Total No. of Printed Pages:2

SUBJECT CODE NO: H-650
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
ABCM. VII
(REVISED)

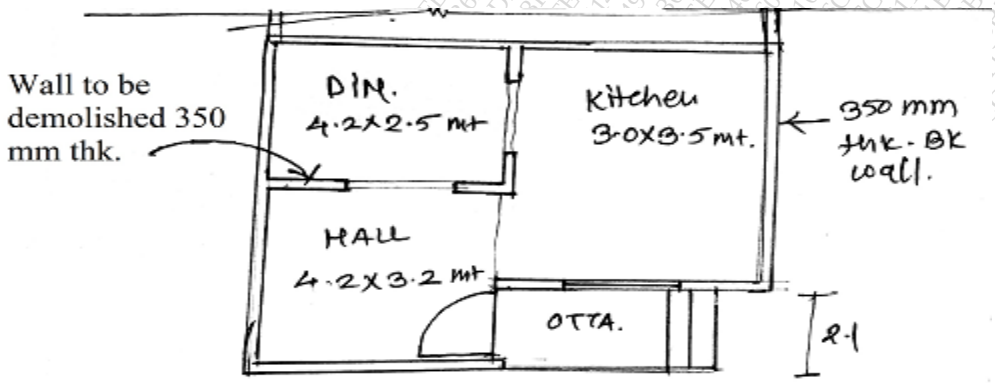
[Time: Four Hours] **[Max.Marks:100]**

Please check whether you have got the right question paper.

N.B i) Solve section – A on drawing sheet & section – B on answer sheets.
ii) Solve any Two questions from section A and any Two questions from section B.
iii) Draw proper sketches wherever necessary.

Section A

Q.1 A Two storied load bearing residential building with a wall thickness 350 mm internal & external. A wall between the hall & dining with sizes 4.2×3.2 mt & 4.2×2.5mt respectively is to be removed to create a big sized/ great hall on the ground floor. Refer sketch :- 35



- Structure – G +1, Load bearing

* Give economical solution to the problem & explain the procedure adopted for the construction along with material specifications.

Drawing requirements:-

i) Key plan & section
ii) Detail plan & section's
iii) All joinery details
iv) Isometric views of important joints

Q.2 A plot admeasuring 15.0mt×30.0mt facing a 9.0mt wide road is affected by road widening. 35

The proposed road will be 24.0 m. wide. The plot is affected by 2.0 mt along the length of the plot. The plot remaining after road widening will be 15.0mt×28.0mt.

A bungalow is existing on the plot which is a load baring structure due to road widening, the commercial value of the plot has increased.

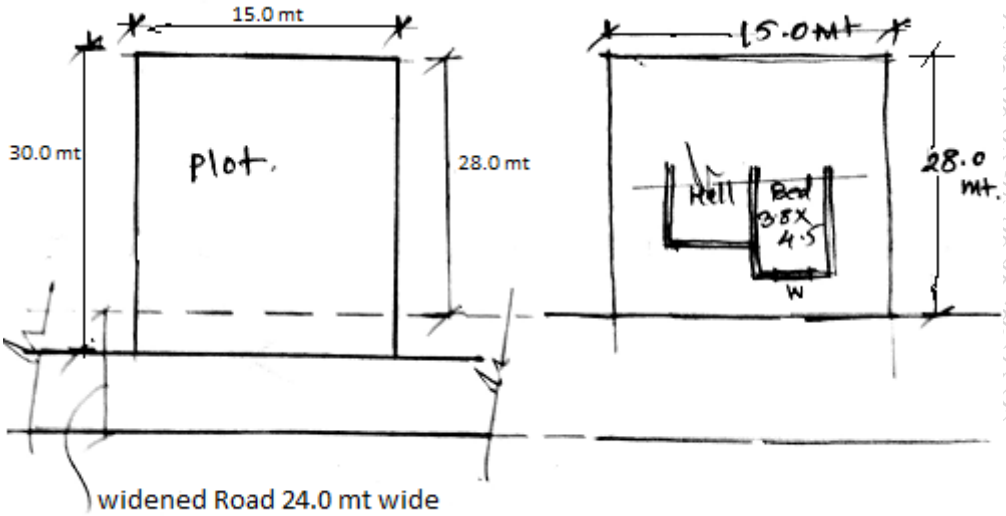
The owner of the bungalow wants to convert a bedroom facing road into a shop for daily need. The size of bed room is 3.8mt×4.5mt. The front wall of bed room will be converted into a shop with an opening of 2.7mt×2.5mt in height.

The height of building is 3.5mt below the slab. It is required to fix a M.s.rolling shutter which will be covered with plain A.C. sheets.
The bedroom is an existing window with the size 2.0×1.2mt & fixed 0.9mt above floor. The Plinth level is 750mm. above G.L.

Drawing requirements:-

- Plan, Elevation, sections
- Large scale details of A.C. sheet & m.s.frame fixing.
- Give process of construction with all specifications.

Please refer sketch –



Q.3 Draw neat & labeled sketches with construction details of any four. 35

i) Fixing & working of roof ventilater for an industrial shed.
ii) Fixing detail of marble cladding for a wall of a hotel reception.
iii) Details of the water walls.
iv) Various components of PEB construction.
v) Fixing details of permeable paver blocks for parking area of a college campus.

Section B

Q.4 What characteristics define the energy saving building materials? 15

Q.5 What are recycled materials? Explain one in detail with its uses. 15

Q.6 What are fundamental characteristics of smart materials? 15

Total No. of Printed Pages:1

SUBJECT CODE NO: H-638
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. ARCH. (CBCS)
D.F.A.- I

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Solve any two questions from section A.
2) Solve any four questions from section B.
3) Draw suitable sketches wherever required.

Section A

Q.1	How do you compare the work of an architect with that of artist, sculptor and technologist?	20
Q.2	What do you mean by visual perception and explain its principles with suitable examples.	20
Q.3	Explain in detail elements & principles of design with suitable sketches.	20

Section B

Q.4	Write short notes on visual and temporal art.	10
Q.5	What do you mean by seven lamps of architecture? Explain each lamp in detail with the help of examples from history.	10
Q.6	What is mass and space relationship? Explain it in detail.	10
Q.7	How the fenestration patterns enhance the aesthetics of building?	10
Q.8	Write note on spatial organization of spaces.	10

Total No. of Printed Pages:01

SUBJECT CODE NO: H-613
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch (CBCS)
Design Fundamentals in Architecture-II

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Solve any two questions from section A.
ii) Solve any four questions from section B.
iii) Draw suitable sketches wherever required.

SECTION – A

Q.1 Discuss "Good knowledge of structural concept can help to achieve structural efficiency in a building". 20

Q.2 What do you mean by Circulation? Explain its pattern and types. 20

Q.3 How construction techniques/ materials responsible for the development of form & aesthetics of building? 20

SECTION – B

Q.4 Describe impact of culture on built environment of early civilization especially of Egypt? 10

Q.5 Write short notes: 10

- Site & surroundings.
- Positive & negative spaces.

Q.6 Write short notes: 10

- Building & site relationship.
- Path and space relationship

Q.7 What do you mean by thermal factor & what are the factors responsible to achieve thermal factor? 10

Q.8 What are different Styles of architecture and trends in architecture? 10

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-616
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch. (CBCS)
History of Architecture-I

[Time: Three Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B
i) Question No. 1 & 6 are compulsory
ii) Attempt any three questions from the remaining, from each section.
iii) Elaborate with sketches whenever necessary.
iv) Section A & B are to be written separately.
v) Each section carries 40 marks

Section ' A'

Q.1 Fill in the blanks or & choose the correct answer -& answer correctly.

I. A typical residence of Indus Valley civilization is planned around ----------. 02
   a. Well
   b. Grainary
   c. Court

II. The road pattern of Indus-Valley cities is known as_____ 02
   a. Grid-iron
   b. Diagonal
   c. Curvilinear

III. State any four contributions in architecture by Buddhism. 04

IV. Choose the correct one __ 02
The shape of Chaitya hall is _____

   I. Rectangular
   II. Circular
   III. Oval

Q.2 Explain with sketches the significance of 'Chaitya hall' & 'Vihara' 10

Q.3 Sketch & explain a typical 'Orissan' temple 10

Q.4 Write short notes ___ with sketches.

I. Ashokan pillars 04
II. Stupa at Sanchi 06

Q.5 Describe the salient features of 'Lingoraja' temple with neat sketches. 10

Section B

Q.6 Fill in the blanks & write the correct answers__

a) The earliest temple examples in India are___(Any two) 02
   I. Virupaksha temple
   II. Ladkhan temple
   III. Durga temple,Aihole
   IV. Temple at Sanchi

b) Ashokan monolithic column consists of _____ & _____as main features. 02
   I. Wheel
   II. Animal capital
   III. Lions
   IV. Carving of flowers

c) Buddhist monastry consist of $\longrightarrow$ 04
   State any four parts or structures of Buddhist monastery.

d) State any two parts of Northrn Indian temple shikhara____ 02
   I. Amalaka
   II. Vimana
   III. Urushringas
   IV. Oblong Kalasha.

Q.7 Write short notes with sketches_____
   I. Rathas at Mahabalipuram(Any two) 06
   II. Monolithic pillar at 'Kailasa' at Ellora. 04

Q.8 Sketch the column orders of Dravidian style temples.(minimum 4 column orders) 10

Q.9 Describe with sketches___(Any one) 10
   I. Sun temple at Modhera
   II. Sun temple , Konark.
   III.

Q.10 Write notes with sketches___
   I. Evolution of shikhara in temple architecture 06
   II. Evolution of 'Gopuram' 04

Total No. of Printed Pages:4

SUBJECT CODE NO: H-609
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch (CBCS)
Theory and Design of Structure-I

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B
i) Question No. 1 & No. 6 are compulsory
ii) Out of remaining questions, please solve any two questions from each section
iii) Assume suitable data, if necessary

Section A

Q.1 Multiple Choice Questions. 10

1) The unit for stress is
   a) Newton b) sigma c) Rascal d) Pascal

2) The unit for strain is
   a) Newton b) Pascal c) there is no unit for stain d) sigma

3) The unit for modules of elasticity is
   a) N/mm^2 b) N/m^2 c) m^2/N d) N

4) The strain to the right angle to the direction of applied force is known as
   a) Young's Modules
   b) Lateral Strain
   c) Longitudinal strain
   d) Stress

5) A body has only one center of gravity. This statement is
   a) True b) False c) neither true nor false d) none of the above

6) For a half circle, center of gravity along y axis is at a distance of_____ from its base along diameter
   a) $\frac{3r}{4\pi}$ b) $\frac{4r}{3\pi}$ c) $\frac{3\pi}{4r}$ d) $\frac{4\pi}{3r}$

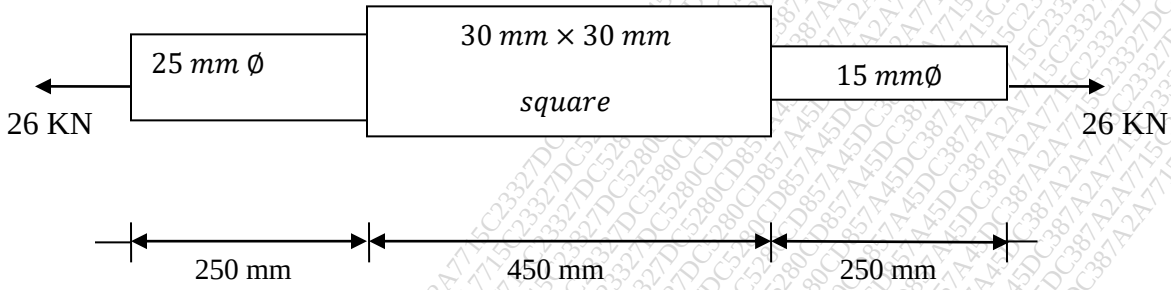
7) A cantilever beam has _____supports
   a) None b) One c) Two d) Many

8) A simply supported beam does not have_____ support
   a) Simple b) Roller c) Rigid d) Pin

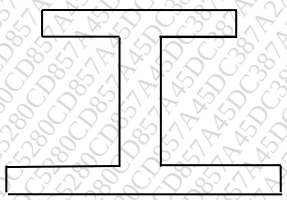
9) A uniformly distributed load is expressed in
   a) KN/m b) N c) N-M d) mm^4

10) When shear force is zero, bending moment is_____
a) Zero b) minimum c) maximum d) equal to the load

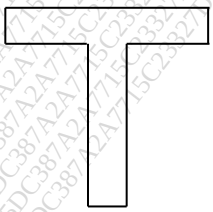
Q.2 A bar consists of three parts as shown in the figure find the stresses in three parts and total extension of the bar for an axial pull of 26 KN. Take $E = 2 \times 10^5 N/mm^2$ 15



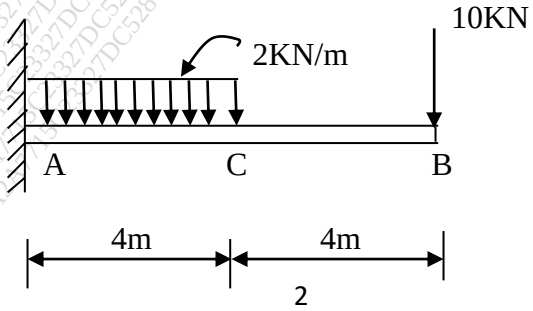
Q.3 Find the centroid of the lamina as shown in the figure 15



Q.4 Find the moment of inertia of T section about xx axis through its centroid 15



Q.5 Draw shear force and bending moment diagrams for the cantilever beam as shown 15



Section B

Q.6 Multiple Choice Questions. 10

1) A framed structure is imperfect, if the number of members are_____(2j-3) where j is the number of joints
   a) Less than b) equal to c) greater than d) either a) or c)

2) A redundant frame is also called as_____ frame
   a) Perfect b) imperfect c) deficient d) none of these

3) The method which is employed to find out forces in the members of a frame is called as
   a) Method of frames b) method of members
   c) Method of joints d) method of forces

4) In the equation $\frac{M}{I} = \frac{\sigma}{Y} = \frac{E}{R}$ R stand for
   a) Resistance b) Ratio c) Radius of curvature d) moment

5) In theory of pure bending, stresses across section changes from compressive to tensile at
   a) Top fibre b) bottom fibre c) nowhere d) neutral axis

