cholas period? Support your answer with suitable sketches. **[15]**

Q2) What are the salient features of Mughal architecture? Answer with suitable sketches. **[15]**

Q3) Write short notes : (any 2) **[10]**

a) Angkor Vat.

b) Charbaugh.

c) Minarets in Islamic Architecture.

Q4) Write a short note on Development of Tombs in Indo Islamic Architecture. **[10]**

SECTION - II

Q5) Explain the construction of Renaissance Domes with sketches. **[15]**

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

a) Parish Church.

b) Gothic Arches.

P.T.O.

c) Chinese Garden.

d) Renaissance Art.

Q7) What is Baroque? What are the main characteristic features of Baroque art? **[10]**

Q8) Write short notes : (any 2) **[10]**

a) Floating Gardens by Aztecs.

b) Window Tracery.

c) Forbidden city, Beijing.

# # # #

f) Pebble dash plaster.

g) Linoleum flooring.

SECTION - III

Q5) Write short notes with appropriate sketches : (Any 5) **[25]**

a) Any two types of traps.

b) Explain the terms: Reverberation and Sound shadow.

c) Explain the water supply network from the municipal line to the last draw off point in two storied building.

d) Miniature circuit breaker.

e) Single pipe system and double pipe system.

f) State types of wiring systems and describe the types of wires used.

g) Insulation of piping work.

# # # #

Q2) A timber truss roof is to be provided for a workshop 7m × 9m with AC Sheet roofing with 600mm overhang on both side, clear internal height is 4.5m and external walls are 350 mm thk in brick, strengthened with 350 mm × 350mm brick piers at 3m c/c draw key plan (scale 1 : 50) showing trusses and members. **[10]**

Draw details of joinery of principal rafter and tie beam. (Scale 1 : 5) **[5]**

Draw details of ridge. **[5]**

OR

A reception of an Architect's office of size 3000 × 3500 mm is to be provided with false ceiling in gypsum board. The clear height of the room is 3600 mm. Draw plan and section showing levels and light fixtures at the scale of 1 : 20. **[10]**

Draw enlarged details showing fixing of ceiling sections and hangers, fixing of perimeter channel and ceiling sections. **[10]**

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

a) Reinforcement detail for simply supported beam 230mm × 400mm for a span 6000mm.

b) Combined RCC footing.

c) Different types of Vaults.

d) Details of any one temporary structure.

SECTION - II

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

a) Bulking of sand.

b) Admixtures.

c) Method of fixing AC sheet roofing.

d) Any two paving materials.

e) Pointing techniques for exposed masonry.

Total No. of Questions : 5] **[Total No. of Pages : 3**

P772

[3767] - 2003
S. Y. B.Arch.
INTERIOR DESIGN
Construction, Services & Materials - II
(Theory)

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 watchman's cabin of size 2500 mm × 2500 mm is to be constructed using hollow concrete masonry. Give a detailed plan and section from foundation to roof using hollow concrete masonry at the scale of 1 : 20 **[10]**

Draw enlarged detail of lintel level at the scale of 1 : 5 **[5]**

Draw a enlarged detail of corner junction of the wall. **[5]**

OR

Draw plan, elevation and section of a partly glazed door of size 1200 × 2100 mm to be provided for entrance of a living room 3500 × 4000mm in size (Scale 1 : 10) **[15]**

Give details of panel fixing at top rail and style. (Scale 1 : 5) **[5]**

P.T.O.

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

P773

[3767] - 3002
T. Y. B. Arch (ID)
CONSTRUCTION, SERVICES AND MATERIALS - III
(2003 Pattern)

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

Instructions to the candidates:

1) ***All questions from Section I, any five questions from Section II & Section III respectively.***
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) Draw a plan and section of dog legged R C C staircase to the scale of 1:20 and give half flight staircase with mid landing along with reinforcement details, showing all relevant steel placement details. **[20]**

OR

Provide a partly luminous suspended ceiling to an entrance lobby of an office building of size 3000x4500mm. Draw reflected plan and section to a scale of 1:20 and details at suitable scale.

Q2) A paneling of suitable material is to be provided to an office space. The size of the office room is 3500x4000mm. Draw plan, elevation and section to the scale of 1:20. Give enlarged details to a suitable scale. **[20]**

OR

Draw plan, elevation and details of ridge, eaves and gutter along with built up section of the main truss cord for Steel Truss spanning 12.00Mt with A C Sheet roofing to suitable scale.

P.T.O.

Q3) Write short notes with appropriate sketches (Any 2) : **[10]**

a) Theory of Modular coordination and its uses.

b) Joinery and materials to construct a bed.

c) Raft foundation and pile foundations.

SECTION - II

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

a) Types of glass and their uses in building industry.

b) Decorative Brickwork used in buildings.

c) Any two walling and roofing techniques developed by diff agencies.

d) Characteristics of good paints.

e) ACP Cladding to External Surface.

f) Waterproofing to a toilet.

g) Guniting.

SECTION - III

Q5) Write short notes with appropriate sketches (Any 5): **[25]**

a) Any two fire protection devices.

b) Air handling units.

c) Typical cycle of refrigeration.

d) Air conditioning as an Environmental issue.

e) Fire resistant materials.

f) Forced Ventilation.

g) Causes and spread of Fire.

Total No. of Questions : 12] [Total No. of Pages :2

P774

[3767] - 3004
T. Y. B. Arch. (ID)
HISTORY OF ARCHITECTURE, ART, CULTURE AND INTERIORS - III (Annual) (313483)

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

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer books.***
2) ***Question 1 and 7 are compulsory.***
3) ***Answer any three questions from the rest five in each section.***
4) ***Draw sketches wherever necessary.***
5) ***Figures to the right indicate full marks.***

SECTION - I

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

a) Art Noveau.
b) Chandigarh city.
c) Elements of a typical wada.
d) Lauri Baker.
e) Arts and crafts movement.
f) Classical Revivalism in 19th century.

Q2) Explain the role of climate & resources in Ar. Hasan Fathy's work. **[10]**

Q3) Explain Effect of Masters on early Indian Architects like A.P. Kanvinde, Charles Correa, B.V.Doshi. **[10]**

Q4) Elaborate with sketches styles and elements of Religious architecture in the Peshwa Period. **[10]**

Q5) Discuss colonial architecture of Inida. **[10]**

Q6) Describe the impact of industrial revolution on architecture of 19th century. **[10]**

P.T.O.

SECTION - II

Q7) Write short notes with sketches (Any 4): **[20]**

a) Cubism.

b) Art Deco.

c) De stijl.

d) F.L.Wright.

e) Expressionism.

f) Chair designs by any two master designers.

Q8) Discuss any two theories of town planning of twentieth century. **[10]**

Q9) Discuss works of Mies Van der Rohe. **[10]**

Q10) Explain post modernism in architecture with suitable examples. **[10]**

Q11) Explain the philosophy of the Bauhaus school of thought. **[10]**

Q12) Discuss advanced technologies and materials in contemporary interior design. **[10]**

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

P775

[3767]-3005
Third Year B.Arch. (ID)
ESTIMATION & COSTING
(2003 Pattern) (313484) (Theory)

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

Instructions to the candidates:

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

SECTION - I

Q1) a) Work out the quantities for the following items of work (any five) for the structure shown in the accompanying diagram based on the details and data given. **[25]**

i) Excavation in soil and S.M. for the column footings.

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

iii) C.C. $\left(1:1\frac{1}{2}:3\right)$ columns in ground floor.

iv) C.C. $\left(1:1\frac{1}{2}:3\right)$ floor Beams.

v) B.B.Masonry (1 : 6) 230 thick in Ground Floor (only).

vi) Niroo finished plaster to walls (internally) to community hall (only). Jambs internal 50mm, ext - 180mm.

vii) T.W.Door frames (125 × 65) for D1, D2 & D3.

viii) Ceramic Tile dado (2.10m Height) - Toilet only.

P.T.O.

b) State the unit of measurement as per I.S.1200 for the following items of work. **[5]**

- P/F Tor Steel Rein
- P/F 12 dia G.I. Tubing
- P.O.P. false ceilings
- B.B. Masonry 110 thick
- Struct. steel in trusses
- P.C.C. (1:4:8) bedding
- Corrugated G.I. Roofing
- Murum filling in plinth
- P.V.C. overhead water tank
- P/F Orissa Pan.

Q2) a) State what is "Unit-Rate" for an item of work, also enumerate factors affecting unit rate. **[5]**

b) Work out aggregates, sand, cement required for 30 CUM of C.C. $\left(1:1\frac{1}{2}:3\right)$ **[5]**

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

a) Characteristics of Approximate Estimates.

b) Bill of quantities.

c) Contingencies.

d) Overhead expenses.

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

a) P/F commercial flush door shutters.

b) P/C B.B.Masonry (1:5) 150 mm thick.

c) P/F polished kota floorings.

d) P/F Wash Hand Basin.

SECTION - II

Q5) What is the role of specifications in quality control of construction? Explain by giving examples of at least one item of construction. **[10]**

Q6) Write in brief specifications for any two of the following materials : **[10]**

a) Coarse aggregate for concrete.

b) Cement.

c) Torsteel bars for reinforcement.

d) T.W. for door frames.

Q7) Write in brief specifications for workmanship on <u>any two</u> of the following : **[10]**

a) Half brick thick B.B.masonry.

b) Plain cement concrete bed in foundation.

c) Polished shahabad flooring.

d) Neroo finished cement plaster.

Q8) Specify materials by at least two trade names/band names for each material (for any five materials) **[10]**

a) Cement 53 grade.

b) Cement paint.

c) Bathroom fittings.

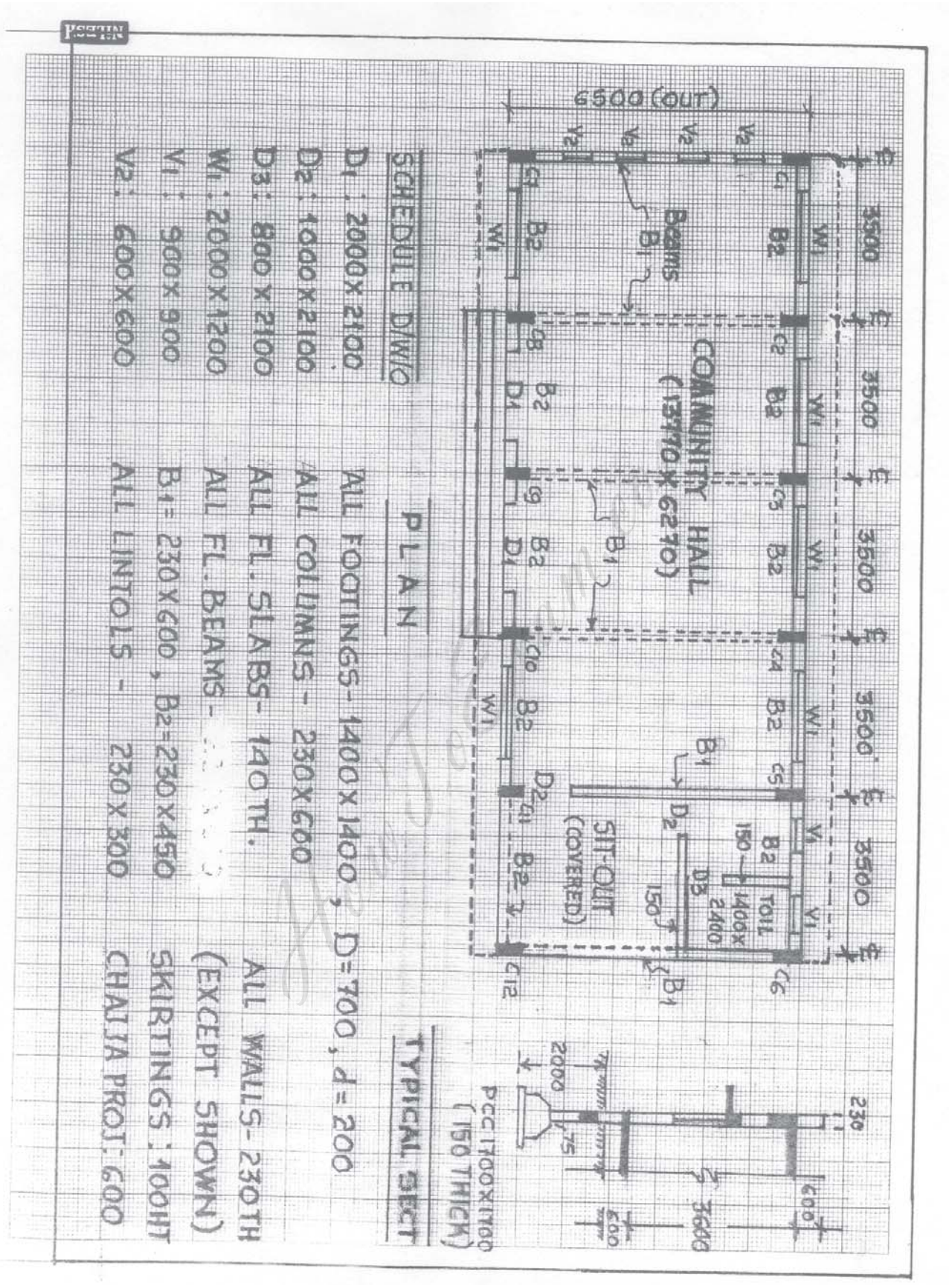
d) Modular kitchen.

e) Ply wood.

f) Particle board.

g) PVC drainage pipes.

h) Electrical switches.