6) _____ support is capable of carrying bending moment
   a) Roller b) smooth c) fixed d) hard

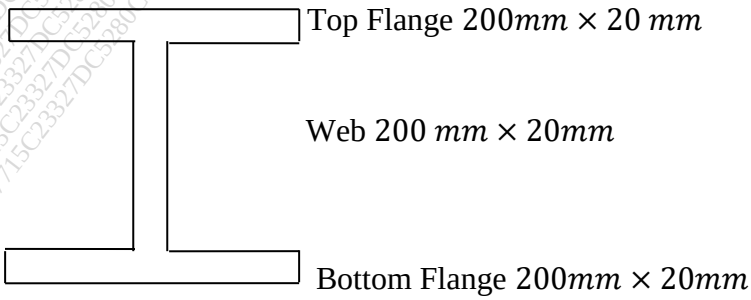
7) Uniformly distributed load is spread_____ over its length
   a) Little bit b) varying c) at a point d) uniformly

8) In a cantilever beam, point of contraflexure will not occur. This statement is
   a) True b) false c) neither true nor false d) none of the above

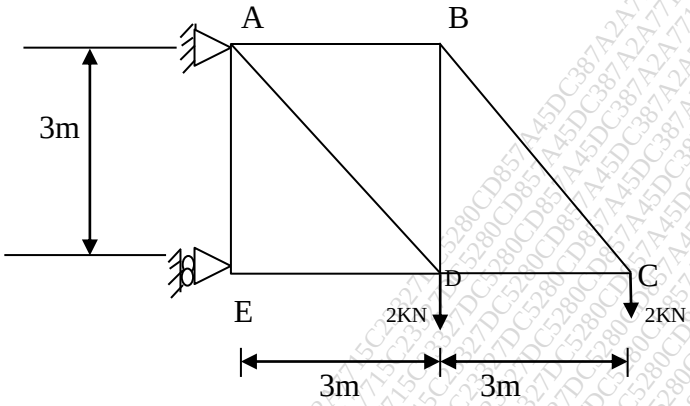
9) If shear force diagram shows sloping line then corresponding bending moment diagram will have_____ line
   a) Straight b) parabolic c) cubic d) none of the above

10) Roller support is cabable of taking load only in_____ direction to that of rollers
   a) Parallel b) across c) perpendicular d) none of the above

Q.7 A beam of I section as shown carries a u.d.l of 60KN/m on a span of 10m. calculate the maximum bending stresses produced due to bending 15



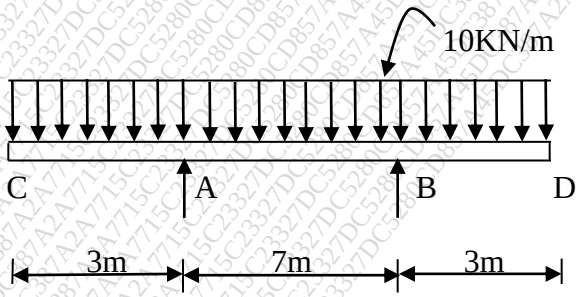
Q.8 Determine the forces in the members BC, CD and ED of the truss as shown in figure 15



Q.9 Answer the following: 15

a) What are different types of supports?
b) Explain perpendicular axis theorem
c) Write assumptions made in theory of pure bending

Q.10 Draw shear force and bending moment diagrams for the following bean 15



H-601

Total No. of Printed Pages:03

SUBJECT CODE NO:- H-601
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. Arch.
A. B. C. M. II
(REVISED)

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

Please check whether you have got the right question paper.

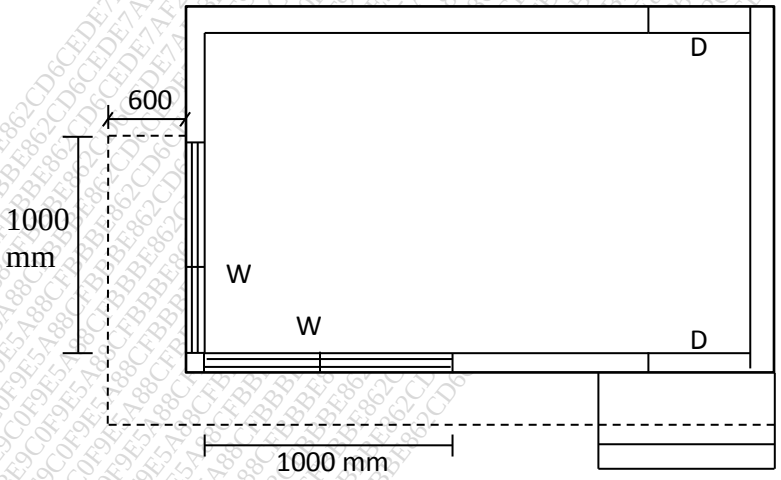
N.B
1) Answer any two questions from Section A & any three from Section B.
2) Section A must be solved on drawing sheets only. Answer to Section B may be solved on answer sheets.
3) Assume suitable data wherever necessary and mention it clearly.
4) Figures to the right indicate full marks.

Section A

Q.1 A living room of a bungalow is to be provided with a corner window in Teak wood. The size of room is 4.50 mt× 3.2 mt.

The window is placed at the corner as shown in fig.

- The wall are 230 mm thk bk wall.
- Width of one shutter is 500 mm.
- Window is fully openable and fixed 900mm above floor level.
- Total height of the window is 1.25 mt.



Draw:-

i) Plan, Elevation & Section – 1:10 11

ii) Draw large scale details of:-

a) Joint of T.w. post in the corner fixing to sill & head members of the window. 08

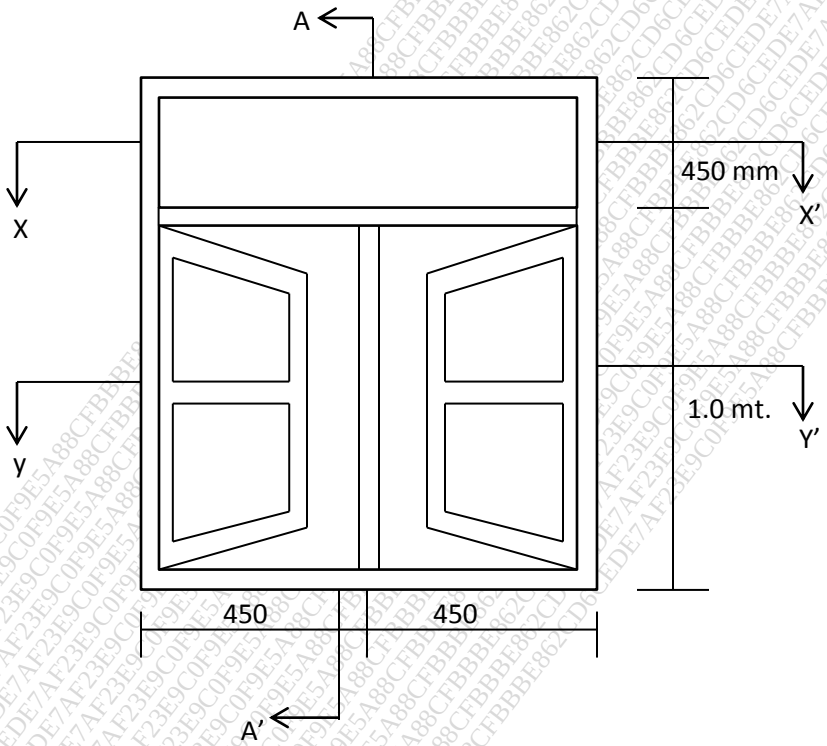
b) Fixing of glass. 08

c) Show the placement of lintel above the window. 08

Q.2 Draw neat sketches of the following (any three). 35

i) Fixing details of any two members of T.w queen post truss.
ii) Vertical pivoted window.
iii) Sliding and folding door
iv) T.w & glass Louvered window.

Q.3



Design a partly panelled & partly glazed two shuttered window with top hung glazed ventilator (as per given sketch)
Take Frame size 100× 75 mm & style - 75×30 mm.
The size of window [inc. ventilator] is 0.9 mt × 1.45 mt

1) Draw plan, at two levels- XX & at YY level. Elevation & section – [scale – 1:10] 14
2) Draw large scale details of:-
   a) Opening mechanism of top hung ventilator. 07
   b) Fixing of glass & style 07
   c) Fixing of T.w. panels to style. 07

Section B

Q.4	Explain with neat sketch the method of laying of ground floor timber flooring.	10
Q.5	What is proportioning in concrete? Explain water cement ratio.	10
Q.6	What is plastering? State its importance & explain method of plastering on old brick wall.	10
Q.7	What is gunite? Explain the process of guniting & mention its advantages.	10

Total No. of Printed Pages:01

SUBJECT CODE NO: H-648
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y. Arch
E.S.S. -III
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1) Q. No. 1 & Q. No.5 are compulsory.
2) Solve any two questions from each section of the remaining.
3) Assume suitable data wherever required.
4) Draw sketches wherever necessary.

Section A

Q.1 Explain with neat sketch various types of earthing. 20

Q.2 Explain in detail method of mounting & lighting control. 15

Q.3 Explain in detail electrical wiring systems in domestic & commercials buildings 15

Q.4 Explain with brief description, characteristics & applications different types of lamps. 15

Section B

Q.5 Explain with neat sketches: escalators. 20

Q.6 What Do you understand by Elevators (lifts). 15
Explain various types of elevators used in commercial buildings & complexes.

Q.7 Explain in detail different lighting schemes. 15

Q.8 What is N.B.C? Explain the various provisions made in NBC for electrical wiring & fittings for residential and commercial buildings. 15

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-641
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year ARCH
TDS-VII
(OLD)

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

Please check whether you have got the right question paper.

N.B
1. Solve any two questions from Section A and any three questions from Section B.
2. Assume suitable data, if necessary.
3. Use of non-programmable calculator, IS-800 and steel table is permitted.

Section A

Q.1	a)	What are the advantages of steel as a structural material?	7.5
	b)	Enlist the rolled steel sections with the suitable diagrams.	7.5
Q.2	a)	Explain the stress strain curve for mild steel.	7.5
	b)	Explain stepwise procedure of tension member of a roof truss with welded joints.	7.5
Q.3	a)	What are the types of riveted joints?	7.5
	b)	What are the advantages of welded connections?	7.5

Section B

Q.4	a)	Explain the different components of a roof truss with neat sketch.	10
	b)	Draw neat sketch of a beams with restrained and unrestrained compression flange.	05
Q.5	a)	Explain design producer of compression member of roof truss.	10
	b)	Draw a neat sketch of lacing and battening system.	05
Q.6	a)	What is the lateral stability of beams?	10
	b)	Explain the design of laterally supported beams.	05

Q.7 Write short notes: (any three) 15
a) Loads on roof truss
b) Slenderness ratio
c) Lug angle
d) Gusset plate
e) Importance of steel structure over RCC

Total No. of Printed Pages:03

SUBJECT CODE NO:- H-661
FACULTY OF SCIENCE AND TECHNOLOGY
S. Y. Arch (CBCS)
Theory and Design of Structure-II

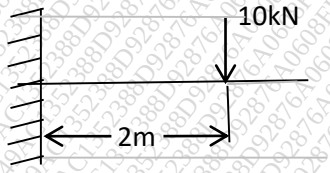
[Time: Three Hours] **[Mak.Marks:80]**

Please check whether you have got the right question paper.

N.B 1) Question No. 1 & 5 are compulsory.
2) Solve any two from Q.2 to Q.4
3) Solve any two from Q.6 to Q.8

Q.1 Choose correct option for following (Each question 2M) 10

a) Shear force of following diagram

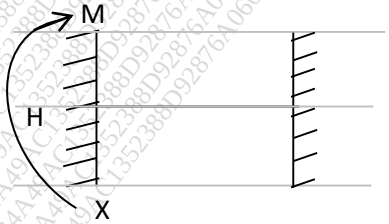


1. Rectangular 2. Square 3. Circle 4. Trapezoidal

b) ---------- support develop support moment.
1. Hinged 2. Simple 3. Fixed 4. Joint

c) Hinged support offers resistance against reaction
1. True 2. False

d) Name the support from following figure



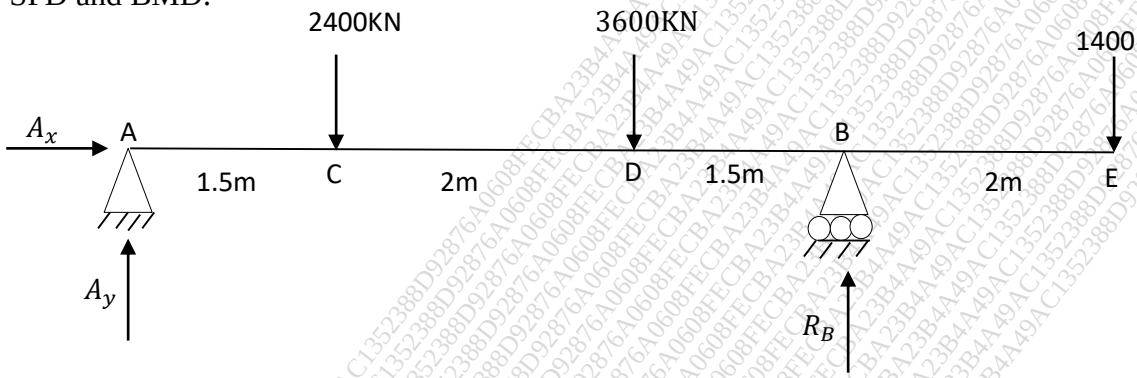
1. Hinge support 2. Fixed support 3. Free support 4. Roller support

e) Which stress comes when there is an eccentric load applied?
1. Shear stress 2. Bending stress 3. Tensile stress 4. Thermal stress

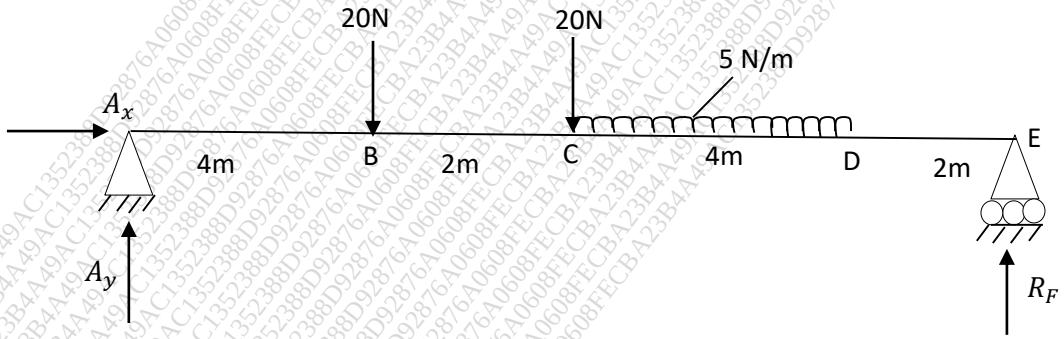
Q.2 Attempt any two:

a) Derive flexural formula 08
b) Explain with neat sketch types of loading 07
c) Explain with neat sketch types of beam 07

Q.3 Horizontal beam ABE is a hinged at a and supported on rollers at B. Span AB=5m and BE=2m. It carries point load of 2400KN, 3600 KN and 1400 KN at C, D and E respectively. AC=1.5m, CD=2m, DB=1.5m. All the point loads act vertically. Calculate support reactions and Draw SFD and BMD. 15



Q.4 A simply supported beam AE of span 12m carries two point loads and a ud1 as shown in fig. Compute support reactions and draw SFD and BMD. 15



Q.5 Choose correct option for the following. (Each question 2M) 10

a) While using slope deflection method, in which direction is moment taken as positive?
i)Clockwise ii) Anti-clockwise iii) Depend upon case iv) Depend upon loading

b) How many slope deflection equations are possible if four supports are there?
i) 0 ii) 3 iii) 4 iv) 6

c) Short column and long column are classified on the basis of
i) Slenderness ratio ii) diameter iii) Length iv) None of the listed

d) Steel column with slenderness ratio of 95 are
i) Short column ii) Long column iii) Very long column iv) None of the listed

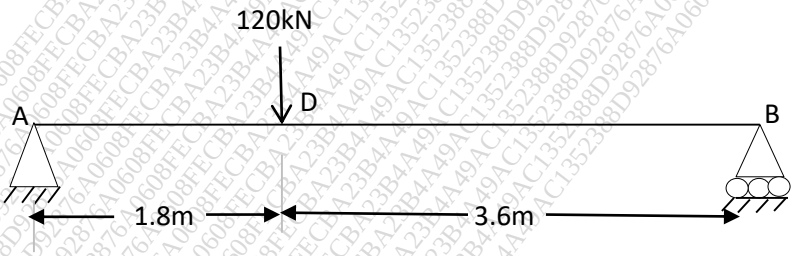
e) A beam which is supported on more than two support is called as ----------.
i)Fixed beam ii) Continuous beam iii) Cantilever beam iv) Simply supported beam

Q.6 Attempt any two

a) Analysis the statically indeterminate beam 08
b) Write short note on slenderness ratio 07
c) Write assumptions in the Euler's column theory. 07

Q.7 A horizontal beam shown in the fig. is hinged at A and supported on rollers at B. It carries a vertical load of 120 KN at D. For this beam, determine 15

i) The slope at A;
ii) Slope at B and
iii) The deflection at D
Take E= 200Gpa and I=$160 \times 10^6 mm^4$



Q.8 Attempt any two:-

a) Write down the limitations of Euler's formula. 08
b) Equivalent length of column (short note) 07
c) Difference between determinate and indeterminate structure. 07

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-660
FACULTY OF SCIENCE AND TECHNOLOGY
B. ARCH (CBCS)
Building Material-III

[Time: Two Hours] **[Max.Marks:40]**

Please check whether you have got the right question paper.

N.B
1. Q.1 and Q.5 are compulsory.
2. Attempt any two from the reaming from each section.

Section A

Q.1 Write correct answer

a) Melamine is Obtain from _____. 02
   i) Calcium Carbide & Methane
   ii) Calcium Chloride & Methane
   iii) Calcium Silicate & Ethane

b) Methyl methacrylate is also known as _____. 02
   i) Acrylic
   ii) P.V.C
   iii) FRP

c) Plastic are compound of_____ 02
   i) Carbon , Hydrogen , Nitrogen & Oxygen
   ii) Ethane , Methane, Calcium and Carbon
   iii) Calcium Silicate, Carbon, Methane & Oxygen.

Q.2 Explain Plywood, its advantages and disadvantages? 07

Q.3 Explain process of varnishing on wooden surface? 07

Q.4 Explain constitution of paints? 07

Section B

Q.5 Write True or False.

i) Cellulose painted surface cannot stand in extreme degree of cold and heat. [True / False] $1\frac{1}{2}$

ii) Plastic possesses excellent insulating properties. [True / False] $1\frac{1}{2}$

iii) P.V.C pipes can be used at high temperature. [True / False] $1\frac{1}{2}$

iv) FRP is combination of glass fibers, resin and additives. [True / False] $1\frac{1}{2}$

Q.6 Explain "PVC" pipes as a building material. 07

Q.7 Write common type of moldings used for plastic. 07

Q.8 Write note on veneers. 07

Total No. of Printed Pages:03

SUBJECT CODE NO:- H-658
FACULTY OF SCIENCE AND TECHNOLOGY
FOURTH YEAR ARCH
AD-VI
(OLD)

[Time: 1 st Day --6 hrs. Enlodge **[Max. Marks: 100]**
2 nd Day---3+3 Hrs.
3 rd. Day ---3+3 Hrs.]

Please check whether you have got the right question paper.

N.B i) The candidates are instructed to work for six hours ENLODGE on the first day. On the subsequent days, There will be two sessions of three hours each.

ii) The candidates are instructed to submit line plans of their design solutions (schematic plans and site plan) at the end of the 1 st day. No major deviation will be allowed in the final design from solution submitted at the end of the 1st day.

iii) The candidate must submit the final design in form of a portfolio binding all the drawing sheets together and covering portfolio with blank sheets on both sides. The candidates must write their examination number at the right hand corner of every sheet and take care to see that every drawing sheet bears the signature of the invigilator.

iv) The design paper will be assessed as a whole.

INSTITUTE FOR SOCIAL WELFARE

The department of social welfare is intending to start a branch institute for women at Usmanbad. In intension to bring awareness and facilating the weaker section of the society, a training institute supported with accommodation facility, is basic objective of the department.

The training institute will cater with a series of training to women in various fields in order to make them self-employed. These training period may vary from three months to one year. So accommodation for staff and trainees is to be provided.

Separate building for training, staff quarters and trainee accommodations is expected supported with all required services. The average height of the building has to be 12 mts. Adequate toilets and parking facility has to be considered. Open spaces for get together or recreational activities are to be planned.

Requirements:-

A) 1. Entrance foyer, Enquiry unit
2. Administration office
3. Managers Cabin (with attached toilet)

4. Conference/ Counseling space
5. Toilet facility

B) Training Facility
1. Class rooms ---------- 10 nos.
2. Labs ---------- 5 nos.
3. Workshops -------- 5 nos.
4. Staff room ---------- 1 nos.
5. Library ---------- 1 nos.
6. Common Room ---------- 1 nos.
7. Lavatory block

C) 1. Staff quarters ----- 2BHK ----- 10 nos.
2. Non-teaching ---------- 1 Room/Kitchen -----10 nos.

D) Hostel accommodation for women
1. Rooms Three seater ----- 10 nos (Attached Toilet) ------- 12 mt. sq. each
2. Dormitory Four nos. 30 bed capacity ---------- 150 sq.mt.
3. Adequate toilet facility for dormitory.

E) Food
1. Dining hall for 55 persons --------- Table chair arrangement
2. Kitchen (50 % of dining space)
3. Store (50 % of Kitchen Space)

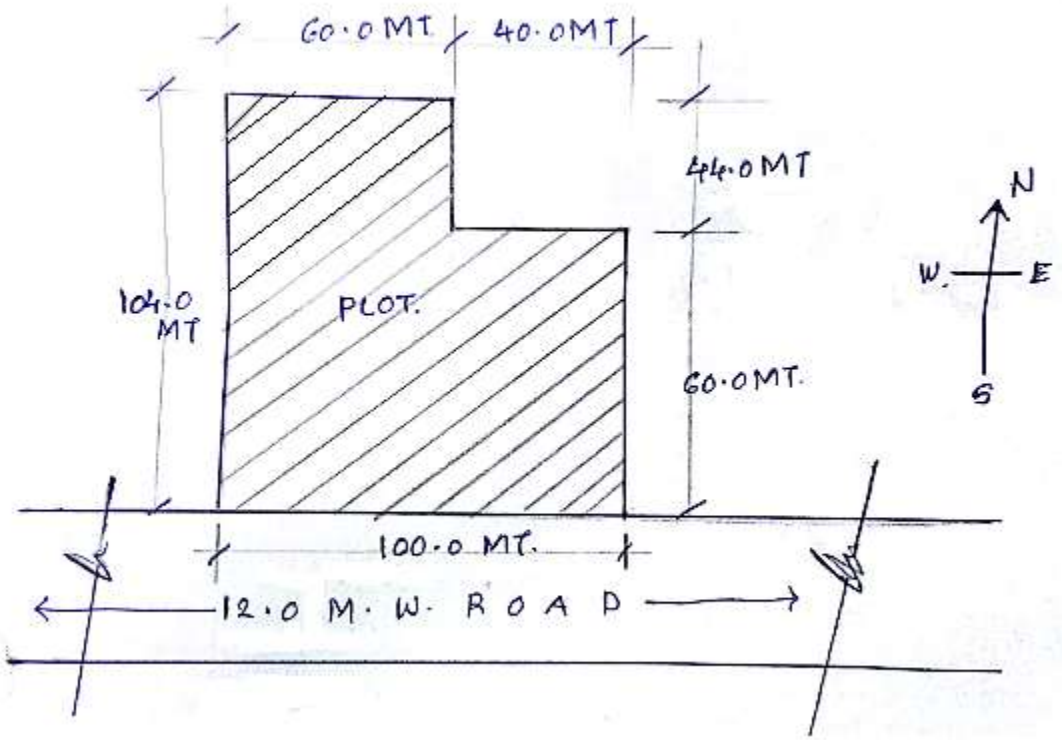
F) Multipurpose Hall with stage ---------- 250 sq. mt.

Open spaces are to be created within the built up form for various activities, for ventilation factor. Adequate passages, corridors, canopies, shading devices as per standards.

Drawing Requirements:-

1. Site Plan (1:200)
2. Concept and zoning diagrams
3. All floors furnished plans with clear labeling and dimensions (1:100)
4. Minimum Two side elevations (1:100)
5. Minimum one section of each building (1:100)
6. Sketch view of campus.

PLOT:-



Total No. of Printed Pages:2

SUBJECT CODE NO:- H-659
FACULTY OF SCIENCE AND TECHNOLOGY
S.Y. Arch (CBCS)
Architectural Building Construction-III

[Time: Four Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B
1. Solve any two questions from each section.
2. Answers to Section a must be solved on drawing sheets only. Answers to Section B can be solved on answer sheets.
3. Assume suitable data wherever necessary.

Section A

Q.1 Design timber flooring on an upper floor for a hall measuring $8.0 \times 12.0\ mts$. Load bearing structure of 350 mm thk brick wall having 3.6 m floor to floor height and 0.9m as plinth level.
Drawing requirement:

i)	Detail plan (scale 1:50)	12
ii)	Detail two sections along both spans (scale 1:50)	06
iii)	Different types of joints for floor boards (scale 1:2)	06
iv)	Fixing detail of girder, binder and bridging joist (scale 1:2)	06

Q.2 Design a T.W false ceiling to an office cabin acoustical board sheet from following data:
i) Size of cabin $4.5\ mts \times 4.2\ mts$
ii) Floor to floor height is 3.6 mts
iii) R.C.C frame structure with 230 mm thk brick wall
iv) Maximum depth of false ceiling is 0.6 mts.

Drawing requirement:

i)	Ceiling plan and its key section	04
ii)	Detail plan and detail section	10
iii)	Fixing of T.W. suspender to R.C.C slab	06
iv)	Fixing of light fixtures	06
v)	Fixing of acoustical board to T.W frame	04

Q.3 Draw neat sketches (any four) 30
a) Types of staircase any there
b) Stepped and raft foundation
c) Fixing of baluster to concrete tread and handrail to side wall.
d) Fixing of binders and bridging joist
e) Type of strutting timber floor.

Section B

Q.4 What is the method of fixing of joist to the wall plate refer Q.1 10

Q.5 Explain construction methodology for single joist timber flooring with sketches. 10

Q.6 Flow to prepare concrete in M: 20 grade and centering for R.C.C staircase. 10

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-662
FACULTY OF SCIENCE AND TECHNOLOGY
S. Y. Arch (CBCS)
History of Architecture-II

[Time: Three Hours] **[Mak.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Q.no.1 from section A and Q.no5 from section B are compulsory.
2. Out of the remaining two questions solve any question from each question.
3. Figures to the right indicate full marks.

Section A

Q.1 State weather the following statements are true or false 10

1) Indo Islamic architecture during the slave dynasty exhibited columnar and trabiated style of structural system.
2) The covered passages around the shan of a Masque is called liwan.
3) The tomb of sultan Ghazi was built by Iltutmish.
4) The Alai Darwaja is completely covered in white marble.
5) Ghias – Ud –din Iuglaq's tomb is pentagonal in plan and guarded by a square fort .
6) The tomb of Mubarak Shan Sayyid is octagonal in plan.
7) Attal Masjid is a good example of provincial architecture of Gujrat.
8) The Jahaj Mahal is located in Mandu.
9) The Siddi Sayyid masque is well known for its beautifully carved stone jalis.
10) Provincial architecture of Bijapur exhibits a columnar and Arched structural system.

Q.2 Describe with sketches the architectural features and elements of a typical mosque with suitable examples. 15

Q.3 Describe with sketches the architectural features and planning of Gol Gumbar 15

Q.4 Explain with neat sketches the provincial Islamic architecture of Jaunpur with suitable examples. 15

Section – B

Q.5 State weather the following statements are true or false 10

1) The Red fort at Agra was built by Shahjahan .
2) Humayun's tomb is asymmetrical in plan.
3) Bulland darwaja is a part of Jama Masque at fatepur sikri .
4) Water bodies are is an important part of Mughal gardens.
5) The façade of Itmad- Ud – Daula's tomb is made with the help of white marble.
6) Jahangir's tomb is located in Delhi.
7) The Taj Mahal has a double dome, one on top of the tomb and another concealed inside .