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

P800

[3767] - 13

F. Y. B. Arch.

HISTORY OF ARCHITECTURE AND HUMAN SETTLEMENTS - I

(Revised Course – 2004 Yearly 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 on separate answer books.***
3) ***Neat diagrams to be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

Q1) Explain the following terms with respect to their context (Attempt any 5):**[20]**

a) Stone Henge
b) Pagoda
c) Obelisk
d) Stupa
e) Ball game Court
f) Rock cut viharas.
g) Hieroglyphs.

Q2) With the help of proper sketches explain the evolution of tomb Architecture in ancient Egypt. **[15]**

OR

Explain the salient feature of the Indus Valley Civilization in the field of Architecture and town planning. Illustrate with suitable examples and sketches.

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

a) The Great Wall of China.
b) Prehistoric Cave paintings.
c) Chaityas.
d) Any 2 Vedic Village pattern.
e) Egyptians Columns.

P.T.O.

SECTION - II

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

a) Ziggurat

b) Agora

c) Nave and Aisles

d) Any 2 optical corrections

e) Roman aqueduct

f) Ionic Capital

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

OR

Name the various public buildings of the ancient Roma period. With the help of proper sketches explain any 2 of them.

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

a) Roman Villas.

b) City plan of Babylon.

c) Treasury of Atreus.

d) Greek Theatres.

e) Plan of a Basilican Church.

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

P801

[3767] - 51
Fifth Year B. Arch. (Annual Pattern)
PROFESSIONAL PRACTICE I & II

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

Instructions to the candidates:

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

SECTION - I

Q1) a) Design your own office setup, organisation.

i) Chart with growth potentials. **[5]**

ii) Discuss various Taxes and Registrations that your office will consider while running your professional office. **[5]**

iii) Discuss various options available to seek and secure clients for your office. **[5]**

b) Discuss Architect's Role towards community, coprofessionals on the guidelines of council of Architecture. **[5]**

Q2) a) State your views on the following (Any three) : **[15]**

i) Practising Architect does not adhere to the guidelines on professional ethics of the council of Architecture.

ii) Owner wants to recommend Architect other than selected by BOA (Board Of Assessors) in an Architectural Competition.

iii) Lease Holder wants to demolish Existing Shopping Mall and build a multiplex.

iv) An Education Institute does not follow the improvement instructions of the council of Architecture.

b) Write short notes on (Any two) : **[5]**

i) Dilapidations

ii) Types of Easements.

iii) Cost, price and value.

P.T.O.

Q3) a) Compare between (Any two) : **[10]**

i) Senient and Dominant Heritage.

ii) Continuous and Discontinuous Easements.

iii) Sentimental and Distress value.

b) Define market value and discuss characteristics of market value. **[10]**

Q4) a) State your Actions in Any Four of the following : **[12]**

i) Client wants you to redesign his project earlier designed by another Architect.

ii) You decide to Advertise your activities in Leading News Paper.

iii) Priyanka chopra's hankerchief is on auction.

iv) Your client is in deep Financial Crisis and wants to sell his land on a sea shore.

v) Your Engineer friend wants to participate with you in an open Architectural competition.

vi) Client wants you to explain your fee structure.

b) Discuss the following (Any two) : **[8]**

i) Architect's Art.

ii) Role of COA and IIA.

iii) Code of Conduct.

iv) Scale of Fees.

SECTION - II

Q5) a) What is Tender? Discuss various types of Tenders and characteristics of Tender Notice. **[10]**

b) Answer briefly Any Five of the following : **[10]**

Stating your actions. With reference to contract.

i) There is no response to the publication of tender notice.

ii) Architect expires during work execution.

iii) You receive a conditional Tender with lowest quote.

iv) The contractor refuses to take up work after issuance of letter of intent by Architect.

v) Owner wants to pay certified amount in installments - to the contractor.

vi) Architect objects to the behaviour of the site Engineer of the contractor.

vii) Owner meets with an accident at site.

Q6) a) Write short notes on (Any Four) : **[12]**

i) Clerk of work.

ii) Architect's Instructions.

iii) Variations, Extra Items.

iv) Bill certification by Architect.

v) Architect's Role during DLP (Defects Liability Period).

vi) Dispute Resolution by Architect between Owner & Contractor.

b) With Reference to Articles of Agreement state your Decisions regarding Any Four of the following : **[8]**

i) Contractor asking for new rates due to prevailing rise in Market Prices.

ii) Owner wants to supply steel and cement.

iii) Contractor's item rates in the Running bill does not match with contract bills.

iv) Owner requests Architect to proceed with Arbitration to resolve issues with the contractor.

v) Contractor does not rectify defects pointed out by clerk of works.

vi) Contractor's labour meets with serious accident at site.

vii) Contractor claims for time extension to compensate time lost due to local Riots.

Q7) a) Write short notes on (Any Four) : **[12]**

i) Demolition Tender.

ii) Pre qualification of contractors.

iii) Pre-Bid conference

iv) Actual and virtual completion.

v) Earnest Money, Retention Money & Security Deposit.

vi) Liquidated Damages.

b) Compare between (Any Two) : **[8]**

i) Lump Sum and Item Rate Tender.

ii) Clerk of work (COW) and contractor's site Engr.

iii) Sub contractor and nominated sub-contractor.

iv) Latent and Patent defects.

Q8) a) Explain the process of Tendering from tender notice to selection of the contractor. **[8]**

b) Explain Any Three of the following : **[12]**

i) Sole Arbitrator.

ii) Umpire in Arbitration.

iii) Role of Architect in Arbitration.

iv) Quasi judicial and Court Intervention in Arbitration Proceedings.

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

P802

[3767] - 2004
S.Y. B. Arch. (ID)
ARCHITECTURAL GRAPHICS AND SKILLS - II
(213485)

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

Instructions to the candidates:

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

Q1) Draw perspective view of Bed Room.

a) Shown in Fig No. 1 is a Bed Room. Draw view from the given picture plane as shown using any method to the scale : 1 : 20. **[35]**

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

c) Draw a presentable drg. With all interior elements along with human. Fig. **[15]**

Total marking scheme a + b + c = 60 marks.
Given : Station point = 6000 Scale : 1 : 20 Eye lvl = 1750.

Q2) Draw shades & shadows.

a) Figure No. 2 shows plan and front elevation of an object. Draw isometric view of the object using method. **[20]**

b) Show shades & shadows as the case may be on the plan, elevation and isometric view of the object given in Fig : 2. Object is placed 20mm above H.P. and 40mm away from v.p. Give colour wash to the shades & shadows. **[20]**

Total marking scheme a + b = 40 marks.

P.T.O.

FIGURE NO. 1

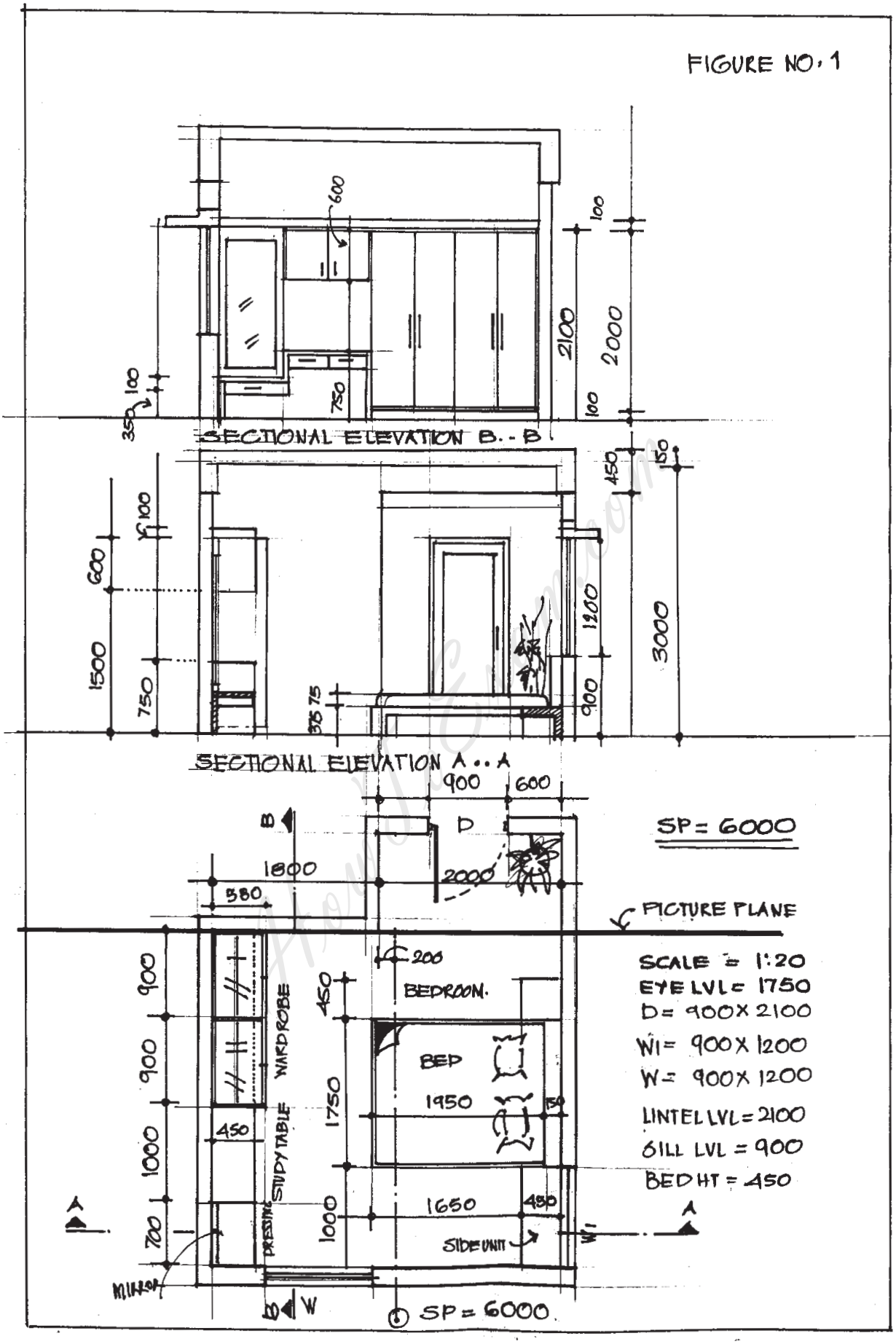
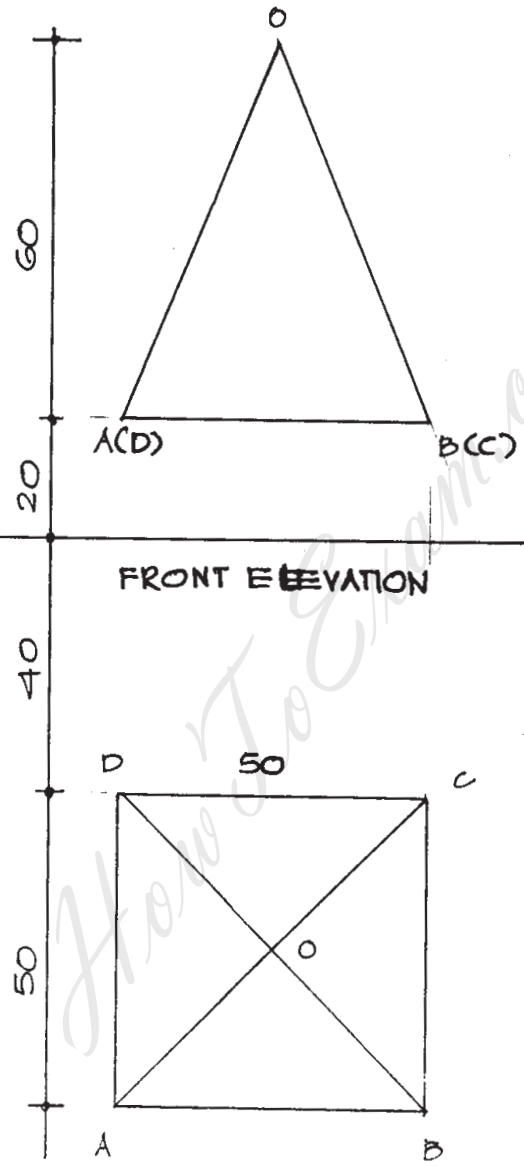


FIGURE NO·2



SQ-BASED PYRAMID.