8) Shahjahan is a Mughal emperor known for his use of white marble in his architecture.
9) Calligraphy is used for the decoration of wall surfaces in Mughal architecture.
10) Bibi – ka – Maqbara is built in red and stone.

Q.6 Describe with sketches the architectural features and planning of Akbar 's tomb in Agra. 15

Q.7 Describe with sketches the architectural features and planning of Red fort at Agra. 15

Q.8 Illustrate the scheme and architectural features Taj Mahal Agra. 15

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-663
FACULTY OF SCIENCE AND TECHNOLOGY
S. Y. Arch (CBCS)
Environmental Science & Services - I

[Time: Three Hours] **[Mark.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Q.No.1 from section A and Q.No.5 from section B are compulsory.
2. Attempt any two questions out of the remaining three questions from each section.
3. Figures indicated to the right indicate full mark.

Section A

Q.1 Explain weather the following statements are true or false: 10
a) Hardness of water is caused by the sand present in water.
b) 'S' Trap is Used in water closet
c) Rainwater harvesting can be carried out with the help of sewage systems.
d) Septic tank is a device used to collect soil waste and grey water.
e) Water closets have traps to produce self -cleaning velocity in pipes.

Q.2 Explain the various types of impurities in water and methods of removal of the same. 15

Q.3 Explain the concept of portable water, what are the characteristics of safe drinking water. 15

Q.4 Explain with neat sketches the different steps involved in the purification of water in a water treatment plant. 15

Section B

Q.5 Explain weather the following statements are true or false: 10
a) Dry waste is a term used for in-organic waste produced.
b) Bio digesters are devices used for processing chemical wastes.
c) Anti-siphonage pipes are used for transporting water after purification.
d) Vermicomposting is a process of composting plastics with the help of earth worms.
e) Cesspools are a part of the sewage disposal and treatment system.

Q.6 Explain the working of "biogas-gas plant" with neat sketches. 15

Q.7 Explain in detail the primary and secondary treatment of sewage disposal. 15

Q.8 Draw neat sketches and explain "One Pipe" and "Two Pipe" system. Also write advantages of both systems. 15

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-628
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch. (CBCS)
A.B.C. I

[Time: Four Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Solve any two questions from sec. A and any two from Sec. B
2. Answers to Sec A must be solved on drawing sheets only answers to Sec B can be solve on answers sheets.
3. Assume suitable data wherever necessary.
4. Figures to the right indicate full marks.

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Section A

Q.1 a) Draw neat sketches with dimensions of any two – 08
- i) Plinth Header
- ii) Relieving Arch.
- iii) Brick backed Ashlar Masonry
- iv) A brick lintel

Choose appropriate scale.

b) Draw plan and isometric view of 3 successive courses of 1 ½ thick brick cross junction walls of a building showing type of bricks used
- i) Plan 10
- ii) Isometric view 12

Q.2 A single leaf fully paneled teak wood door is to be designed for an apartment. The opening in the wall is 1.00Mt. Wide and the height is 2.10 mt. The size of t.w frame is 75 X125 and the thickness of t.w shutter is 35mm. thick. The building is a load bearing structure.

A) Draw plan elevation and section of the t.w door (scale1:10) 09

B) Draw large scale details of
- i) Joint between t.w post and t.w head of the door 07
- ii) Joint between look rail and t.w style. 07
- iii) Joint between look rail, style & t.w panel. (scale1:2) 07

Q.3 Draw neat sketches of any four 30
- i) 3 successive courses of a rat trap bond
- ii) Brick wall in herring bone pattern
- iii) Plan and isometric view of a 2 brick thick isolated column in English Bond. Height of column is 1.40mt
- iv) Section and elevation of a t.w lintel for a 1 ½ bk.wall
- v) Parliamentary hinge for a single leaf door.

Section B

Q.4 What are the requirements for laying of bricks for a load- bearing structure. 10

Q.5 Describe different type of joints used in stone masonry. 10

Q.6 Describe at least 3 functions of a piers in brick masonry with sketches. 10

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-631
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year ARCH
URP-II
(OLD)

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

Please check whether you have got the right question paper.

N.B i) Solve any FIVE questions.
ii) Draw sketches wherever necessary.

Q.1 Write short notes on any three. 15
a) Public participation in planning
b) Traffic volume survey
c) Metropolitan Region.
d) Capacity of Roads.

Q.2 Write an essay on importance of planning Norms. Differentiate between Norms and standards. 15

Q.3 Explain hierarchy and types of urban roads. Also explain the "Right of way" with suitable sketch. 15

Q.4 Define "Region". Explain the types of regions with suitable examples. 15

Q.5 What do you understand by "Development plan"? Explain in detail contents of Dev. Plan. 15

Q.6 Explain the concept of "Balanced development" and elaborate upon suitability of regional planning in Indian context. 15

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-632
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch.
D.F.A.- I
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1. Q.No.1 and Q.No.2 are compulsory.
2. Out of remaining attempt any six questions.
3. Assume suitable data if necessary.

Q.1	Explain in detail elements & principles of design with suitable sketches.	20
Q.2	What do you mean by visual perception and explain its principles with suitable examples.	20
Q.3	What are forms in architecture and give its transformation?	10
Q.4	What do you mean by seven lamps of architecture? Explain each lamp in detail with the help of examples from history.	10
Q.5	What are applications of scale and proportion in architecture?	10
Q.6	What is golden ratio and where do you find in nature?	10
Q.7	How do you compare the work of an Architect with that of artist, sculptor and technologist?	10
Q.8	What are ordering principles in architecture?	10
Q.9	What is difference between technology & science?	10

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-634
FACULTY OF SCIENCE AND TECHNOLOGY
T. Y. Arch.
T.D.S. - IV
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i. Question No's 1 and 5 are compulsory. Solve any two questions from the remaining in each section.
ii. Draw neat sketches whenever required.
iii. Assume suitable data if necessary and state it clearly.

Section A

Q.1 A column of effective length 6.3m has to carry axial load of 1200kN. Design the column section consisting of 2 channels placed back-to back at a suitable distance. Also design double lacing for the column. 24

Q.2 a) Compare riveted and welded connection. 06
b) Explain different type of connections made in steel structures. 07

Q.3 Explain design procedure of slab base for a column. 13

Q.4 A tension member of a truss consists of a single angle ISA 125×75×10mm carrying a load of 200kN. If 20mm diameter rivets be used design the connection to the gusset plate using a lug angle. 13

Section B

Q.5 Write short notes on(Any three) 24
a) Explain types of failures in riveted joints.
b) Write different rolled steel section used in steel structure.
c) Flange plate.
d) Advantages of steel structure over RCC.

Q.6 A hall 12meter×8meter has to be provided with a 120mm thick roof slab. The roof shall also be provided with 75mm thick lime concrete. The live load on the slab is 1500N/m^2. Design an intermediate steel beam, if the beams are spaced at 3 meters centres. 13

Q.7 Design a gusseted base for column consisting of ISHB-300 @57.8kg/m carrying axial load 900kN. Assuming the grade of concrete M_{15} grade of concrete SBC of soil 160kN/m^2. 13

Q.8 Design an I-section purlin for a trussed roof from the following data. 13
Span of roof=15m, spacing of truss=4m, spacing of purlin along slope of roof truss=1.5m, slope of roof truss=1vertical, 2horizontal, Wind load on roof surface normal to roof=1100N/m^2 Vertical load from roof sheets etc=210N/m^2.

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-633
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch. (CBCS)
Building Material

[Time: Two Hours] **[Max.Marks:40]**

Please check whether you have got the right question paper.

N.B
1. Solve any four questions.
2. Draw neat sketches to elaborate your answers.
3. All questions carry equal marks.

Q.1	What are the different constructions techniques associated with mud as a building material?	10
Q.2	What are properties of good sand? What is the function of sand in mortar?	10
Q.3	Compare between: a) Clamp Burning and Kiln Burning. b) Bulls Trench Kiln and Hoffman's Kiln.	10
Q.4	What do you understand by dressing of stone?	10
Q.5	Define the following: a) Calcination b) Lime c) Setting of Lime d) Slaked lime	10
Q.6	Explain qualities of good timber and process of seasoning of timber.	10

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-635
FACULTY OF SCIENCE AND TECHNOLOGY
S. Y. Arch.
T.D.S. - II
(REVISED)

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

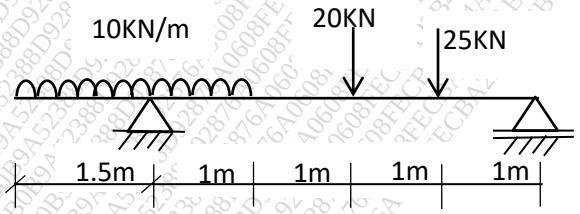
Please check whether you have got the right question paper.

N.B
i. Solve any five questions.
ii. Assume suitable data if necessary.
iii. Figures to the right indicate maximum marks.
iv. Use of non-programmable calculator is allowed.

Q.1 Determine crippling load by Rankine formula if a hollow cast Iron column $200mm \times 150mm$ external dimension and $150mm \times 100mm$ inside dimension. Height of column is 6 m. both ends fixed. If $E = 1200\ N/MM^2$. 20

Q.2 A bean ABCD is simply supported at B & D. AB=2 m, BC=5 m, CD=5 m. it carries UDL of 20 KN/M on portion AC and a point load of 50 KN at C. use Macaulay's method. Find the maximum deflection in the beam .take $EI = 4500\ KN - M^2$. 20

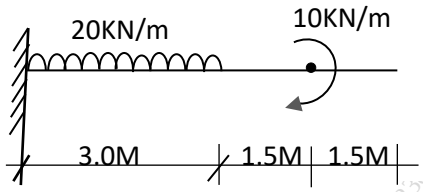
Q.3 Draw shear force and bending moment diagram for the beam as shown below. 20



Q.4 A uniform I-section beam is $100\ mm \times 25\ mm$ thickness of flanges and $150\ mm \times 15\ mm$ thickness web. Carries UDL of 20 KN/M. over a simply supported beam of span 4 m. Draw shear stress distribution diagram for the beam. 20

Q.5
a) Explain the concept of pure bending. 06
b) Write short note end condition of column. 06
c) Define and explain degree of static and kinematic indeterminacy of structure. 08

Q.6 Draw shear force and bending moment diagram for the cantilever beam as shown below. 20



Total No. of Printed Pages:1

SUBJECT CODE NO: H-637
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. ARCH.
E.C.A.C.A.
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i) Answer to the two sections must be written on the same answer book
ii) Q.1 from section A and Q.5 from section B are compulsory
iii) Attempt any two questions out of the remaining of each section

Section A

Q.1 Write short notes with neat sketch (Any four) 24
a) Ionic column order
b) Prehistoric shelters
c) Stone henge
d) Pyramids of Giza
e) Ishtar gate
f) Ziggurat

Q.2 Write in detail about the development shelters, culture and lifestyle in prehistoric times 13

Q.3 Describe with sketches the development of pyramids from mastabas. Draw neat sketch of the royal pyramid in section 13

Q.4 Describe in detail about west Asiatic civilization. Write in detail about its architectural character 13

Section B

Q.5 Write short notes with neat sketch (Any four) 24
a) Agora
b) Greek theater
c) Roman Forum
d) Circus maximus, Rome
e) Pantheon
f) Palace of sargon at khorsabad

Q.6 Describe in detail the structures and characteristics of the Greek Acropolis 13

Q.7 Write a detailed note on Roman column orders and illustrate with suitable examples 13

Q.8 Explain in detail the town planning principles of Greeks and also the important elements of Greek city plans 13

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-636
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
ABCM-VII
(OLD)

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

Please check whether you have got the right question paper.

N.B
1. Solve any two questions from section –A and any two questions from section – B
2. Answer of Section A must be solved drawing sheets only section B can be solved on answer sheet.
3. Assume suitable data wherever necessary.
4. Figures to the right indicate full marks.

Section A

Q.1 A grain godown building is to be constructed in R.C.C portal frame with following data. 35

i) Size 14m X 44m
ii) Height 5.0m
iii) Plinth – 0.9m draw the following to suitable scale
   a) Plan & section
   b) Enlarge detail of portal frame
   c) Important details
   d) Foundation details

Q.2 A bank building having 12m X 20m size is to be provided with state deposit vault of 4m X 8m draw the following to suitable scale. 35

a) Plan & section
b) Reinforcement details
c) Door fixing details
d) Fixing of exhaust fan

Q.3 A workshop building is to be provided with R.C.C folded plates slab. The size of the work shop is 20m X 42m draw the following. 35

a) Key plan & section
b) Enlarged detail of slab with reinforcement details
c) All important details
d) Details of rain water gutter & valley beam.

Section B

Q.4	Explain shell structure & explain single and double curvature structure.	15
Q.5	Explain precast structure & its advantages.	15
Q.6	Explain joints and expansion joints in a building.	15

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-647
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch. (CBCS)
E.S.

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B
1. Q.1st from section A and Q.5th from section B are compulsory. Each one of 10 marks.
2. Attempt any two questions from section A and two from section B. Each one of 15 marks.
3. Illustrate your answers wherever necessary.

Section A

Q.1 Multiple choice type questions. (select the correct option to the followings) 10

1) In our country the percentage of land under the forest is about:
   a) 22%
   b) 19%
   c) 30%
   d) 25%

2) Gas leaked in Bhopal tragedy was:
   a) CO_2
   b) N_2O
   c) Ethyl isocynate
   d) Methyl isocynate

3) Ozone day is observed on:
   a) January, 30
   b) April, 21
   c) September, 16
   d) December, 25

4) Greenhouse effect is related to:
   a) Green trees on house
   b) Global warming
   c) Grasslands
   d) Greenery in country

5) Which of the following is a 'abiotic component of the ecosystem':
   a) Bacteria
   b) Plants
   c) Humus
   d) Fungi

Q.2 What is the importance of forest resources? 15

Q.3 What are hot spots of biodiversity? 15

Q.4 Give an account of energy flow in an ecosystem. 15

Section B

Q.5 Mark the statement True (T) or False (F) 10

1) All pollutants are degradable.
2) Smog causes cracking of rubbers.
3) PAN is a primary pollutant.
4) Underground water is non-polluted and safe.
5) Parasites can synthesize food material.