✪✡✪✡

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

P803

[3767] - 4002
F. Y. B. Arch. (ID)
CONSTRUCTION, SERVICES AND MATERIALS - IV
(2006 Pattern) (413482)

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

Instructions to the candidates:

1) ***Write answers to each section in a separate answerbook.***
2) ***Question 1 from Section I, Question 6 from Section II & Question 9 from Section III are compulsory.***
3) ***Solve any three of the remaining questions from Section I, and any one of the remaining questions from Section II & Section III.***
4) ***Support your answer with neat sketches.***
5) ***Assume suitable data where required.***

SECTION - I

Q1) Give sketch details of an Industrial structure & its main construction frame, walls & roof, provision of natural lighting, ventilation & rainwater disposal based on the following data :
Overall size 30.00 m × 50.00 m. (without any internal columns)
Plinth height 0.90 Mtr. Floor to ceiling height (minimum) 5.00M. **[20]**

Q2) What precautions are needed in load bearing wall construction to make it resistant to earthquake? **[10]**

Q3) State the characteristic features of different long span structural systems giving examples of each type. **[10]**

Q4) Write short notes on any two of the following : **[10]**

a) High Rise Structures.
b) Materials for acoustical insulation.
c) Adhesives.
d) Curtain wall glazing.

Q5) Give sketch details of an auditorium balcony & its structural support system. **[10]**

P.T.O.

SECTION - II

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

a) Plywood.

b) Laminates.

c) Joints in wood work.

d) Use of Glass furniture design.

Q7) State important aspects of Modular Kitchens. **[10]**

Q8) Discuss role of laminates & other surface finishes for aesthetics & durability of furniture. **[10]**

SECTION - III

Q9) Write short notes on any three of the following : **[15]**

a) Fire rating of materials.

b) Day-light control through intelligent systems.

c) Security systems.

d) Micro-processor controls for maintenance of building services.

Q10) State important aspects of intelligent buildings. **[10]**

Q11) Discuss role of micro-processor based systems in architecture & interiors. **[10]**

[Total No. of Pages : 4

P844

[3767]-41
F.Y. B. Arch.
ARCHITECTURAL DESIGN - IV
(2003 Pattern)

Time : 18 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Your design solution will be evaluated as a whole.***
2) ***Assume suitable data if necessary.***
3) ***The candidates shall submit single line plans of the entire scheme with the layout plan to the required scale at the end of the first day. These drawings shall not be returned to the candidates, therefore due record of the same should be kept for subsequent days. The candidate shall not make any considerable departure from the design submitted on the first day.***
4) ***The drawings should be self explanatory with structural scheme and should have clarity in all the plans and sections.***

Apparel Manufacturing Unit

A private international quality manufacturing company proposed to build a state of the art or modern unit in MIDC (Maharashtra Industrial Development Corporation) area in Pune. It would be an integrated facility and would have adequate operational functions from raw material (fabric) storage to final packaging area. The proposed unit would be a high-end fully automated manufacturing facility and would employ State-of-the art machinery for producing high quality apparels.

Apparel manufacturing unit requires highly skilled and trained manpower for large quantum of movement of raw materials, storages handling and dispatching area.

The selected plot for the Apparel Manufacturing Unit is flat and rectangular in shape having 60 m. North – South and 50 m. East – West dimensions. It has 12 m. wide roads on three sides and an existing M.S. Fabrication Workshop on the South side.

The proposed Apparel Manufacturing Unit has to be designed with the following requirements :

Space Requirements : (Figures to the right indicate carpet area in sq. mts.)

- Adequate areas for passages, lobbies, porch, stairs, services should be provided wherever necessary.
- Adequate number of toilets to be provided as per the requirement.
- Circulation areas are over and above the given areas.

P.T.O.

1) Administration

i)	Entrance hall, reception and waiting	30.00
ii)	Small meeting room for meeting vendors and suppliers	15.00
iii)	Administration Office	
	a) CEO's cabin with attached toilet, area for secretary and visitors waiting	45.00
	b) Manager's cabin	15.00
	c) Office area for 20 nos. of administrative staff	75.00
	d) Large conference for guests with audio visual provision and ample display of products	120.00
iv)	Pantry for staff	15.00
v)	Store and server area Adequate toilets to be provided	15.00

2) Workshop Area

i)	Fabric storage	200.00
ii)	Accessory storage	100.00
iii)	Cutting area	150.00
iv)	Stitching area with stitching machines	400.00
v)	Embroidery area	50.00
vi)	Ironing area with boiler room	50.00
vii)	Finishing and packing area	150.00
viii)	Waste good storage	200.00

3) Workers area and Facility

i)	Locker and changing room for both sexes.	40.00
ii)	Toilet for both sexes.	30.00
iii)	Dining area with canteen, pantry, storage, utility and hand washing area.	100.00

4) Parking and Security

Cars	4 nos.
Two wheelers	60 nos.
Bus	2 nos.
Trucks	2 nos.
Security cabin	1 no.

Adequate driveway should be provided for the same

5) Services

i)	Transformer	40.00
ii)	Generator room	50.00
iii)	Electrical panel room	30.00
iv)	MSEB meter room	30.00
v)	Diesel storage area	10.00
vi)	U.G. tank	50,000 litres
vii)	Water treatment/pump	40.00
viii)	Fire fighting arrangements	
ix)	Access control and security arrangements	
x)	Lightening arrestor arrangements	
xi)	Loading and unloading platform	

Design Parameters

i) Minimum side margins from all sides is 6.00 m.

ii) Maximum ground coverage is 50% of the plot area

iii) Ample natural light and natural ventilation provisions are a must

iv) Overall process flow should not hamper or obstruct the other activity areas and manufacturing

v) Safety and security against fire and accidents must be considered

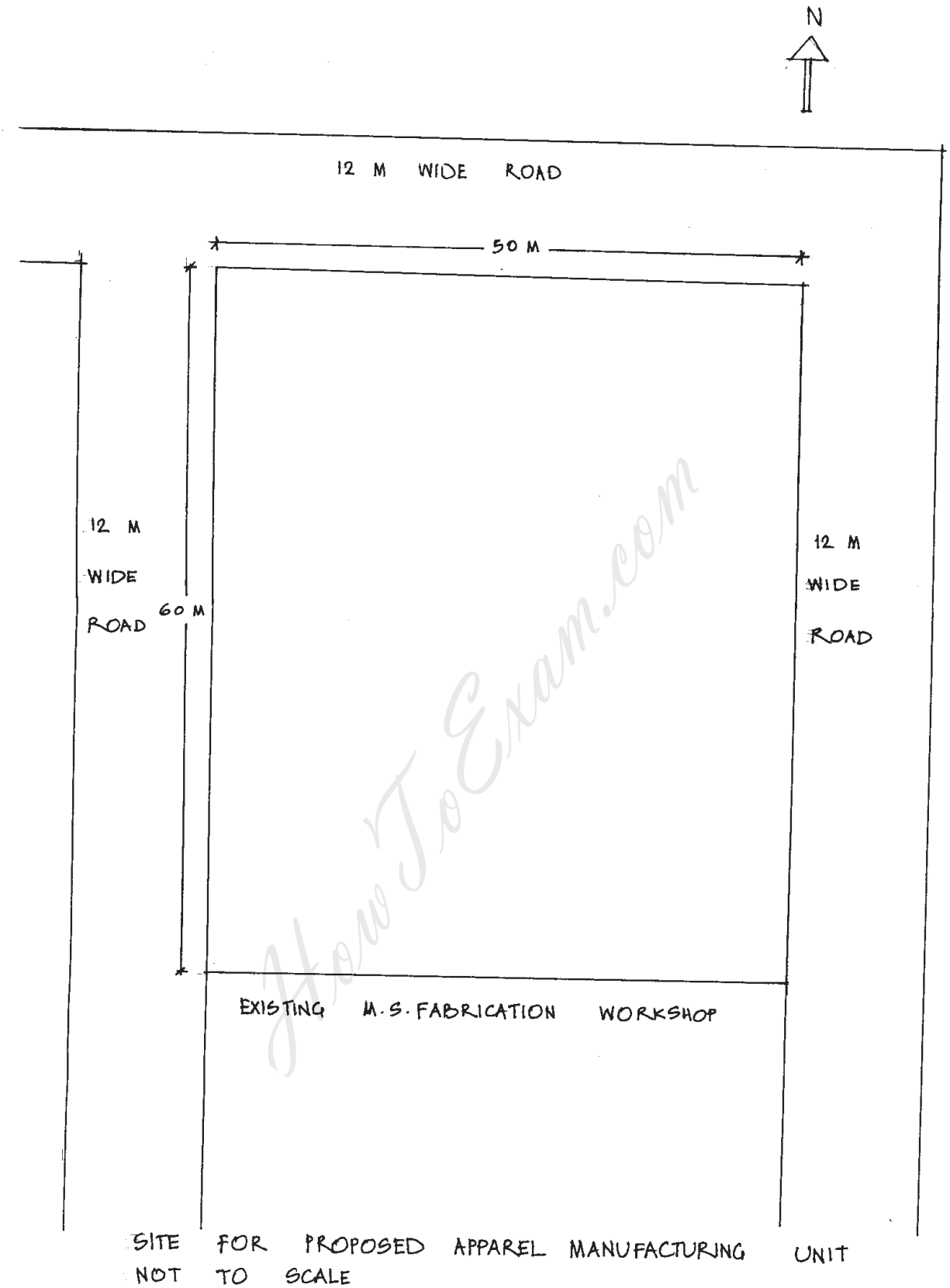
Drawings Required

First Day :

i)	Single line layout plans showing site, buildings, parking, driveways, pathways, landscaping etc.	1:200
ii)	Single line plans at all levels	1:200
iii)	Anticipated process line diagram or flow chart is a must	

Final Day :

i)	Layout plan showing site, buildings, parking, driveways, pathways, landscaping, services etc.	1:200
ii)	Plans at all levels should be shown with internal layout	1:200
iii)	Minimum two sections to explain the scheme	1:200
iv)	Minimum two elevations	1:200
v)	A sketch perspective or bird's eye view	



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P846

[3767]-3003
T.Y. B. Arch. (I.D)
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 section at 1:200 at the end of the first day. These sketches shall not be returned to the candidate, therefore due record should be kept for reference on the subsequent day. Candidates should refrain from making serious deviations from sketches submitted on the first day.***
4) ***The drawing should be self explanatory with structural clarity in drawings.***
5) ***Orientation of the site should not be changed while preparing the floor plans.***

Information Technology Office Building

A reputed I.T company desires to set up its firm amidst the hustle and bustle of the city environs with a staff requirement of about 100 persons. The site selected for this upcoming proposal is located on Senapati Bapat Road, Pune adjoining the ICI building.

The client is looking for a built form that would reflect the local identity and also address the concerns of energy efficiency.

Design Brief -

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

P.T.O.

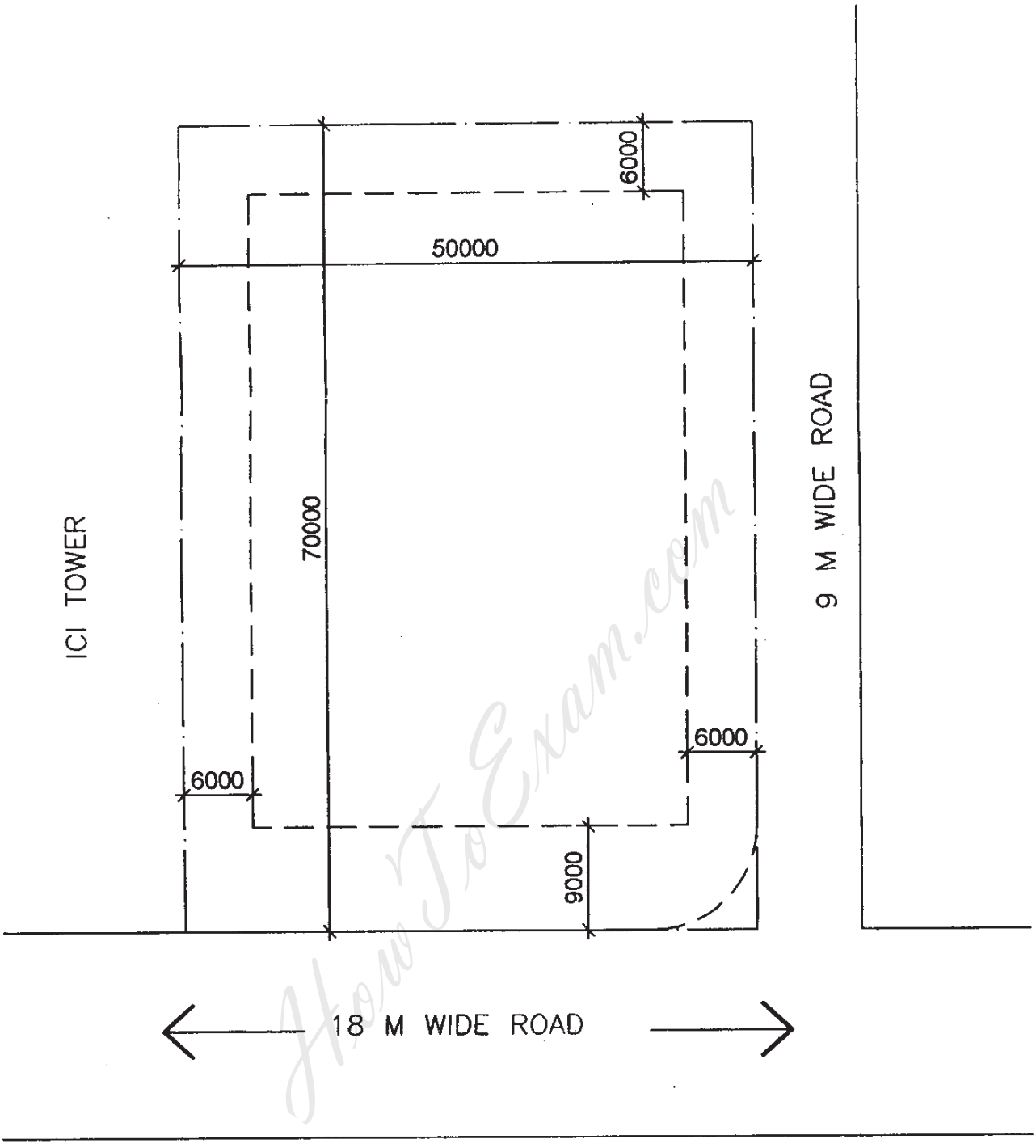
4.	**Office areas :** a. Accounts department with store b. Stores and purchases c. Marketing and customer care	 80 sqmts 60 sqmts 40 sqmts
		180 sqm
5.	**Work stations :** a. Project leaders (07 × 10 sqm) b. Assistants (07 × 05 sqm) c. Workstation for 75 persons	 70 sqmts 35 sqmts 400 sqmts
		505 sqm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

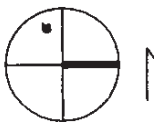
Site Parameters :

Plot Size	50.0 M × 70 M
Plot area	3500 sqm.
Set back from Road	Front: 9.00 M, Side setback: 6.0 m
Height Permissible	16.0 M
Maximum ground coverage	35% of plot area
Basement Line	Till the setback line
Permissible F.S.I.	1.00

Drawing requirements :

1.	Site Plan	1 : 200
2.	All floor plans	1 : 100
3.	Two sections minimum	1 : 100
4.	Two elevations minimum	1 : 100
5.	Detailed layout of workstation for any individual floor plate	1 : 60
6.	Interior view of reception and waiting	





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[Total No. of Pages : 3

P847

[3767]-4001
Fourth Year B.Arch. (I.D.)
INTERIOR DESIGN
(2006 Pattern)

Time : 18 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***The design solution will be evaluated as a whole.***
2) ***Assume suitable data wherever necessary.***
3) ***The candidates shall submit single line plans of the entire scheme with layout plan to the required scale at the end of the first day. These drawings shall not be returned to the candidates, therefore due record of the same should be kept for subsequent days. The 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.***

A Nursing Home cum Residence

With the modernization and commercialization of Medical Industry, the Health care concerns changed from just curing a patient to providing a more comfortable, safe and healing environment in the buildings. A patient now a day expects not only good treatment but also a healthy environment in the healthcare buildings.

With the above concept a doctor couple wishes to design and construct a Nursing home cum residence for themselves. The doctor is a general surgeon and his wife a gynecologist. They own a corner plot measuring 25 × 60 mts. in a posh locality of Pune. The longer side of the plot is abutting 18 mts. road facing north and a 9 mts road on the east side. The adjacent plot consists of a shopping cum residential building.

The Nursing home is to be designed with the following requirements. Stress shall be given on detailing of the interior spaces with sufficient information about services, technology and materials in consideration to the total ambience.

P.T.O.

SPACE REQUIREMENTS

Figures to the right indicate carpet area in square meters. Adequate areas for passages, lobbies, porch, stairs, lift and other circulation areas, toilets and other services, parking facility, etc should be incorporated in design.

A : Administration

1. Entrance hall, waiting, reception, registration 30
2. Doctors' consulting chambers with attached toilets - 2 nos. ..... 15 Each
3. Meeting room 12
4. Store 12
5. Pantry 9
6. General toilets (Male & Female).

B : Medical facilities

1. Minor O.T/Labour room 12
2. Operation theatre with a vestibule, sterilization and scrub 25
3. Pathology 9
4. X-ray machine room 12
5. Dark room 5
6. Nurses station with a changing room and toilet 5
7. Pharmacy 9

C : Patient's recovery rooms

1. Special AC rooms with attached toilets - 4 Nos. ..... 15 each
2. Single Non AC rooms with toilets shared between 2 rooms - 4 Nos. ..... 12 each
3. Dormitory for 4 patients each - 2 Nos. ..... 25 each
4. Common toilets for patients (male & female)

D : Doctor's Residence

1. Entrance lobby.
2. Drawing Hall.
3. Family Lounge.
4. Kitchen with store and utility.
5. Master Bedroom with Study room and attached toilet.

6. Children's bedroom with attached toilet.
7. Guest Bed room with attached toilet.
8. Pooja room.
9. Store room.
10. Gym/exercise room.

Design Parameters :

1. Compulsory minimum site setbacks on the road sides is 5 mts. and other sides is 3 mts.
2. Max. permissible height is 15 mts.
3. The design scheme should be resolved appropriately in terms of structures.
4. Outdoor/Indoor landscape should be duly designed.
5. The design should reflect clearly the placement of machineries for air-conditioning, generator back-up, etc.

Drawing requirements :

First day submission -

1. Concept of design. **10 marks**
2. Single line layout plans showing site, buildings, parking, driveways, pathways, landscaping 1:200
3. Single line plans at all levels 1:100

Final submission -

1. Layout plans showing site, buildings, parking, driveways, pathways, landscaping, location of machinery, etc ..... 1:200 **15 marks**
2. Plans at all levels with complete interior layout ..... 1:100 **25 marks**
3. Minimum two sections to explain the scheme ..... 1:100 **20 marks**
4. Minimum two elevations ..... 1:100 **15 marks**
5. A sketch perspective specifically highlighting the interior theme **15marks**

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

P853

[3767] - 12
F. Y. B.Arch. (Annual)
THEORY OF STRUCTURES - I
(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 i) Rigid body ii) Lami's theorem iii) Conditions of Equilibrium for coplanar non-concurrent force system. **[6]**

b) A body is 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]**

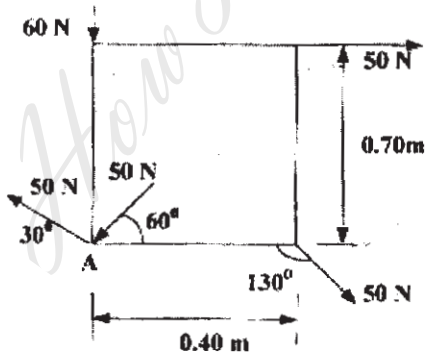


Figure 1.b

Q2) a) Explain different types of supports for a beam with neat sketches. Explain. The possible reaction at each support. **[4]**

b) Explain Law of polygon of forces. **[2]**

P.T.O.

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

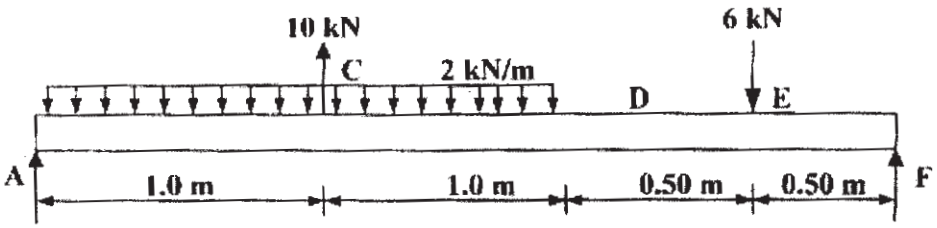


Figure 2.c

Q3) a) Write the expression for the moment of inertia along its centroidal axis for i) Rectangular section ii) Circular section iii) Triangular section. **[6]**

b) Draw the SFD and BMD for the beam shown in Figure 3.b **[10]**

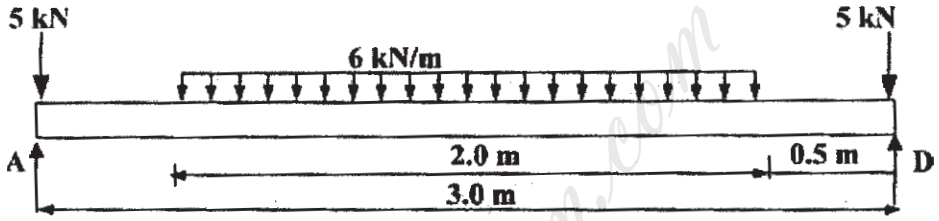


Figure 3.b

Q4) a) For the truss shown in the Figure 4.a, determine the forces in members DE, CE, AD and DC. **[8]**

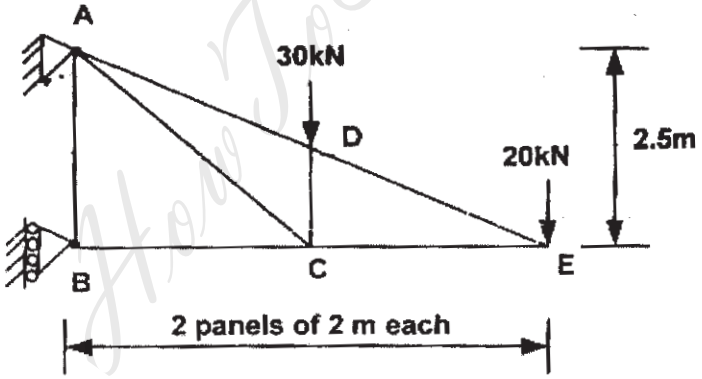


Figure 4.a

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. Take diameter of the AB portion as 0.06m and diameter of BC portion as 0.20 m. **[10]**

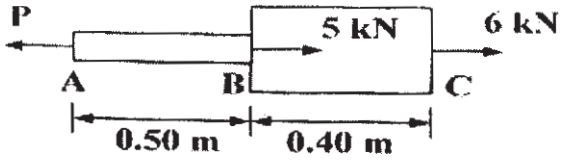


Figure 4.b

SECTION - II

Q5) a) i) Explain middle third rule and kernel of section. **[8]**

ii) State the flexural equation for beam and explain each term in it.

b) Draw shear stress diagram and find maximum shear stress for the beam shown in Figure 5.b. **[9]**

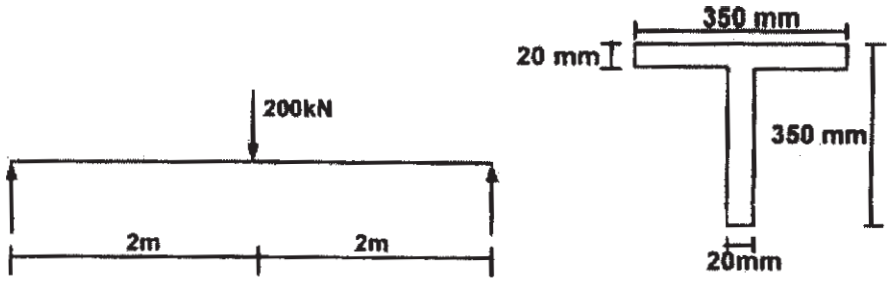


Figure 5.b.