Q.6 Describe the objectives of National Population Policy 2010. 15

Q.7 Describe the important means of water conservation. 15

Q.8 Write notes on any three of the following 15

a) Value Education
b) Role of Information Technology in Human Health
c) Endangered Species
d) Earthquake
e) Greenhouse effect

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-646
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
L.D-I
(OLD)

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

Please check whether you have got the right question paper.

N.B
1. Q.No.1 is compulsory.
2. Solve any three questions out of the remaining questions.
3. Draw sketches wherever necessary.

Q.1 Write short notes on any five 30
a) Typical features of English garden.
b) Landscape management
c) Aesthetics in landscape
d) Indian gardens in history
e) Bio-aesthetic planning.
f) Japanese gardening philosophy
g) Rock gardens

Q.2 Explain the important works of any two landscape architects in India with suitable examples. 15

Q.3 Write botanical names along with common names of any five plants suitable for roadside plantation. Also mention their physical and aesthetical characters. 15

Q.4 Explain the concept of integration of indoor and outdoor spaces through landscaping. Draw neat sketches. 15

Q.5 Explain process of making “Herbarium” and elaborate upon its importance in landscape design. 15

Total No. of Printed Pages:1

SUBJECT CODE NO: H-645
FACULTY OF SCIENCE AND TECHNOLOGY
S.Y. Arch.
E.S.S. - I
(REVISED)

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

Please check whether you have got the right question paper.

N.B i) Q.No.1 & Q.No.5 are compulsory and
Solve any two questions from remaining from both sections.
ii) Draw neat sketches to support your answer.

Section A

Q.1 Explain with sketches hot water piping system & different hot water system used in apartment building & single occupancy home. 20

Q.2 Explain with proper sketches [any three] 15
i) Water demand
ii) Sources of water
iii) Water treatment process
iv) Drinking water fountain

Q.3 Explain with neat sketches different methods of water distribution system to town. 15

Q.4 Explain the importance of rainwater harvesting system with proper sketches. 15

Section B

Q.5 Explain the working of "Septic Tank" with neat sketches. 20

Q.6 Explain with neat sketches [any three] 15
i) Indian type water closet
ii) Antisiphonage pipes
iii) Types of traps
iv) One pipe & two pipe system of drainage

Q.7 Explain anaerobic digestion for energy filter [biogas] plant used in rural area with proper sketch & its function. 15

Q.8 Write the primary & secondary treatment of sewerage disposal system. 15

Total No. of Printed Pages:03

SUBJECT CODE NO:- H-644
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y. Arch.
E.C. & S.W.
(REVISED)

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

Please check whether you have got the right question paper.

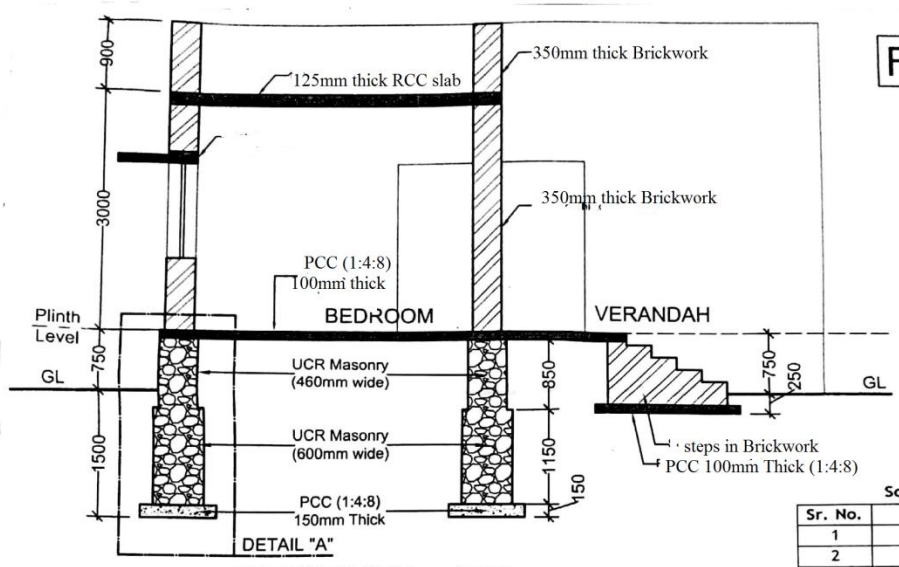
N.B
1. Question No.1 from section A is compulsory.
2. Out of the remaining THREE questions from section A solve any two and solve any TWO questions from section B.
3. Assume suitable data wherever necessary and mention it clearly.

SECTION A

Q.1 Find out the cost of any four items from the table given below. Workout the detailed quantities on measurement sheet. Mention the correct unit of measurement as per DSR (refer fig.A) 40

Sr.no.	DESCRIPTION	Quantity	Rate in Rs.	Unit	Amount Rs.
1.	Excavation for foundation upto hard strata		158		
2.	P.P.C. (1:4:8) below foundation		3485		
3.	U.C.R. stone masonary in foundation upto plinth level		2270		
4.	Brick masonary in cement mortar 1:6 proportion		5325		
5.	Providing sand faced plaster to external walls.		240		
6.	Providing and fixing T.W. door frame		103306		

FIGURE: A

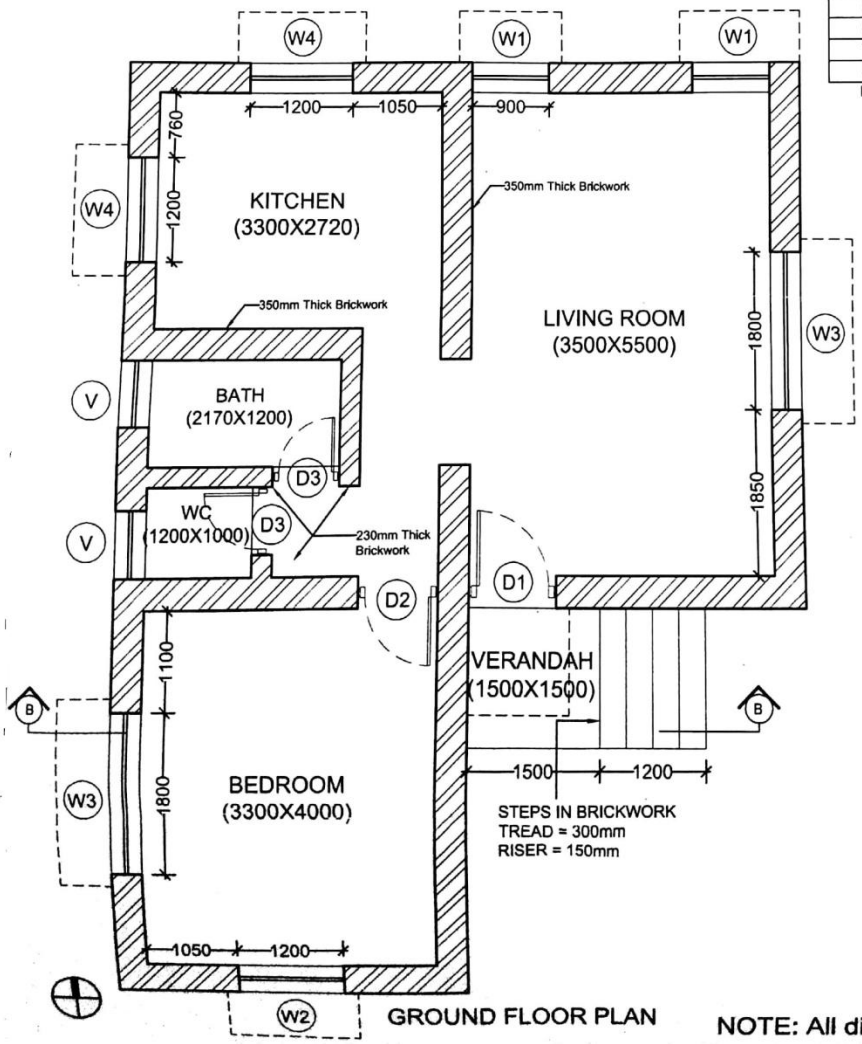


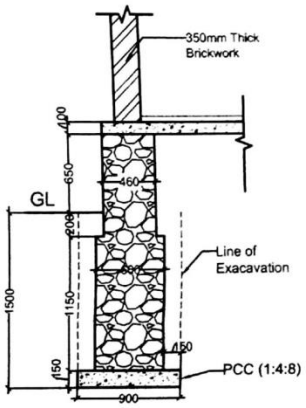
SECTION - BB

Schedule of Openings

Sr. No.	Type	Size (LxH) (mm)
1	D1	1000X2100
2	D2	900X2100
3	D3	750X2100
4	W1	900X1200
5	W2	1200X1200
6	W3	1800X1200
7	W4	1200x900
8	V	750X750

Door frame section size = 75x125mm.





TYPICAL DETAIL AT "A"

NOTE: All dimensions are in millimetres.

Q.2 Work out the rate of 230 mm thick brickwall in 1:6 cement mortar. With the following data: 15

i) Size of brick with mortar = $230 \times 110 \times 70 (in\ mm)$.
ii) Size of brick without mortar = $220 \times 100 \times 60\ (in\ mm)$
iii) Rate of brick = Rs.7/brick
iv) Rate of cement = Rs.7,000/m.Tone
v) Rate of sand = Rs.10,000/Truck
vi) Labour rate = Rs.945/m^3
vii) Pay load factor of sand = 5.75m^3

Q.3 Work out the rate of 20mm thick external sand faced cement plaster in 1:3 cement mortar proportion from following data: 15

i) Rate of cement = Rs.330 per bag.
ii) Rate of sand = Rs.12,000/Truck
iii) Labour rate = Rs.90/m^2
iv) Pay load factor for sand = 5.75/m^3

For sand

Q.4 Write detailed specifications for providing and fixing $55cm \times 40cm$ wash hand basin with all connections. 15

SECTION B

Q.5 Write detailed specifications for m-20 grade R.C.C. slab for a R.C.C. framed structure. 15

Q.6 Write short notes on (any three) 15

a) Approximate estimate by plinth area method
b) Lump sum work
c) Prime cost
d) Provisional sum

Q.7 Write detailed specifications for 12mm thick internal Neeru finish plaster. 15

Total No. of Printed Pages:1

SUBJECT CODE NO: H-643
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. ARCH (CBCS)
E.C.A.C.A.

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B i) All questions are compulsory

Q.1 Answer the following (any two) 40

i. Describe with sketches the development of pyramids from Mastabas. Draw neat sketch of the Royal Pyramid in section

ii. Write a detailed note on Greek column orders and illustrate with suitable examples

iii. Describe in detail about River valley Civilization at Mesopotamia. Write in detail about the evolution of its city states and their character.

Q.2 Explain the following with appropriate sketches (Any four) 40

i. Greek temples with example

ii. Sphinxes and Obelisks

iii. Acropolis

iv. Roman city planning

v. Egyptian Mortuary and cult Temples

Total No. of Printed Pages:1

SUBJECT CODE NO: H-642
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. Arch
E.S.
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i) Q.No.1 from section A and Q.No.5 from section B are compulsory.
ii) Solve any two questions from remaining from each section
iii) Use sketches whenever necessary
iv) Answers to the two sections must be written separately

Section A

Q.1 a) Write an essay on 'Value of biodiversity' 11

b) Write short notes on following (any three) 15
i) Energy flow
ii) Food chain and food web
iii) Water conservation
iv) Deforestation

Q.2 Describe in detail water shed management? 12

Q.3 Give an account of energy flow in an Ecosystem? 12

Q.4 Explain the importance of natural Resources. What do you understand by renewable energy sources? 12

Section B

Q.5 a) What do you understand by Environment Degradation? Explain the factors affecting environment of a region 11

b) Write short notes on following (any three) 15
i) Population explosion
ii) Value education
iii) AIDS
iv) Human Rights

Q.6 Explain in detail family welfare programmes. Add a note on family planning 12

Q.7 Describe in detail, 'The urban problem' related to energy 12

Q.8 Give a brief account of wildlife protection Act. 12

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-640
FACULTY OF SCIENCE AND TECHNOLOGY
S. Y. Arch.
H.A. - II
(REVISED)

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

Please check whether you have got the right question paper.

N.B (1) Answer to two sections must be written on same answer book.
(2) Q. No.1 from Section A and Q. No.5 from Section B are compulsory.
(3) Attempt any two questions out of the remaining of each section.

Section A

Q.1 Write short note with sketches (any four) 24
(a) Conventional Mosque
(b) Khirki Masjid
(c) Ghias-ud-din Tomb
(d) Squinch Arches
(e) Wells of Gujarat
(f) Ferozshah Tughlaq tomb

Q.2 Discuss the contribution of rulers of Imperial period in Quwwat-i-Islam mosque at Delhi. 13

Q.3 Write a detailed note of Ferozshah Kotla at Delhi supported with sketches. 13

Q.4 Show how the Bijapur provincial style was influenced by engineers and artisans giving suitable examples. 13

Section B

Q.5 Write short note with sketches (any four) 24
(a) Mughal era pillars and brackets
(b) Jahangir Mahal, Agra Fort
(c) Ibrahim Rauza, Bijapur
(d) Hushang Shah Tomb
(e) Panch Mahal, Fatehpur
(f) Akbar Tomb, Sikandara

Q.6 "Akbar's era as a reign of Red sand Stone" Justify the statement. 13

Q.7 Write a note on contribution of Emperor Jahangir in Mughal period? 13

Q.8 Explain the layout scheme of Red Fort Delhi? 13

Total No. of Printed Pages:1

SUBJECT CODE NO: H-639
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y. ARCH.
H.A. - IV
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i) Question number 1 and 2 are compulsory
ii) Solve any six questions from the remaining
iii) Draw neat sketches whenever necessary

Q.1 Describe the organic Architecture of Frank Llyod Wright with relevant examples 20

Q.2 What is the contribution of Le Corbusier to the post-independence Architecture of India? Explain with suitable example 20

Q.3 What do you understand by Eclecticism and Expressionism 10

Q.4 How is 'Less is More' exemplified through the projects of Mies Van de Rohe. 10

Q.5 What is the contribution of any one the following to the development of Modern Architecture in India: Charles Correa OR Achyut Kanvinde 10

Q.6 Louis Kahn is the 'master of Monumentality'. Explain giving appropriate examples. 10

Q.7 Explain the ideology of noted architect B. V. Doshi with examples 10

Q.8 Describe with examples the architectural Scenario during Pre-independent India in the period of settlement and period of transition 10

Q.9 Explain 'contemporary regionalism' with respect to the works of any one of the following: Lucio costa or Kenzo Tange 10

Q.10 Draw neat sketches of Eiffel Tower and Bauhaus school 10

Total No. of Printed Pages:2

SUBJECT CODE NO: H-649
FACULTY OF SCIENCE AND TECHNOLOGY
S.Y. ARCH (Sem IV)
A.D. III
(REVISED)

[Time: Day-1: 6Hrs Enlodge **[Max. Marks: 100]**
Day -2: 3+3 Hours]

Please check whether you have got the right question paper.