Q6) a) What is modulus of elasticity? What is modulus of rigidity? What is Bulk modulus? State the relationship between E, K, G and μ. **[6]**

b) Find the stresses at four corners of the masonry column 400mm × 600 mm, shown in Figure 6.b. **[10]**

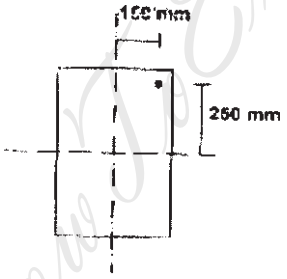


Fig 6.b

Q7) a) State Hooke's law and explain stress-strain curve for mild steel. **[5]**

b) A square RCC column of 400 mm × 400 mm, reinforced with 4 bars of 22 mm diameter at the four corners carries compressive load of 700 kN. Find the loads shared steel and concrete. **[8]**

Assume $E_c = 0.1 \times 10^5$ N/mm^2 and $E_s = 2 \times 10^5$ N/mm^2.

c) What is moment of resistance? What is section modulus? **[4]**

Q8) a) Find the magnitude of udl (acting over the entire span) required for a simply supported beam of span 4m, having maximum permissible bending stress $8N/mm^2$. The beam cross section is a hollow rectangle with outer dimensions 400 mm x 600 mm and inner dimensions 350 mm x 550 mm. **[8]**

b) Find the maximum slope and deflection for a cantilever beam having length 3m and subjected to a udl of 5 kN/m over the entire span along with point load of 200 kN acting at the free end. Assume EI = 1. **[8]**

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

P854

[3767]-22
S.Y. B.Arch.
THEORY OF STRUCTURE - II
(Yearly Pattern)

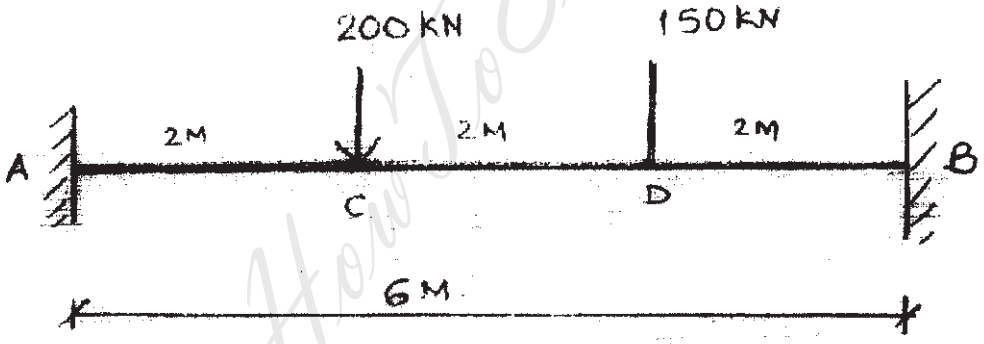
Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***Answers 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 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 RCC design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) A Fixed Beam AB is shown in Fig No.1 Draw BMD and SFD. **[16]**



(FIG. 1) (FIXED BEAM AB)

P.T.O.

Q2) a) Fig No.2 shows a portal frame, write down the stiffness factor and distribution factor for this frame. **[10]**

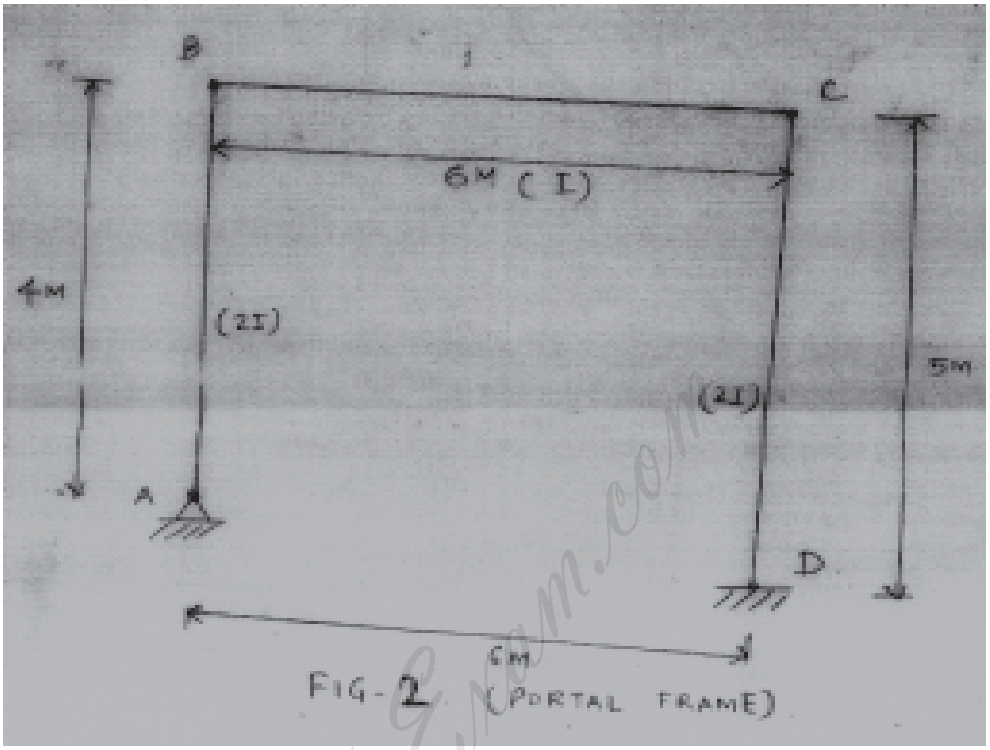


FIG-2 (PORTAL FRAME)

b) State advantages and disadvantages of riveted connection over bolted connection. **[6]**

Q3) a) A simply supported steel beam of effective span 6.25M carries total UDL of 16 kN/m over its entire span. The compression flanges of beam are having adequate lateral support. Design the beam using suitable "ISMB" check the beam for shear and deflection.

Assume :

i) Permissible bending stresses in steel = 165 N/mm^2

ii) Permissible shear stresses in steel = 100 N/mm^2 **[10]**

b) Calculate the safe compressive load on a hollow steel column (Both ends fix) of 150mm external diameter and 100mm internal diameter and 10M long. Use Euler's formula with a factor of safety 3 and $E = 2 \times 10^5$ N/mm^2

(take effective length = actual length/2). **[7]**

Q4) a) Design a tie member of a roof truss of effective length 2.0M to carry a tensile force of 200 kN. Use double unequal angle section. Use fillet weld at joints. **[10]**

b) A strut consist of 2-ISA 100 × 75 × 8 with longer legs back to back connected to one side of a gusset plate 8mm thick with two rivets. The length of strut is 3m. Calculate the load carrying capacity of strut. **[7]**

SECTION - II

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

a) Flitched beam.

b) Differentiate between load bearing and framed structures.

c) Different grades of concretes and steels used in concrete.

d) Cantilever slab with sketches.

Q6) a) Design an axially loaded circular R.C.C. column of effective length 4m subjected to a factored load of 1800kN. **[10]**

b) A "T" beam has a flange width of 1200mm, flange thickness 120mm, rib width 250mm and a effective depth of 475mm. It is provided with a tension reinforcement of area 3500mm^2. Find the ultimate moment of resistance. **[7]**

Q7) Design a singly reinforced simply supported beam of width 300mm and 6000mm span. The beam carries a UDL of 22 kN/m excluding its self weight. Design the beam for shear and draw reinforcement details. **[16]**

Q8) Design a RCC slab for a floor of a hall with inside dimensions 3.0 × 6.2m. The slab is supported on 300mm wide beam on all sides. The slab has to carry a live load of 3.5kN/m^2 and floor finish load of 1.2kN/m^2. Show the reinforcement details. **[16]**

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

P857

[3767] - 1001
F. Y. B.Arch. (Interior Design)
THEORY OF STRUCTURES - I
(Annual 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 i) Rigid body ii) Lami's theorem iii) Conditions of Equilibrium for coplanar non-concurrent force system. **[6]**

b) A body is 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]**

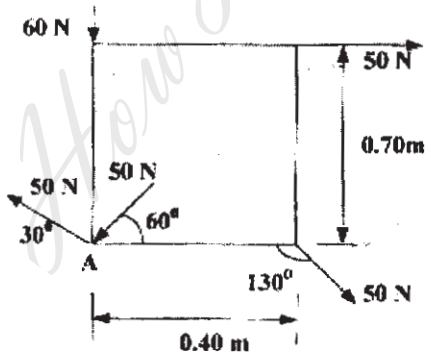


Figure 1.b

Q2) a) Explain different types of supports for a beam with neat sketches. Explain. The possible reaction at each support. **[4]**

b) Explain Law of polygon of forces. **[2]**

P.T.O.

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

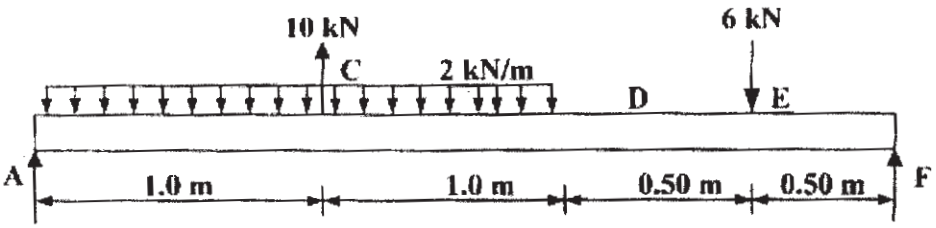


Figure 2.c

Q3) a) Write the expression for the moment of inertia along its centroidal axis for i) Rectangular section ii) Circular section iii) Triangular section. **[6]**

b) Draw the SFD and BMD for the beam shown in Figure 3.b **[10]**

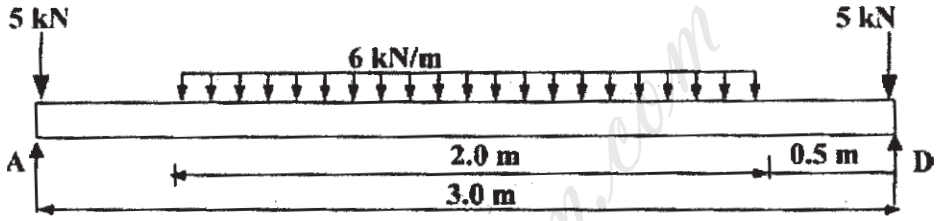


Figure 3.b

Q4) a) For the truss shown in the Figure 4.a, determine the forces in members DE, CE, AD and DC. **[8]**

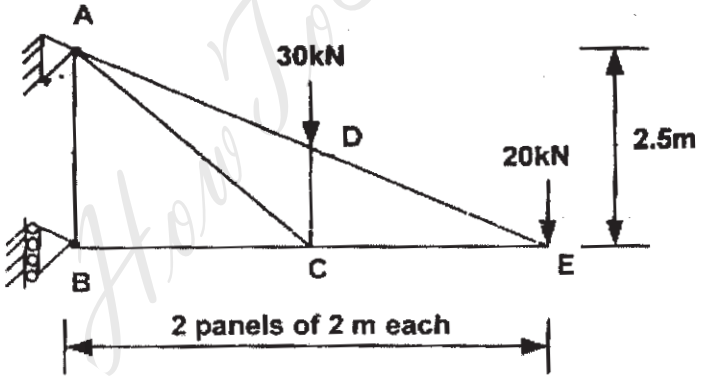


Figure 4.a

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. Take diameter of the AB portion as 0.06m and diameter of BC portion as 0.20 m. **[10]**

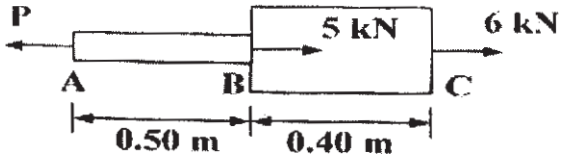


Figure 4.b

SECTION - II

Q5) a) i) Explain middle third rule and kernel of section. **[8]**

ii) State the flexural equation for beam and explain each term in it.

b) Draw shear stress diagram and find maximum shear stress for the beam shown in Figure 5.b. **[9]**

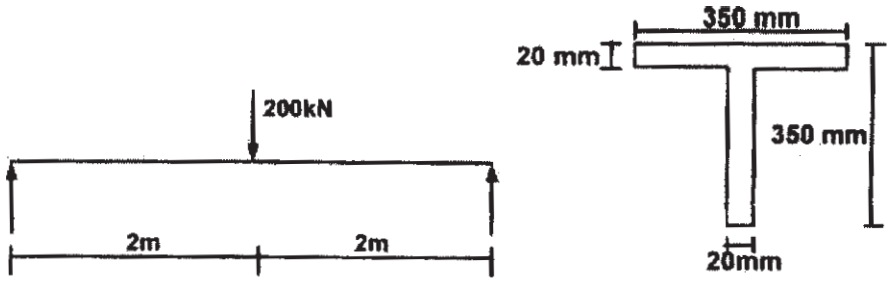


Figure 5.b.

Q6) a) What is modulus of elasticity? What is modulus of rigidity? What is Bulk modulus? State the relationship between E, K, G and μ. **[6]**

b) Find the stresses at four corners of the masonry column 400mm × 600 mm, shown in Figure 6.b. **[10]**

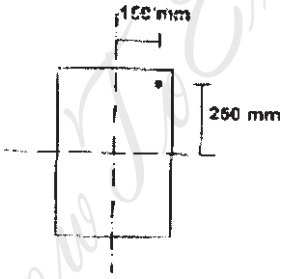


Fig 6.b

Q7) a) State Hooke's law and explain stress-strain curve for mild steel. **[5]**

b) A square RCC column of 400 mm × 400 mm, reinforced with 4 bars of 22 mm diameter at the four corners carries compressive load of 700 kN. Find the loads shared steel and concrete. **[8]**

Assume $E_c = 0.1 \times 10^5$ N/mm^2 and $E_s = 2 \times 10^5$ N/mm^2.

c) What is moment of resistance? What is section modulus? **[4]**

Q8) a) Find the magnitude of udl (acting over the entire span) required for a simply supported beam of span 4m, having maximum permissible bending stress $8N/mm^2$. The beam cross section is a hollow rectangle with outer dimensions 400 mm x 600 mm and inner dimensions 350 mm x 550 mm. **[8]**

b) Find the maximum slope and deflection for a cantilever beam having length 3m and subjected to a udl of 5 kN/m over the entire span along with point load of 200 kN acting at the free end. Assume EI = 1. **[8]**

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

P858

[3767]-2001
S.Y. B.Arch. (Interior Design)
THEORY OF STRUCTURE - II
(Annual Pattern)

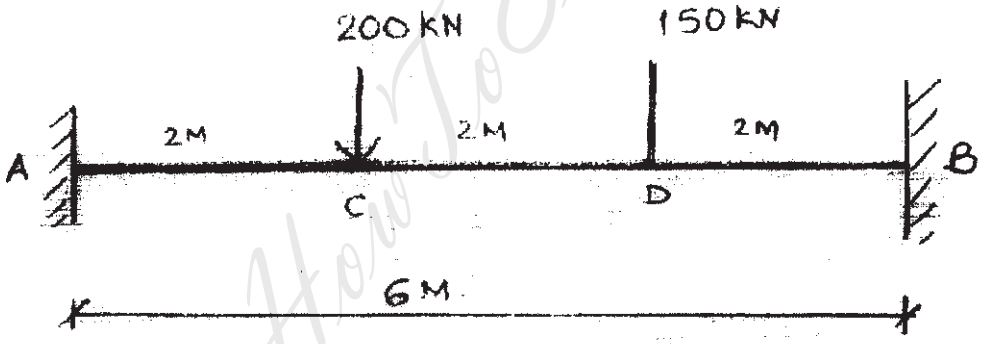
Time : 3 Hours] ***[Max. Marks : 100***

Instructions to the candidates:

1) ***Answers 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 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 RCC design use M 20 grade concrete and Fe 415 steel.***

SECTION - I

Q1) A Fixed Beam AB is shown in Fig No.1 Draw BMD and SFD. **[16]**



(FIG. 1) (FIXED BEAM AB)

P.T.O.

Q2) a) Fig No.2 shows a portal frame, write down the stiffness factor and distribution factor for this frame. **[10]**

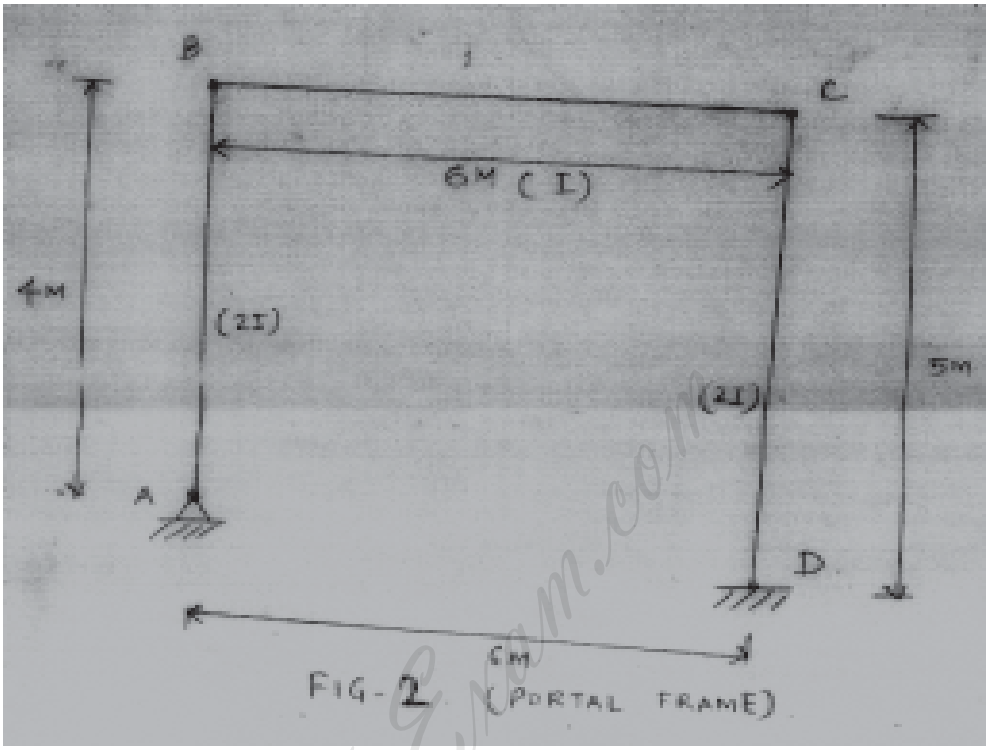


FIG-2 (PORTAL FRAME)

b) State advantages and disadvantages of riveted connection over bolted connection. **[6]**

Q3) a) A simply supported steel beam of effective span 6.25M carries total UDL of 16 kN/m over its entire span. The compression flanges of beam are having adequate lateral support. Design the beam using suitable "ISMB" check the beam for shear and deflection.

Assume :

i) Permissible bending stresses in steel = 165 N/mm^2

ii) Permissible shear stresses in steel = 100 N/mm^2 **[10]**

b) Calculate the safe compressive load on a hollow steel column (Both ends fix) of 150mm external diameter and 100mm internal diameter and 10M long. Use Euler's formula with a factor of safety 3 and $E = 2 \times 10^5$ N/mm^2

(take effective length = actual length/2). **[7]**

Q4) a) Design a tie member of a roof truss of effective length 2.0M to carry a tensile force of 200 kN. Use double unequal angle section. Use fillet weld at joints. **[10]**

b) A strut consist of 2-ISA 100 × 75 × 8 with longer legs back to back connected to one side of a gusset plate 8mm thick with two rivets. The length of strut is 3m. Calculate the load carrying capacity of strut. **[7]**

SECTION - II

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

a) Flitched beam.

b) Differentiate between load bearing and framed structures.

c) Different grades of concretes and steels used in concrete.

d) Cantilever slab with sketches.

Q6) a) Design an axially loaded circular R.C.C. column of effective length 4m subjected to a factored load of 1800kN. **[10]**

b) A "T" beam has a flange width of 1200mm, flange thickness 120mm, rib width 250mm and a effective depth of 475mm. It is provided with a tension reinforcement of area 3500mm^2. Find the ultimate moment of resistance. **[7]**

Q7) Design a singly reinforced simply supported beam of width 300mm and 6000mm span. The beam carries a UDL of 22 kN/m excluding its self weight. Design the beam for shear and draw reinforcement details. **[16]**

Q8) Design a RCC slab for a floor of a hall with inside dimensions 3.0 × 6.2m. The slab is supported on 300mm wide beam on all sides. The slab has to carry a live load of 3.5kN/m^2 and floor finish load of 1.2kN/m^2. Show the reinforcement details. **[16]**

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

P1409

[3767]-1151
F.Y. M.Arch.
(Architectural Conservation)
INTRODUCTION TO CONSERVATION
(Sem. - I) (Theory)

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

Instructions to the candidates:

1) ***Attempt any four questions from Section I.***
2) ***Q. No.7 is compulsory and answer any three questions from Q. No. 8 to Q.No.11.***
3) ***Answers to the two sections should be written in separate answer books.***
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 values in conservation, explain with suitable examples? **[10]**

Q2) Write in detail about Sir Barnad Fielden's contribution to the Conservation movement in the West. **[10]**

Q3) Explain in detail the "Umbrella of Conservation". **[10]**

Q4) Trace the history of the movement of conservation in Europe. **[10]**

Q5) Explain the causes of Decay in a Cultural Property. **[10]**

Q6) Explain the difference between Preservation and Reconstruction. **[10]**

SECTION - II

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

a) What is the role of UNESCO in managing World Heritage Site?

b) Describe the background for the Burra Charter.

P.T.O.

Q8) Describe the criteria for the nomination of a World Heritage Site. **[10]**

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

Q10)Explain the term 'Designing in context'. Apply it to any site of your choice. **[10]**

Q11)What are the steps associated with documentation of Historic Structures?**[10]**

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

P1410

[3767]-1153

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

STRUCTURAL CONSERVATION MATERIALS AND TECHNIQUES - I

(Sem. - I) (Theory)

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

Instructions to the candidates:

1) ***Section I and Section II have to be solved in separate answer books.***
2) ***Q. No.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) State the properties of timber. Discuss the common defects of timber. **[10]**

Q2) What are the types of lime and explain the composition of lime mortar?**[10]**

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

Q4) What are alloys? Describe any one alloy in detail and its usage. **[10]**

Q5) What are various types of stone found in northern India? Describe any two in detail. **[10]**

Q6) What is cast iron? Discuss the causes of its decay. **[10]**

SECTION - II

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

a) Defects in dome.

b) Structural cracks in historic structures.

P.T.O.

Q8) What are the common defects found in wooden trusses in British Colonial structures? **[10]**

Q9) The residential type of structures belonging to Nizamshahi period are subjected to lot of wear and tear due to various natural and man made agencies. Discuss the various defects associated with the structure. **[10]**

Q10) What are the various strengthening measures to be taken in mud structures? **[10]**

Q11) What are the important aspects to be looked at while doing a condition assessment of a historic structure? **[10]**

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Total No. of Questions : 8] **[Total No. of Pages : 1**

P1411

[3767]-1154
F.Y. M.Arch. (I Term)
(Environmental Architecture)
SOCIO-ECONOMIC ASPECTS OF PLANNING
(Sem. - I) (Theory) (New Course)

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

Instructions to the candidates:

1) ***Both the sections are compulsory.***
2) ***Q. No.4 from Section I and Q.No. 5 from Section II are compulsory.***
3) ***Solve any two questions from the rest from each section.***
4) ***Draw neat sketches wherever necessary.***

SECTION - I

Q1) Explain how do Multi-National Companies contribute in creating regional imbalances? What are the environmental impacts of overgrowing Multi-National Companies in urban growth poles? **[15]**

Q2) Discuss various methods of solid waste management. Which methods are most suitable for your city of residence? **[15]**

Q3) What do you mean by 'Human Ecology'? How it is reflected in internal structure of cities? Explain with the example of city that you know. **[15]**

Q4) Explain various attributes of land which makes it suitable for development. **[10]**

SECTION - II

Q5) What do you mean by agglomeration economies? What are advantages of agglomeration economies? **[15]**

Q6) Write short notes on following. **[10]**

a) Peoples participation in planning.

b) Economic base multiplier.

Q7) Explain what are spread effects and back wash effects in regional planning. **[10]**

Q8) What is economic globalization? What are the socio-economic impacts of globalization? **[10]**

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

P1412

[3767]-1155
First Year M.Arch.
(Environmental Architecture)
EA-102 : URBAN AND REGIONAL PLANNING
(Theory)

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

Instructions to the candidates:

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

SECTION - I

Q1) How, why and where did the first urban settlements occur? State the classifications of settlements. What were the important "contents" such as determinants of land use and planning process 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]**

a)	Egyptian Architecture	Proactive Planning
b)	Ian Mcgarh	New Landscape
c)	Charles Correa	Image of City
d)	Kevin Lynch	Design with Nature
e)	City development Plan	Planning as Social and Political Tool
f)	Development Plan	Reactive Planning.

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

a) Jane Jacob.
b) Effects of Industrial Revolution.
c) Negative and Positive Aspects of New Towns in India.
d) City Beautiful Movement – Investment or expenditure.
e) Five Year Planning in India.

P.T.O.

SECTION - II

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

OR

State the rationales of planning? Debate about following.

a) Development Plan vs. City Development Plan.

b) Legal Planning Approach vs. Advisory Planning Approach.

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

Q5) 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]**

OR

State about 'Urban Renewal' and its roots. State its relevance, validity and principles. What is Jawaharlal Nehru Urban Renewal Mission in India?

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

a) Population Studies.

b) Land Suitability Analysis and Its application.

c) Discuss current tools of implementation of infrastructure projects.

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

P1413

[3767]-1156
F.Y. M.Arch.
(Environmental Architecture)
EA-103 : HOUSING AND ENVIRONMENTAL PLANNING
(Sem. - I) (Theory) (New Course)

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

SECTION - I

Q1) Write briefly (Any Two). **[10 Marks Each]**

a) Describe the features of the National Environmental Policy of India. Express your opinion about the environmental priorities discussed in the National Environmental Policy.

b) Describe briefly the various Themes of Sustainability Planning. Discuss the existing scenario under each theme and possible proposed alternatives for achieving sustainability in cities of India.

c) Express your opinion about Sustainability in Transportation for Indian cities. What are the strategies that can be employed to move towards sustainable transportation in Pune.