N.B
A. The candidates are instructed to submit line plans, site plan at the end of the First day. No major deviations will be allowed in the final design from the design submitted at the end of the 1st day sketch should be written in bold letters.
B. The candidates are further instructed to submit the final design in the form of a portfolio binding all the drawings including sketches, tracings, and 1st Day sketches together and covering the portfolio with white sheets on both sides. The candidates shall write their examination number on the top right hand corner of the cover sheet. All the drawings in the portfolio shall carry the examination number of the candidate.
C. The candidates are instructed to see that all the drawings in the portfolio are signed by the invigilator.
D. Your design paper will be assessed as a whole.
E. Assume suitable data wherever possible and mention it clearly.

Topic: **HOSTEL FOR SECONDARY SCHOOL**

A reputed CBSC School, in the town proposes to provide hostel facility for its high school students (7th, 8th 9th and 10th students). For the same a well-planned hostel within the campus is to be designed.
REQUIREMENTS:

1. Two hostel blocks of G+2 max accommodating 30 students each.(30 Girls and 30 Boys)
2. Common dining hall/Kitchen, store and pantry for the two blocks. In addition to the above; common recreational areas consisting of T.V. room, games room etc. attached to each hostel block. The detailed requirements are as follows:

A. Hostel blocks (3 nos.)

1.	Entrance lobby with waiting, reception, visitors lounge, small office for hostel Supervisor and adequate toilet facility.	100 sqm.
2.	Hostel Supervisor/ warden Quarter	40-50 sq mts.
3.	Linen and furniture store.	25 sqm.
4.	T.V.room for approximate 25 persons.	25 sqm.
5.	Typical accommodation for students bed area and study area (2/3 seater) with attach toilet	25 - 30 sqm.

B. Dining Hall 1 no.(common for both hostel blocks)

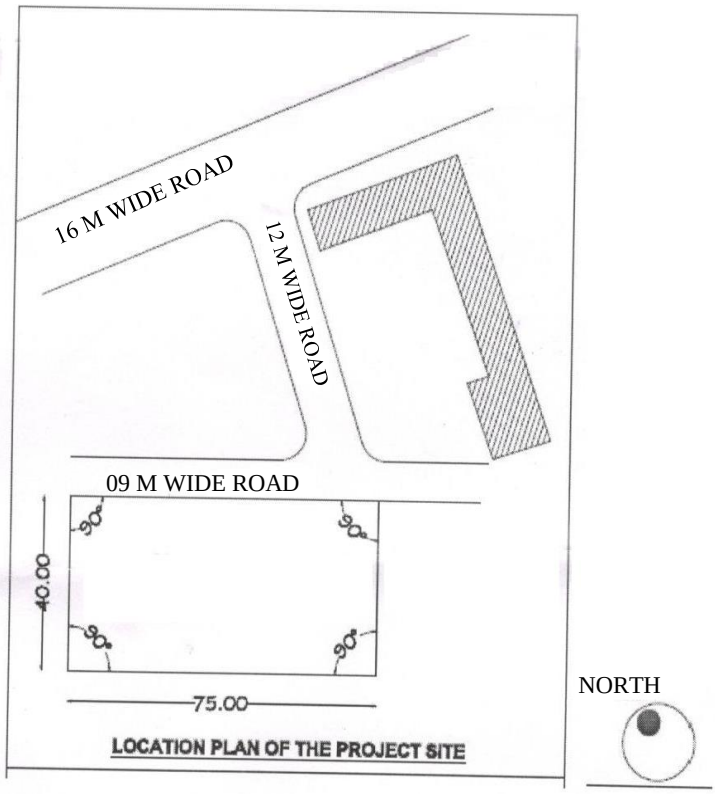
1)	Entrances lobby	10 sqm
2)	Dining hall (75 Capacity)	80 sqm
3)	Kitchen	40 sqm
4)	Pantry	15 sqm
5)	Store with proper loading and unloading areas	12 sqm
6)	Hand wash area	Adequate area to be provided
7)	Servants room with toilet	Adequate area to be provided

Parking for student's cycles and staff vehicles to be provided as required
Adequate areas to be provided for common corridors, staircases etc.

Drawing requirements: (select a suitable scale)

1. Site plan showing hostel blocks, common dining hall, internal roads, parking areas and landscaping.
2. All floor plans for typical hostel block and dining hall.
3. Min one elevation and one section of hostel block and dining hall.
4. Detailed furniture layout of typical hostel accommodation for each scholar.
5. Bird's eye view of the site. (Sketch).

The Site: $75.00\ mts\ \times\ 40\ mts.$



Total No. of Printed Pages:1

SUBJECT CODE NO: H-656
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
ESS-IV
(OLD)

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

Please check whether you have got the right question paper.

N.B
1) Question No.1 and Question No.2 are compulsory.
2) Solve any four questions from the remaining.
3) Assume suitable data wherever required.
4) Figures to the right indicate full marks.

Q.1 Define Fire, Explain fire triangle, types of fire groups and extinguishers for needed for these fire groups. 20

Q.2 Discuss the different types of electrical wiring systems and its domestic applications. 15

Q.3 Write short Notes on(Any Two) 10
a) Fire insulating materials.
b) Wet and dry risers.
c) Portable extinguishers.

Q.4 How do you control spread of fire? 10

Q.5 Explain with neat sketches: Escalators or Lift. 10

Q.6 What is Flood Lighting and discuss where it can be used? 10

Q.7 Write short notes on (Any Two) 10
a) Incandescent Lamps.
b) Kirchoff's Law.
c) LED.

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-654
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch
URP-I
(OLD)

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

Please check whether you have got the right question paper.

N.B
i) Solve any five questions
ii) Draw sketches whenever necessary

Q.1 Write short note on any three 15
a) Site & situation
b) Vehicle volume count
c) Carriage way
d) Rural settlement types

Q.2 Elaborate the importance of surveys in planning. Also mention different types of planning surveys and their respective uses 15

Q.3 Explain the role of town and country planning organization (TCPO) at national level planning in Indian context 15

Q.4 What are types of settlements? Discuss on their origin & growth give examples 15

Q.5 Elaborate upon the sentence “Town planning is multidisciplinary field”. 15

Q.6 Explain the role of local planning agencies and their scope. Also mention some important agencies working at state level in Maharashtra 15

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-653
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch
T. D. S. -VI
(REVISED)

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

Please check whether you have got the right question paper.

N.B i) Solve any five

Q.1 a) Describe in details of combination of cable and struts 05
b) Enlist advantages and disadvantages of shell 05
c) What is mean by principle stresses? Define it for diagonal cracks in beam? 05
d) Define calculation process for load on footing for two storey buildings 05

Q.2 Write down short notes
a) Pre-tensioning system 05
b) Cylindrical shell 05
c) Pre fabrication system 05
d) Trapezoidal footing 05

Q.3 a) Design doubly reinforced beam for $230 \times 300mm$ in cross section. If the super imposed load is $8KN/m^2$ applied use M_{20} grade of concrete and fe415 grade of steel. The length of beam is 5m. 15
b) Calculate calculation process for load on footing for R.C.C. building 05

Q.4 Answer following questions 20
a) Write the definitions used for pre stressed concrete structures
b) Draw a neat sketch of parabolic shell and show all its components
c) State and explain the need of cable structures
d) Differentiate shell as compared to normal roof

Q.5 a) A pre stressed concrete beam $350 \times 600mm$ is pre stressed by a cable at centre. The span of beam is 12m and it is supported by two concentrated loads of 18KN at 5m and 8m form right ends. Determine the magnitude of pre stressing from load 15
i) Self-weight is ignored and live load is considered
ii) Live load plus self-weight is considered
b) Describe pressure line diagram with neat sketch 05

Q.6 Design reinforcements in short column $400\ mm$ by $600mm$ subjected to an ultimate axial load of $1600\ KN$ together with ultimate moments of 120 KN-m and 90KN-m about the major and minor axis respectively adopt M-20 grade concrete one fe415 HYSD bars 20

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-651
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
P.P - I
(OLD)

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

Please check whether you have got the right question paper.

N.B
1) Answer to the two sections must be written in separate answer books.
2) Q.No.1 from section A and Q.No.5 from section B are compulsory.
3) Attempt any two questions from the balance questions from each section.
4) Assume suitable data, if required.
5) Figures to the right indicate full marks.

Section A

Q.1 What are the essential characteristics of a Tender Notice? 20

Q.2 Write short notes on any two: 10
a) Prime cost and provisional sum.
b) Basic rates.
c) Defect liability period.

Q.3 Is working training part of the contract? Explain. 10

Q.4 Enumerate the type of tenders. 10

Section B

Q.5 What are the basic requirements of holding in architectural competition? 15

Q.6 Write short notes on any two: 10
a) Clerk of works.
b) Copyright.
c) Supervision by Architect.

Q.7 Explain code of conduct as specified by council of Architecture. 10

Q.8 Describe technical and non-technical staff in an Architect's office. 10

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-620
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch
P.P. – I
(REVISED)

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

Please check whether you have got the right question paper.

N.B i) Question No.1 from Section A and Question No.5 from Section B are compulsory. Out of the remaining Three solve any two from each section.
ii) Figures on the right indicate full marks.

Section A

Q.1	Discuss the salient features of an item rate tender and its applicability, advantages and disadvantages.	25
Q.2	Describe the main features and characteristics of a tender notice.	12 ½
Q.3	Under what conditions can a contract be terminated.	12 ½
Q.4	How can an Architect enforce quality control in a building project.	12 ½

Section B

Q.5	Write short notes on any five (a) Security Deposit (b) Percentage Rate Tender (c) Extra-Item (d) Defects Liability Period (e) Interim Certificate	25
Q.6	Describe the salient features of the Architects Act of 1972.	12 ½
Q.7	How can an Architect establish his/her own office?	12 ½
Q.8	Describe the professional conduct of an Architect.	12 ½

Total No. of Printed Pages:2

SUBJECT CODE NO: H-650
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
ABCM. VII
(REVISED)

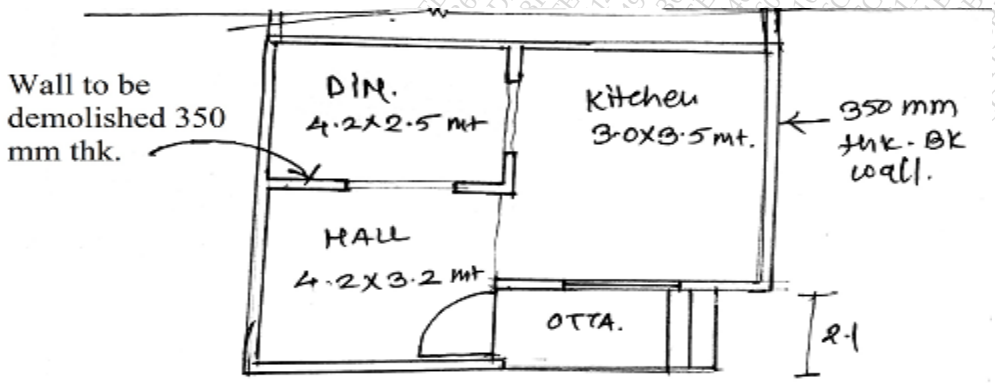
[Time: Four Hours] **[Max.Marks:100]**

Please check whether you have got the right question paper.

N.B i) Solve section – A on drawing sheet & section – B on answer sheets.
ii) Solve any Two questions from section A and any Two questions from section B.
iii) Draw proper sketches wherever necessary.

Section A

Q.1 A Two storied load bearing residential building with a wall thickness 350 mm internal & external. A wall between the hall & dining with sizes 4.2×3.2 mt & 4.2×2.5mt respectively is to be removed to create a big sized/ great hall on the ground floor. Refer sketch :- 35



- Structure – G +1, Load bearing

* Give economical solution to the problem & explain the procedure adopted for the construction along with material specifications.

Drawing requirements:-

i) Key plan & section
ii) Detail plan & section's
iii) All joinery details
iv) Isometric views of important joints

Q.2 A plot admeasuring 15.0mt×30.0mt facing a 9.0mt wide road is affected by road widening. 35

The proposed road will be 24.0 m. wide. The plot is affected by 2.0 mt along the length of the plot. The plot remaining after road widening will be 15.0mt×28.0mt.

A bungalow is existing on the plot which is a load baring structure due to road widening, the commercial value of the plot has increased.

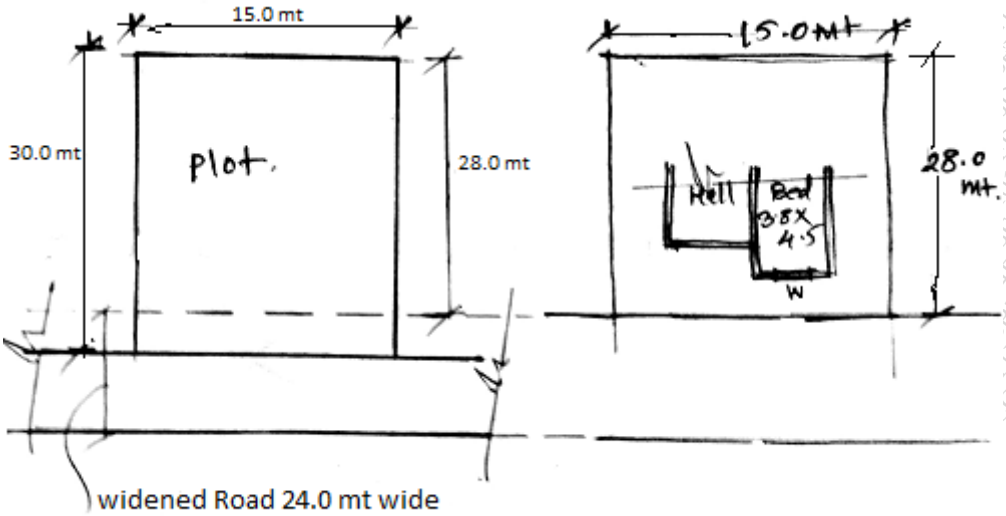
The owner of the bungalow wants to convert a bedroom facing road into a shop for daily need. The size of bed room is 3.8mt×4.5mt. The front wall of bed room will be converted into a shop with an opening of 2.7mt×2.5mt in height.