Q2) Write short notes on (Any Four): **[5 Marks Each]**

a) Affordable Housing sustainable strategies.

b) Ecological Footprint concept.

c) Functions of an Environmental Planner.

d) Incremental Planning Theory.

e) Sustainability.

f) Local Agenda 21.

g) Development Plan process for Indian cities.

P.T.O.

SECTION - II

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

a) What are the various Rural Housing programmes established by the central and state government in India? Explain in detail any one of them.

b) Express your opinion about the real estate scenario in India with emphasis on Pune. List the various stakeholders in real estate development of the city and their respective roles.

c) What are the main features of the Maharashtra State Housing policy? How, in your opinion, does the policy impact the housing sector in Maharashtra?

Q4) Write short notes on (Any Three): **[5 Marks Each]**

a) Slum Free Cities.

b) Co-operative Housing.

c) Housing – an economic good.

d) NHB.

e) SRA

f) Rehabilitation and Resettlement in Slum Redevelopment.

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

P1414

[3767]-1157

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

NATURAL SCIENCES - I

(Sem. - 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 Two). **[20]**

a) Weathering of Rocks.

b) Air Pollution.

c) Internal structure of the earth.

Q2) Write short notes (Any Two): **[20]**

a) Types of sedimentary rocks.

b) Types of Soils.

c) Geological processes in formation of sedimentary rocks.

SECTION - II

Q3) Explain the following (Any Two). **[20]**

a) Ground water table.

b) Solar radiation.

c) Forest Biomes.

Q4) How does landscape play a role in modifying a microclimate of an area? **[15]**

OR

What are various types of systems for classification of plants? Write a brief note on it with respect to broad outline.

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

P1415

[3767]-1158

M.Arch. (Landscape Architecture)

LANDSCAPE TECHNOLOGY - I

(Sem. - I) (Credit System Syllabus) (Backlog)

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) Retention and Detention Ponds.

b) Rain water harvesting.

c) Rational Method.

Q2) What does a contour line signify? Explain the characteristics and uses of contour lines showing suitable examples. Illustrate the answers with diagrams. **[10]**

Q3) State the considerations for grading of sports fields. Show the required surface slopes with diagrams for any two outdoor sports fields. **[10]**

OR

Which are the methods of computing cut and fill volumes? Explain any one of them in detail.

Q4) A 10-acre drainage area consists of 2-acre parking area (C = 0.9), 4 acres of lawn (C = 0.3) and remaining area with trees (C = 0.3). Intensity of 10 yr. design storm is 4 inches per hr. Calculate the peak rate of runoff. **[10]**

P.T.O.

SECTION - II

Q5) Explain with diagrams storm water drainage system used for sub-surface drainage. **[10]**

Q6) State the considerations for grading of paved areas. Show the desired surface slopes with diagrams for road, pathway, pedestrian ramp and vehicular ramp. **[10]**

OR

Explain contour signatures with appropriate sketches.

Q7) Draw a plan, cross section of a typical road (8 m wide + 1.5 m wide pathway + 1.5 m wide swale) and minimum 3 contour signatures for the same with reference spot level as 10 meter on the centerline of the road. **[15]**

Given:

a) Longitudinal slope for the road: 4%.

b) Road crown: 0.10 m.

c) Longitudinal slope for the swale: 4%.

d) Pathway slope away from the road: 2%.

e) Curb height: 0.2 m.

f) Swale depth: 0.10 m.

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

P1416

[3767]-1159

M.Arch. (Landscape Architecture)

THEORY OF LANDSCAPE ARCHITECTURE - I

(Sem. - I)

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

Instructions to the candidates:

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

SECTION - I

Q1) Describe the relationship of man with nature in prehistoric times with examples. **[10]**

Q2) Compare the use of water in Persian and Chinese tradition of landscape design. **[10]**

Q3) Make a comparison of French baroque and Italian renaissance, Landscape Design. **[10]**

Q4) Explain with respect to siting, organization of space, Mughal gardens in India. Draw illustrative sketches. **[10]**

Q5) Explain the English romantic gardens. Draw illustrative sketches. **[10]**

SECTION - II

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

a) Borrowed views.
b) Axial Gardens.
c) Hanging gardens of Babylon.
d) Humphrey Repton.
e) William Kent.
f) Parterres.

P.T.O.

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

a) Landscape symbolism in ancient India.

b) Landscape Design of Alhambra in Spain.

OR

Q8) Explain the historical influences which you think have had an effect on contemporary attitudes to the design of landscapes in India? **[10]**

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

P1417

[3767]-1164
F.Y. M.Arch.
(Architectural Conservation)
Structural Conservation Materials and Techniques - II
(Sem. - II) (Theory)

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

Instructions to the candidates:

1) ***Section I and Section II have to be solved in separate sheets.***
2) ***Question No. 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 in detail the techniques involved in the preservation of wall paintings. **[10]**

Q2) Elaborate the different types methods used in preservation and consolidation of clay elements. **[10]**

Q3) Describe any two techniques used for cleaning and preservation of stone. **[10]**

Q4) What are solvents? Classify their types and state the properties and uses. **[10]**

Q5) Describe any one new material used in structural conservation practice. **[10]**

Q6) Describe the preservation techniques used for treatment of ferrous metals. **[10]**

SECTION - II

Q7) Write short note (any One). **[5]**

a) Sources of damp in masonry structures.

b) Structural failure of roofing systems.

Q8) Define NDT. Describe any three techniques in detail. **[10]**

P.T.O.

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

Q10)Differentiate between Eastern and Western domes. **[10]**

Q11)Describe the interventions for strengthening of load bearing wall. **[10]**

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

P1418

[3767]-1165

M.Arch. (Architectural Conservation)

613108 : Conservation Management

(Sem. - II) (Revised)

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

Instructions to the candidates:

1) ***Solve any four questions from Section I.***
2) ***Q No. 7 in Section II is compulsory, solve any two questions from Q. No 8 to Q. No. 11.***
3) ***Figures to the right indicate full marks.***

SECTION - I

Q1) What are the fundamentals of management? **[10]**

Q2) What are the various processes involved in 'conservation management'? **[10]**

Q3) Explain the significance of 'planning is conservation management'. **[10]**

Q4) Explain the term 'heritage economics' with reference to conservation. **[10]**

Q5) Explain the socital values ascertained to heritage and its contribution to heritage management. **[10]**

Q6) Explain the importance of public participation in conservation management. **[10]**

SECTION - II

Q7) Discuss any one of the following: **[15]**

a) Heritage as a 'Superior commodity'.

b) Intrinsic value of heritage.

Q8) Explain the role of Visitor Management conservation. **[10]**

P.T.O.

Q9) What is carrying capacity of a heritage site? How does it affect the heritage place? **[10]**

Q10) What are the conflicting factors in visitor management of a religious place? Give your opinion on how they can be resolved. **[10]**

Q11) State how the specifications of Conservation Project differ from the specifications for new works. **[10]**

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

P1419

[3767]-1167

First Year M.Arch. (Environmental Architecture)

ENVIRONMENTAL LAWS AND LEGISLATION

(613207) (Sem. - II) (Theory) (New)

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) What is the difference between 'reserved forest' and 'protected forest'? Explain the difference between the restrictions of both types of Forests. **[15]**

OR

Explain the institutional set-up to protect and conserve the environment in India.

Q2) What solutions have been worked out under Energy Conservation Act, 2001? Explain the importance of Electricity Conservation Building Code. **[15]**

OR

What are the types of waste? What is the current position of Landfill sites in India?

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

a) Costal Regulation Zone.

b) Explain EIA as a tool for protection of Environment.

c) Fly Ash Notification.

d) Rain Water Harvesting.

SECTION - II

Q4) How the proper implementation of Town Planning Act can conserve and protect the environment. **[10]**

OR

The self certification systems for green buildings can save the energy consumption.

P.T.O.

Q5) Bio-diversity convention is a set of specific principles to conserve the illegal use of bio-diversity and to protect indigenous knowledge. **[10]**

OR

Flexible Mechanisms have been adopted to reduce carbon emissions in United Nations Framework convention for Climate Change.

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

a) Center for Science and Environment and Delhi pollution.

b) Wind energy.

c) Eco-tourism Policy of Maharashtra.

d) NIMBY and 3R Principles.

e) Difference between 'end of the pipe solution' approach and 'at source reduction' approach.

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

P1420

[3767]-1168

First Year M.Arch. (Environmental Architecture)

ENVIRONMENTAL MANAGEMENT AND ECOLOGICAL LAND PLANNING

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

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) Write briefly (Any Two). **[2×10=20]**

a) You are the CEO of a company which would like to establish an ISO-14001 Environmental Management System. Describe at least three specific requirements that a CEO has to fulfill as the "top management" to successfully establish ISO-14001.

b) Describe (with examples) the role, responsibility and authority normally assigned to the Management Representative of ISO-14001 Environmental Management System.

c) Describe the environmental impacts of the activities and services of an Architect.

Q2) Write short notes on (Any four). **[4×5=20]**

a) Cradle to Cradle principle.

b) Continual Improvement.

c) PDCA Cycle.

d) Greening the Supply Chain.

e) Eco Design.

f) Amenity value.

P.T.O.

SECTION - II

Q3) Write briefly (Any Two). **[2×10=20]**

a) What is biome? Write a note on any one of the following biomes w.r.t. climate, natural resources and biodiversity.

i) Freshwater.

ii) Desert.

iii) Tundra.

b) What is landscape ecology? Write a note on structural and functional elements and changes in the landscape with ecological significance of each element.

c) Write a detailed note on Key to Restoration.

Q4) Write short notes on (Any Three). **[3×5=15]**

a) Habitat.

b) Habitat Specialist Species.

c) River ecology.

d) Classification of Plants.

e) Deciduous vegetation.

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

P1421

[3767]-1169

M.Arch. (Landscape Architecture)

LA-206 : LANDSCAPE TECHNOLOGY - II

(Sem. - II) (Credit System Syllabus)

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

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Section I carries 40 marks and Section II carries 35 marks.***
3) ***Assume necessary data if required.***
4) ***Draw diagrams / sketches wherever necessary.***
5) ***Answers to the two sections should be written in separate answer books.***

SECTION - I

Q1) Explain the landscape considerations while designing scenic roads. **[10]**

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

a) Explain the term disturbed landscapes with examples.

b) Explain landscape engineering measures for watershed areas.

c) Explain landscape engineering measures for restoration of quarries.

SECTION - II

Q3) Describe landscape engineering measures for landfill sites. **[15]**

OR

Describe Environmental issues related to wastelands.

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

a) Urban waterfronts areas and role of a landscape architect.

b) Environmental impacts of a mining site.

c) Vertical landscapes.

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

P1422

[3767]-1170

M. Arch. (Landscape Architecture)

THEORY OF LANDSCAPE ARCHITECTURE - II

(Sem. - II)

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

Instructions to the candidates:

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

SECTION - I

Q1) What are the ideals of the 'Garden city movement'? Give examples of towns planned in the early 20th century. **[10]**

Q2) Write a note on contemporary Landscape Architecture in India in context with the current issues and trends. **[10]**

Q3) Explain the origin of public parks and park systems. What contributions can the later make in city planning? **[10]**

Q4) What is Landscape structure? Explain with examples. **[10]**

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

SECTION - II

Q6) Short notes on any five of the following: **[25]**

a) Cultural Landscapes.
b) Lunuganga Estates, Sri Lanka.
c) Prospect – Refuge Theory.
d) Geoffrey Jellicoe.
e) Ian McHarg.
f) Ecological role of landscape.

P.T.O.

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

a) Peter Walker.

b) Prof. Ravindra Bhan.

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**

P1423

[3767]-1181

Second Year M. Arch.

(Environmental Architecture)

713201 : Renewable Energy Systems and Environmental Technologies

(Theory) (Sem. - III) (New Syllabus) (2008 Course)

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

Instructions to the candidates:

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

SECTION - I

Q1) Compulsory question: **[25]**

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

The apartment features are as follows:

a) The apartment is located in a high income residential neighborhood, consisting of 3 BHK flats, with 3 bathrooms each flat.

b) There are 2 flats per floor and 9 floors in the building.

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

d) Calculate the terrace space available, assuming that each flat is averagely 1400 sq ft.

e) Assume all other necessary details.

Q2) Write short notes on the following (Any Two): **[2×5=10]**

a) Environmental hazards associated with Nuclear Energy.

b) Solar PV

c) Conventional Waste water treatment in Pune.

d) Issues related to Solid Waste Management in India.

P.T.O.

SECTION - II

Q3) Compulsory question: **[30]**

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

The township has the following features:

a) The site area admeasures approx. 1,25,000 sq m and is located on the fringe of a city in Maharashtra.

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

c) The proposed built up is approx. 75,000 sq. m. The residential units (flats) proposed are approx. 325, with three commercial IT buildings and one hotel, inviting around 3000 guests / employees in the township every day.

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

Q4) Write notes on the following (Any Two): **[2×5=10]**

a) Biomass.

b) On Site Wind Power generation.

c) Non energy Intensive treatment of waste water.

d) Vermicompost.

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

P1424

[3767]-1182

Second Year M. Arch.

(Environmental Architecture)

EA-315 : ENVIRONMENTAL IMPACT ASSESSMENT

(Sem. - III) (New Syllabus) (Theory)

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

Instructions to the candidates:

1) ***Q. No. 1 and Q.No. 3 are compulsory.***

2) ***Supplement the answers with sketches / diagrams as necessary.***

SECTION - I

Q1) Compulsory question: **[20]**

Write in detail about the Matrices and Checklists as EIA methodologies. List and write about the various types of matrices and checklists. Describe the Leopold Matrix and write the merits of this type of Matrix, supported by a concept sketch of the same.

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

a) Evaluation of Alternatives in an EIA.

b) EIA Planning and Management.

c) Screening and Scoping for EIA.

d) Stepped Matrices.

SECTION - II

Q3) Compulsory question: **[20]**

Write about Impact Identification in EIA studies. What is the methodology that you will employ? Explain the Impact Prediction in EIA studies. Write briefly about the methodologies that you will employ for Impact Prediction for Air Quality.

Q4) Write notes on the following (Any Three): **[5 Marks Each]**

a) Mitigation Measures.

b) Environmental Indices and Indicators.

c) Benefits of an EIA process.

d) EIA report.

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

P1425

[3767]-1188

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

LANDSCAPE CONSERVATION

(Sem. - III)

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

Instructions to the candidates:

1) ***Solve Section I and Section II on separate answer sheets.***
2) ***Neat sketches must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

SECTION - I

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

a) Significance of environmental conservation.

b) Water conservation.

c) Energy-efficient designed landscapes.

d) National and International approach towards conservation of landscape.

Q2) Explain the landscape conservation approach for heritage zones with examples. **[20]**

SECTION - II

Q3) a) Suggest a landscape ecological approach to conserve the flora and fauna of a place. **[20]**

b) State the significance of conserving Flora and Fauna of a place with examples. **[15]**

OR

Q4) a) State the significance of conservation of forest land in India and instruments helping the same. **[20]**

b) Explain the significance of National Forest policy in India. **[15]**

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

P1426

[3767]-1189

M. Arch. (Landscape Architecture)

(LA-312) : Environmental Legislation and Economics

(Sem. - III) (New)

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

Instructions to the candidates:

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

SECTION - I

Q1) Fundamental rights have wide powers to save the environment. **[15]**

OR

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

Q2) Explain in detail 'noise' as a pollutant and the details of Re: Noise Pollution Case analysed by the Supreme Court of India. **[15]**

OR

Explain the wetland conservation notification enacted by the Central Government.

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

a) Wildlife and economics attached with the wildlife.

b) Rio Declaration.

c) Role of Landscape architect in urban environment.

d) Air Pollution and Noise Pollution.

SECTION - II

Q4) 73rd and 74th Amendment act has given the power to the local governments to protect and preserve the local environment. **[10]**

OR

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

P.T.O.

Q5) Provision for 'landfill sites' has been incorporated in the Municipal Solid Waste Rules, 2000. What is the economic impact of non-implementation, after 10 years from the enactment of legislation? **[10]**

OR

Explain the economic value attached with different ecosystems and impact of urbanization on the economy of the ecosystem.

Q6) Short notes (Any Three): **[3×5=15]**

a) E-waste Management.

b) Food pyramid and food chain.

c) Eutrophication.

d) Copenhagen Conference.

e) International Environmental Law.

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

P1427

[3767]-1117

First Year M. Arch. (Environmental Architecture)

(EA-207) : POLICIES, PROGRAMS, LAWS AND LEGISLATION

(Sem. - II) (Old)

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) What provisions have been made by the Bureau of energy efficiency for proper use of energy under Energy Conservation Act, 2001. **[15]**

OR

All the industries dealing in Hazardous Substances have to take the Public Liability Insurance Policy. Explain with background.

Q2) Tsunami disasters have cause massive destructions in India. Can proper Costal Management reduce the possible impacts of such disasters? **[15]**

OR

Pollution Control Boards are not only to check the pollution levels but are also there to take the cognizance and to curb the pollution. Explain in the light of powers and functions of the pollution control board.

Q3) Write any two of the following: **[20]**

a) Need for Environment Protection Act, 1986.

b) E-Waste : new source of pollution.

c) Fundamental duties.

SECTION - II

Q4) The change in land use patterns impact on the environmental economy. **[15]**

OR

Explain the activity and objectives of ENVIS.

P.T.O.

Q5) What is the outcome of the Copenhagen conference? Explain in the light of upcoming climate change politics. **[15]**

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 Four): **[20]**

a) Tiger Conservation and bio-diversity.

b) Rio-Declaration.

c) Eco-labeling.

d) BRT.

e) Municipal Solid Waste issues in Pune.

f) River Pollution and cleaning projects.

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

P1428

[3767]-1124

M. Arch.

(Landscape Architecture)

LA-312 : ENVIRONMENTAL LEGISLATION AND ECONOMICS

(Sem. - III) (Old)

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) Public Interest Litigations have played important role in Protection if India's environment. **[15]**

OR

Explain the background and importance of Water (prevention and control of pollution) Act, 1974.

Q2) Discuss the importance and need of Costal Management Zones in the light of tsunami disasters. **[15]**

OR

Proponents dealing with Hazardous waste management and handling have to take public liability insurance. What is the process and pre-requisite to develop an industry generating hazardous waste?

Q3) Write short notes (Any Four): **[20]**

a) Local self Governments and Environment protection.

b) International environmental law.

c) Ministry of Environment and Forest.

d) Fundamental rights.

e) Eco-sensitive zones.

f) Bio-medical Waste Rules, 1998.

P.T.O.

SECTION - II

Q4) Transport in the metro-cities play a prominent role in air pollution. Suggest the essential alternatives and evaluate the feasibility. **[15]**

OR

Environmental economics change with the land use patterns. Explain with the status of Urban Forestry in the Metros.

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

OR

What are the environmental benefits and harms of the development of Special Residential Townships neat Metros?

Q6) Write short notes (Any Four): **[20]**

a) Carbon Sequestration.

b) Landscape development and energy conservation.

c) Western Ghats and Maharashtra.

d) Biodiversity Park in Pune.

e) Role of Dense canopy cover and river life.

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

P1429

[3767]-1166
M.Arch.
AC-316 : INTRODUCTION TO ARCHAEOLOGY AND MUSEOLOGY

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

Instructions to the candidates:

1) ***Attempt any five questions.***
2) ***Each question carries equal marks.***

Q1) What are the various kinds of documentation techniques employed in Museums? Give suitable examples for the process of documentation of coins, paintings and ivory objects in a museum.

Q2) Explain various types of artefacts found at archaeological sites.

Q3) Design the architecture of a Multi-purpose Museum to be erected in your city. Give suitable architectural plan and display techniques you will employ in this museum.

Q4) How are archaeological sites located? Discuss various field methods of locating archaeological sites.

Q5) What are the preservation techniques employed for art objects like stone, manuscript and textiles?

Q6) Explain the role of various sciences in archaeology.

Q7) Write an essay on different branches of archaeology.

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

P1550

[3767]-1161

M.Arch. (Computer Applications)

HUMAN COMPUTER INTERFACE

(CA-102) (613402) (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 indicate full marks.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) What are different Human Factors that are to be considered while designing the user interface? Explain with the help of suitable examples. **[7]**

b) Describe important differences between STM (Short-Term Memory) and LTM (Long-Term Memory). **[6]**

Q2) What are different Human Factors that are to be considered while designing the user interface? What important issues need to be considered while designing an interface for users with disabilities? **[12]**

Q3) a) Explain EIGHT golden rules of interface design. Give suitable examples to justify your answer. **[6]**

b) Explain how GOMS and the keystroke-level model support the interaction design process. **[6]**

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

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

P.T.O.

Q5) a) Consider two different, ATM machines. One giving away the cash and then ejecting the bank card and the other one ejecting the bank card first and then dispensing the cash. Which is a better interface from interaction design point of view? Justify. **[7]**

b) Explain the guidelines for data display and data entry. Explain with suitable examples. **[6]**

SECTION - II

Q6) a) What is direct manipulation technique? Can we use this principle in architectural design? **[7]**

b) Explain any four metaphors used in this interaction style. **[6]**

Q7) Discuss important design issues involved in designing a web page. **[12]**

Q8) a) Explain an importance of hypertext over linear paper document. List important considerations for creating a good hypertext document. **[6]**

b) How should an error condition be handled in interface design? **[6]**

Q9) a) What is Information Visualization? Explain visual information seeking rule. **[6]**

b) What are the vital features of online manual? What are the negative side effects of online documentation? **[6]**

Q10) List and explain the steps of Usability Testing. What are some of the limitations of such testing? **[12]**

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

P1551

[3767]-1171

M.Arch. (Computer Applications)

DIGITAL COMMUNICATION AND MULTIMEDIA SYSTEMS

(CA-207) (613406) (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) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Use of logarithmic tables, slide rules and electronic pocket calculator is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) What is multimedia? Write business applications for multimedia. Also explain how Virtual reality is an extension of multimedia. **[12]**

Q2) a) How digital audio is represented and stored? What are the factors which affects quality of digital recording? **[6]**

b) What is MIDI? Explain how it is different from digital audio. **[6]**

Q3) a) Explain bitmap and vector drawn types of images. **[6]**

b) Draw and explain RGB and CMYK Color models. **[7]**

Q4) How compression is achieved in images. What are the main steps in JPEG image compression? **[12]**

Q5) Write short note on any **THREE** of the following: **[12]**

a) 2D Animation.

b) CDROM.

c) Asynchronous communication.

d) Speech.

P.T.O.

SECTION - II

Q6) What is computer generated animation? Explain various principles of animation. **[12]**

Q7) a) Explain the usage of multimedia on internet. **[7]**

b) Explain briefly optical devices for multimedia applications. **[6]**

Q8) a) How text can be generated and used in multimedia applications? **[6]**

b) What are the requirement for making a successful animation? **[6]**

Q9) a) Give names of some multimedia softwares available in the market. Write their features. **[7]**

b) Give the programming languages used for making hypermedia applications? Explain with example a hypermedia document. **[6]**

Q10) Write short note on any **THREE** of the following: **[12]**

a) NTSC

b) Sound cards.

c) Scanners.

d) Interactive TV.

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

P1552

[3767]-1172

M.Arch. (Computer Applications)

ARCHITECTURAL VISUALIZATION

(Old & New) (Sem. - II)

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

Instructions to the candidates:

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

SECTION - I

Q1) How has Digital technology revolutionized Design education? Explain referring to the concepts of Virtual studio and the inclusion of IT and programming for design. **[13]**

Q2) Discuss the software components for immersive and non-immersive environments. **[12]**

OR

Discuss the hardware components for creating Virtual Reality. **[12]**

Q3) Explain the various Building Information Modeling and CADD software. **[12]**

OR

Explain the various visualization software with file extensions and compatibility. **[12]**

SECTION - II

Q4) What are the typical features found in 2D and 3D Shape grammar and how are they useful in architectural design? **[13]**

P.T.O.

Q5) Explain in short:

a) Morphogenetic design strategies. **[6]**

b) Hyper architecture and hyperbodies. **[6]**

OR

Explain in short:

a) Liquid architecture. **[6]**

b) Topological development. **[6]**

Q6) Discuss the advances in digital experimentation with reference to parametric and Generative processes. **[13]**

OR

Discuss non-linear geometries and their applications in architectural design. **[13]**

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

P1553

[3767]-1173

M.Arch. (Computer Applications)

THEORY OF DIGITAL ARCHITECTURE - II

(New) (Sem. - II)

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) How has digital technology influenced science and cultural studies with respect to architecture? **[13]**

Q2) Discuss the revolution in entertainment industry with the advent of digital technology. **[12]**

OR

How can you integrate virtual environments in architectural design? **[12]**

Q3) How have various digital tools helped in the design process? **[12]**

OR

Explain the various operations in Algorithmic architecture. **[12]**

SECTION - II

Q4) Explain the concept of folding in architecture with reference to topological developments. **[13]**

Q5) How have designers used shape grammar to identify the grammar of any building typology? **[13]**

OR

Describe multiplication and replication processes in shape grammar for form generation. **[13]**

P.T.O.

Q6) Write a critique on digital architecture taking a position on the medium. **[12]**

OR

Write a short notes on the philosophy and work of : (any two) **[12]**

a) John Frazer.

b) Neil Spiller.

c) Harish Lalwani.

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