The height of building is 3.5mt below the slab. It is required to fix a M.s.rolling shutter which will be covered with plain A.C. sheets.
The bedroom is an existing window with the size 2.0×1.2mt & fixed 0.9mt above floor. The Plinth level is 750mm. above G.L.

Drawing requirements:-

- Plan, Elevation, sections
- Large scale details of A.C. sheet & m.s.frame fixing.
- Give process of construction with all specifications.

Please refer sketch –



Q.3 Draw neat & labeled sketches with construction details of any four. 35

i) Fixing & working of roof ventilater for an industrial shed.
ii) Fixing detail of marble cladding for a wall of a hotel reception.
iii) Details of the water walls.
iv) Various components of PEB construction.
v) Fixing details of permeable paver blocks for parking area of a college campus.

Section B

Q.4 What characteristics define the energy saving building materials? 15

Q.5 What are recycled materials? Explain one in detail with its uses. 15

Q.6 What are fundamental characteristics of smart materials? 15

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-604
FACULTY OF SCIENCE AND TECHNOLOGY
B.ARCH (V Year Arch.)
A.B. C. M. - IX
(OLD)

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

Please check whether you have got the right question paper.

N.B
i. Solve any two questions from section A and any three questions from section B.
ii. Answers to section A must be solved on drawing sheets only. Answers to section B can be solved on answer sheets.
iii. Assume suitable data wherever necessary.
iv. Figures to the right indicate full marks.

Section A

Q.1 A factory shed 36.00 M × 18.00M is to be provided with M.S. truss with A.C. sheet 200 fing. The factory shed have R.C.C. columns 230×600 along the length of the shed and are placed at 4.50 Mts. Centers. R.C.C columns 230×350 are placed along the width of the shed and are placed at 4.50 Mts. Centers the height of the shed is 6.50 Mts. Below the tie member of the truss. The height of plinth is 900 mm. above ground level.

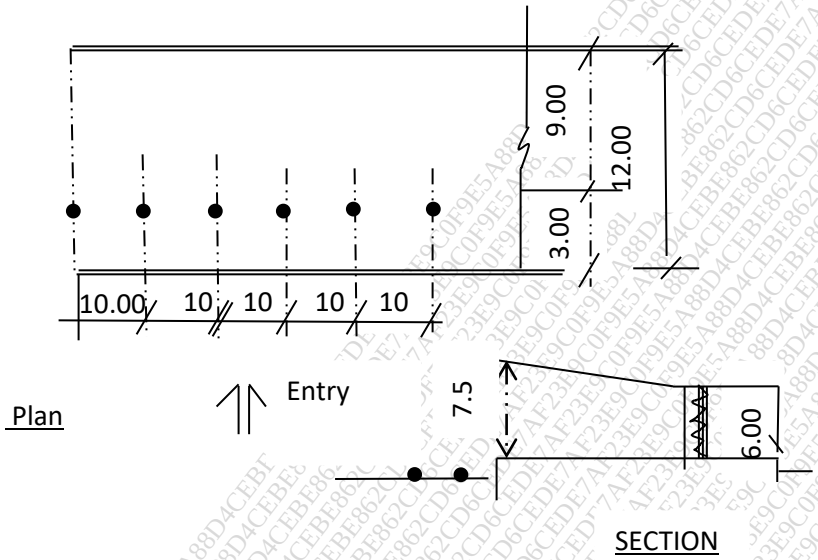
A) Draw plan and elevation of the shed showing therein 4 nos. rolling shutters and steel windows etc. (scale 1:100) 11
Draw cross section (scale 1.50)

B) Draw large scale details of
i) M.S.Truss details showing different members of the M.S.Truss (part elevation) 08
ii) Fixing details of roof truss and R.C.C columns. 08
iii) Fixing of A.C. Rridge pieces with the M.S. truss and R.C.C. gutter details with rain water down take pipes. 08

Q.2 A Taluka place in Jalna Dist. Is to be provided with a small railway stn. To caler to the needs of the people only passenger trains will halt at this railway station. The size of the platform will be 200 M×12.00 M. the roof over the platform will be A.C. sheets supported on M.S. trusses. Steel columns will be placed at 10.00 Mts. Centre to Centre. (As shown in figure). The ht. of platform will be 1.00 Mts.

A) Draw plan (scale 1:200) 11
Draw section showing the roof truss platform (scale 1:50)

B) Draw large scale details.
i) Roof truss with all connections 08
ii) Fixing of A.C. sheets on M.S. truss 08
iii) Rain water down take pipes along M.S. columns. 08
Note: M.S. column can be a built up section.



Q.3 Draw neat sketches of any four

a) Details of machine room with all details 09
b) Fixing of A.C sheet louvers for a factory shed having R.C.C. columns 09
c) Internal details of air escalator showing trends & risers 09
d) Fixing details of roof exhaust system on A.C. sheet roofing 08
e) Gutter details for a north light roof truss 08

Section B

Q.4 Describe with sketches the theory of plate tectonics. 10

Q.5 What are the essential structural forms of a building for earthquake resistance? 10

Q.6 Describe with sketches the ventilation system for multi basements. 10

Q.7 What are the ways in which disaster management is addressed? 10

H-603

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-603
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y. Arch.
A. B. C. M. VI
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1) Solve any two questions from Section A and any three question from Section B.
2) Use Drawing sheet for Section A and answer sheet for Section B.
3) Use suitable data wherever necessary.
4) Use sketches wherever necessary.

Section A

Q.1 A suspended ceiling in T.W/G.I, is to be provided for an office of size $4.0m \times 3.0m$, with a clear height of 3.0 m. 35
i) Draw a reflected ceiling plan and section to the scale of 1:20.
ii) Also draw any three enlarged details to the scale of 1:5.
iii) Direct and indirect fixing details.
iv) Types of gridding systems.

Q.2 A Theater Balcony is to be constructed for a hall admeasuring $25m \times 18m$. The balcony size is $10m \times 18m$. Balcony should be partly overlap on lower seating. Draw the following:- 35
i) Draw key plan for theatre and Balcony along with column position and size.
ii) Detail section showing Raker beam and sight lines.
iii) Reinforcement details of raker beam.
iv) Layout of beams and slab for balcony.

Q.3 Design a suitable curtain wall system for a multi-storeyed office building with five floors with the following data: 35
a) Length of the building 18.0 m.
b) Upper floor to floor ht. 3.65 m.
Draw the following:-
i) Draw plan, elevation and section.
ii) Important construction details
iii) Give the provision of openings; also give the details of the same.
Use suitable scale.

Section B

Q.4 Draw suitable sketches of following:- 10

i) Aluminum Sliding doors (isometric)

ii) Types of grids- False ceiling

Q.5 Explain cavity walls, its advantages and disadvantages and sketches at opening like doors and windows. 10

Q.6 Explain with sketches the various types of partition as per the materials used. 10

Q.7 Explain the different types of retaining walls. 10

H-605

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-605
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. Arch. (CBCS)
Building Materials – II

[Time: Two Hours] **[Max.Marks:40]**

Please check whether you have got the right question paper.

N.B
1) Solve any Four questions.
2) Draw neat sketches to elaborate your answers.
3) All questions carry equal marks.

Q.1 Explain different quality test on cement at construction sites. 10

Q.2 Write a note on placing and compaction of Plain Cement Concrete. 10

Q.3 Compare between: 10

a. Natural floor finishes and artificial floor finishes.
b. Normal composition RCC with light weight concrete.

Q.4 Explain different styles of plastering which are commonly used in construction. 10

Q.5 Give a brief account on Asbestos Cement sheet as a roofing material. 10

Q.6 Define RCC. State and explain its properties and Uses. 10

Total No. of Printed Pages:3

SUBJECT CODE NO:- H-608
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. Arch.
T.D.S. I
(REVISED)

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

Please check whether you have got the right question paper.

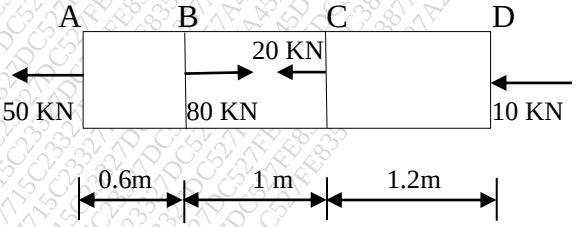
N.B
i) No supplements will be provided.
ii) Do not write anything on question paper.
iii) Question No.1 is compulsory.
iv) Out of remaining questions, solve any five.
v) Assume suitable data, if necessary.

Q.1 (a) A mild steel specimen was tested in tension and following results were obtained. 16

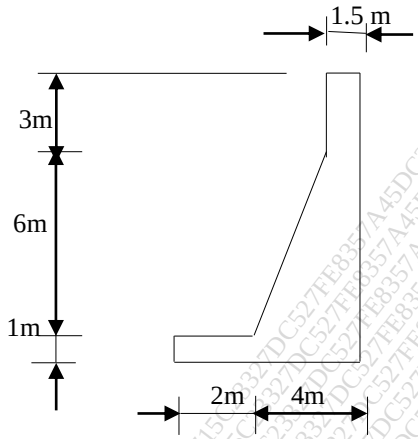
i) Diameter of the specimen = 30 mm
ii) Length of the specimen = 0.25m
iii) Extension under load of 25 KN = 0.05 mm
iv) Load at yield point = 125 KN.
v) Maximum Load = 200 KN.
vi) Length of specimen after fracture= 0.315m
vii) Specimen diameter at the neck = 21.5mm

Calculate
a) Young's Modulus b) ultimate Stress
b) Percentage elongation d) Working stress if factor of safety is 2

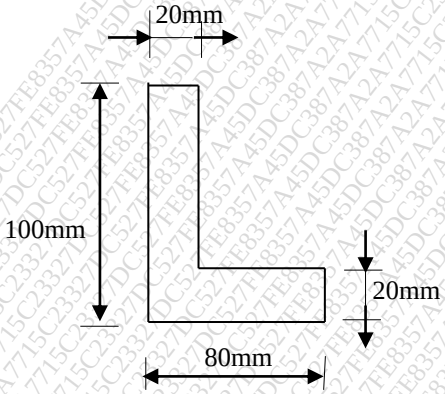
(b) A brass bar of cross sectional area 1000 mm^2 is acted upon by the forces as shown in the following figure. Determine the change in length of the bar. Take E=1.05 x 10^5 N/mm^2. 09



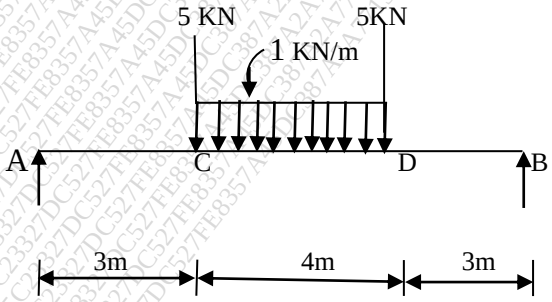
Q.2 Determine the centroid of the following section. 15



Q.3 Find the moment of inertia about its centroidal axes for the following section. 15



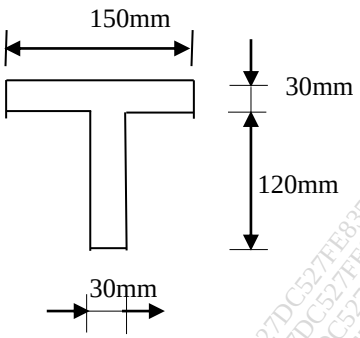
Q.4 Draw shear Force and bending moment diagrams for the following beam. Find the maximum bending moment 15



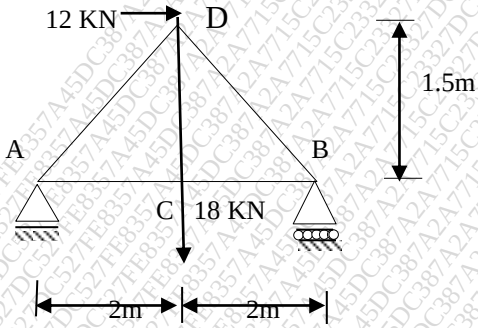
Q.5 Write short note on any three of the following 15

a) Different types of frames and determination of perfect frame
b) Centre of gravity and centroid
c) Various types supports and beams
d) Assumptions in theory of pure bending

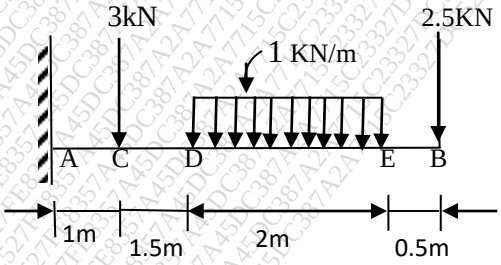
Q.6 A beam with T section as shown carries a uniformly distributed load of 40 KN/m over a span of 10m. Calculate the maximum stresses produced due to bending 15



Q.7 Determine the Forces in all members of the frame as shown in the following Figure. 15



Q.8 Draw shear force and bending moment diagrams for the following beam. 15



H-607

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-607
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
A. B. C. M. -VIII
(OLD)

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

Please check whether you have got the right question paper.

N.B
i) Solve any two question from Section A and any two question from Section B.
ii) Answer to section A must be solve on drawing sheets and answer to Section B must be solved on answer sheet.
iii) Assume suitable data and draw the suitable sketches wherever necessary.

Section – A

Q.1 Design a North-light steel truss roof for industrial building (factory shed) with A.C. sheet as roofing material from the following data. 30

a) Internal size of factory shed=13m x 30 m.
b) Height from P.C.C. top to bottom to Tie = 6m.
c) Steel Girders supported on R.C.C. columns with 230 mm thick external Brickwall.
Drawing Requirement:
i) Key plan and key section
ii) Detailed plan and detailed section.
iii) Fixing detail of glass, A.C. sheets and Gutter to North Light Roof Steel Truss.
iv) Fixing detail different members of Truss and Girder.

Q.2 Design a curtain wall of Aluminum Composite panel and glass for a commercial building. Assume 6m (Length) x 6m (Height) part of front elevation to be provided with curtain wall. 30
Drawing requirement:
a) Key plan and key section.
b) Detailed plan and detailed section.
c) Fixing detail of framework to R.C.C. columns and beams
d) Fixing detail of ACP and glass to the framework.

Q.3 Design a stall for household product of temporary nature in the 'Trade Fare' from the following data 30
i) Size of stall = 6.0m x 3.0m
ii) Height of stall = 3.6m
Drawing Requirement.
(a) Detailed Plan, elevation and section.
(b) All the important fixing details.
(c) Give the material specification in brief with material selection criteria.

Section - B

Q.4 Write a detailed note on 'Earthquake Resistant structures'. 20

Q.5 Describe different type of 'Shoring' with the help of sketches. 20

Q.6 Write short note on (any two) 20

a) Hyperboloid and paraboloid Structure.
b) Underpinning
c) Cavity Wall.

H-606

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-606
FACULTY OF SCIENCE AND TECHNOLOGY
S.Y. Arch.
A.B.C.M. - IV
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i. Answer any two question from sec 'A' and any three from sec 'B'
ii. Answer to sec 'A' must be solved on drawing sheets only .answer to sec 'B' must be solved in answer books.
iii. Assume suitable data wherever necessary and mention it Cleary.
iv. Figures to the right indicate full marks.

Section A

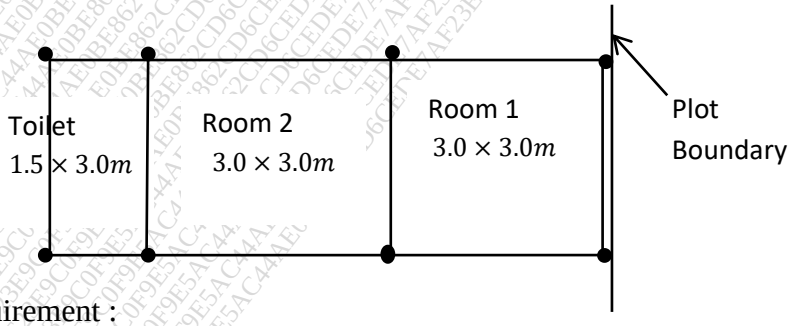
Q.1 A multipurpose hall is having size $10m \times 10m \times 6m\ ht$. Size of the column is $500 \times 500mm$ And provided at the 4 corners of the hall. Design a grid/coffered slab for the hall.

1) Draw key plan ,elevation and section of multipurpose hall 10

2) Detail plan, cross sections in both ways and elevation; of grid slab with columns and beams grid. 13

3) Draw details reinforcement of grid slab. 12

Q.2 Design RCC footing for outhouse of a bungalow having 2 rooms with attached toilet. RCC frame structure with structure with 230mm thick brick wall plinth level=0.6m, slab height=3.0m from plinth. Combination of combine, isolated, eccentric footing types can be adopted assume hard strata at 1.5 m below ground level.



Drawing requirement :

i) Key –plan, elevation and section 07

ii) Detail plan and detail cross section with reinforcement of footings. 15

iii) Reinforcement anchoring details at column-footing for all types. 13

Q.3 Draw neat and proportionate sketches of the following. Mention suitable data and measurements wherever required. 35

1) Flat slab($10m \times 10m\ c/c\ columns$)
2) Spine beam staircase (1.5 m wide)
3) RCC arches (at 1.5 m wide opening and 2.1m height.)
4) RCC bracket (1.5 m cantilever beam)
5) Cantilever canopy (1.2 m cantilever from beam and 3m length)

Section B

Q.4 Describe the uses of steel in building construction. 10

Q.5 Write short note on – 10

1) Iron Ore
2) Prefabricated doors and windows

Q.6 Write a short note on properties and uses lead. 10

Q.7 What are non-ferrous metals? Write in brief. 10

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-610
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y. Arch.
T.D.S. -V
(REVISED)

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

Please check whether you have got the right question paper.

N.B 1) Assume suitable data if necessary.
2) Q1 is compulsory. Solve any five Questions from remaining.

Q.1	a)	Explain Masonry piers with neat sketch.	05
	b)	Write a Note on materials used for a type of truss.	05
	c)	What are the effects of earthquake on structure.	05
	d)	What are the types of building structural elements? Explain two in detail.	10
Q.2	(a)	Explain types of trusses for different spans.	08
	(b)	Write the IS code specifications for trusses.	07
Q.3	(a)	Write the classification of earthquake & their effects	08
	(b)	Explain behaviour of structure during earthquake.	07
Q.4	a)	How will you relate structure with architecture? Explain with reasoning	08
	b)	Explain the aesthetics of architecture from derived structural concepts.	07
Q.5	(a)	What factors are needed to be taken into consideration for fixing up of structural elements.	08
	(b)	Explain modular co-ordination and its uses in different building plan.	07
Q.6	(a)	State the component parts of Retaining Wall along with neat sketch.	08
	(b)	Write the types of Retaining Wall & explain in brief.	07

Q.7 Write Notes on (any three) 15

a) Masonry Structures
b) Components of Steel Structures Truss
c) Uses of Retaining Wall
d) Aesthetics of Structures

Total No. of Printed Pages:1

SUBJECT CODE NO: H-611
FACULTY OF SCIENCE AND TECHNOLOGY
Fifth Year Arch.
Building Economics
(OLD)

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

Please check whether you have got the right question paper.

N.B
i) Q.1 and Q.4 are compulsory
ii) Answer any one questions from remaining Questions of Sec 'A' and any one question from remaining questions of Sec 'B'
iii) Assume suitable data whenever necessary and mention it clearly
iv) Figures to the right indicate full marks

Section A

Q.1 Explain the concepts of building economics in detail with examples 15

Q.2 Define the terms: 10
1) Labour theory
2) Semi government organization

Q.3 Describe impact of population on Indian economy 10

Section B

Q.4 Write a note on international trading and government policy 15

Q.5 Write short note on:- 10
1) Architect's Role in Building Economics
2) Financial Schemes for housing

Q.6 How does social condition impact on the construction and site selection? 10

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-612
FACULTY OF SCIENCE AND TECHNOLOGY
S.Y. Arch.
T. D. S. - III
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1) Question no 1 is compulsory. Answer any two from Section A & three from Section B.
2) Assume suitable data if necessary.
3) Figures to right indicate the maximum marks.
4) Use of non-programmable calculator is allowed.
5) Use of I.S- 456- 2000 is permitted.

Section A

Q.1 a) Explain importance of strength of structural member in comparison with its aesthetic appearance? 06

b) Select and write complete answer from the following. 12

i) A Under reinforced section is one where
   a. $Xu \geq Xumax$
   b. $Xu \leq Xumax$
   c. None of them.

ii) For resisting same moment the depth of singly reinforced beam is ---------- than doubly reinforced beam.
   a. Less
   b. Equal
   c. More

iii) Column is a ---------- member.
   a. Tension
   b. Compression
   c. None of them.

iv) In singly reinforced cantilever R C C beam main reinforcement is provided on
   a. Tension side
   b. Compression side
   c. At middle

v) Minimum diameter of bar in R C C column is
   a. 16 mm
   b. 12 mm
   c. 08 mm

vi) Minimum cover to the R C C Slab reinforcement as per I S 456-2000 is
   a. 15 mm
   b. 25 mm
   c. 20 mm

Q.2 Design Simply supported beam of span 4.5 Mtr. Is to carries Uniform Dead Load of 20 KN/M. And Uniform live load of 30 KN/M. The width of the support 230 mm. Assume grade M-20 Concrete and Fe-500 steel. 16

Q.3 Design simply supported one way slab provided over an Industrial building passage of clear span 3.0 Mtr. is to carry. The width of the support is 300 mm. Assume M-20 Concrete and Fe-500. 16

Q.4 Write short note on the following? 16

1. Limit state collapse.
2. Design Philosophy of structural design.
3. What is flanged beam?
4. What are the conditions when doubly reinforced beams are used?

Section B

Q.5 a. What is long Column & short Column? 04

b. Design a short R. C. Column to carry an ultimate load of 1200 KN; both ends of the column are fixed having length 3.0 m. Use Grade M-25 Concrete and Fe-415 steel. 12

Q.6 Design a R.C. Slab for a room size 6.0 m × 5.0 m. The slab is simply supported on four sides. The slab Carries live load of 3 KN/M^2 floor finish load of 1 KN/M^2 Use Grade M-20 Concrete and Fe-415 steel. 17

Q.7 Enlist the steps involve for the design of RCC Footing? Also draw neat sketch showing its details including reinforcement? 17

Q.8 Design the main stair of a residential building has to be located in stair room measuring 3.5 M × 5.5M the vertical distance between the floors is 3.75 M. Use M20 grade of concrete & Fe-415 grade of steel. 16

Total No. of Printed Pages:1

SUBJECT CODE NO: H-614
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch
T. D. S. -VIII
(OLD)

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

Please check whether you have got the right question paper.

N.B i) Assume any suitable data if required & state it clearly.
ii) Solve any two questions from each section.

Section A

Q.1 Design an isolated rectangular sloped footing for the column of size 230×650 mm reinforced with 6 bars of 20mm diameter and carrying an axial load of 1200 KN the Bearing capacity of soil is 300 KN/m^2 use M_{20} & fe_{415} effective cover from bottom steel is 60mm. take offset from the face of the column equal to 50mm. 20

Q.2 Design an R.C. Slab for a room measuring 6.5m×5m the slabs is to be cast monolathically over the beams with corners held down. The width of supporting beam is 230mm. the slab carries superimposed load of 5 KN/mm^2 use M_{20} & fe_{500}. 20

Q.3
a) Describe the common Geometrical configurations of staircases. 06
b) What are the different types of loads acts on the building? 06
c) Difference between one way Slab and two way Slab. 06

Section B

Q.4 Write short notes on following any three. 18
a) Different types of footing
b) Classification of slab
c) Limit state of collapse
d) Various types of staircases with their detailing
e) Characteristics strength and characteristics load

Q.5
a) Calculate the area of reinforcement required for a singly R/F concrete Beam 230mm wide & 380mm deep to resist an ultimate moment of 50KN/m assume M_{20} fe_{500} combination of concrete & steel and an effective cover = 35mm. 10
b) Define characteristics of singly R/F and doubly R/F Beam. 07

Q.6 a) For a column 230×430mm in section and R/F with 6 NOS ϕ16mm of grade fe_{250}. Determine the ultimate strength in axial compression for concrete of grade M_{20} if unsupported length of column is a) 3.0m b) 3.6m 17

Total No. of Printed Pages:1

SUBJECT CODE NO: H-615
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch.
DFA-II
(REVISED)

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

Please check whether you have got the right question paper.

N.B i) Question No.1 from section A and Question No 5 from section B are compulsory. Out of the remaining three questions from each section, Solve any two.
ii) Answer to the two sections must be solved on same answer book.
iii) Wherever necessary, support your answers with neat sketches.

Section A

Q.1 a. Explain how form and function in nature and man-made objects are interrelated, give suitable example. 14
b. Describe the elements of circulation pattern. 10

Q.2 Describe giving examples how built environment help people to perform their activities efficiently. 13

Q.3 Explain how the use of computers and the latest technologies are influencing the built form. 13

Q.4 Architect Louis-I-Kahn was a master in the creation of built environment. Describe giving examples from any of his works how the spaces were created for efficient human activities. 13

Section B

Q.5 a. Enumerate the different style of architecture from industrial revolution to present day. 14
b. Discuss on miscellaneous circulation pattern. 10

Q.6 Define ‘comfort’. Describe how climate has direct effect on built environment. 13

Q.7 Explain how architecture is a part of culture and write the aspect of culture. 13

Q.8 “Material change the aesthetics of a building” Justify the sentence. 13

Total No. of Printed Pages:1

SUBJECT CODE NO: H-617
FACULTY OF SCIENCE AND TECHNOLOGY
T. Y. Arch.
H.S.S.
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i) Answer any five questions
ii) All questions carry equal marks
iii) Draw sketches whenever necessary

Q.1 Write short notes on any four 20
a) Urban nodes
b) Fringe Area & suburbs
c) Economic surveys
d) Age-sex pyramid
e) Central business district

Q.2 Write an essay on contribution of sir Patrick Geddes in the field of town planning 20

Q.3 Draw neat sketch and explain "Crystellers central place theory" and its application in Regional planning. 20

Q.4 Write an essay on problems faced by a typical Indian Metropolitian city with suitable examples. Also Comment on suitable corrective measures for them 20

Q.5 Explain with suitable examples any two of the following 20
a) Importance of site & situation in evolution and growth of towns
b) Relationship between urban & rural areas
c) Central Business District (CBD)

Q.6 What are Master Plans? Explain the contents of master plan and its importance in development of towns & cities 20

Q.7 What do you understand by delineation of Region? Explain concept of region & its types with suitable examples 20

Total No. of Printed Pages:2

SUBJECT CODE NO: H-618
FACULTY OF SCIENCE AND TECHNOLOGY
Fifth Year Arch
Professional Practice- II
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i) Q. No. 1 and Q. No. 5 are compulsory out of the remaining six questions, solve any four questions.
ii) Assume suitable data whenever necessary and mention as such.
iii) Figure to the right indicate full marks

Q.1 A party desires to purchase a r.c.c. framed apartment building on the outskirts of Aurangabad city. Prepare a valuation report advising the party on the purchase price of same given the following data 25

1) Area of land F.S.I. fully consumed	400m^2
2) Construction cost	Rs. 88,00,000/- (Rs. 88 Lakhs)
3) Total Rent of property	Rs. 90,000/ p.m.
4) Future life of building 60 years	
5) Municipal taxes @ 40% on cross rent	
6) Management & collection charges @ 6% on gross rent	
7) Repairs and insurance charges to be as per usual	

Year's purchase for future life of 60 years @7% on capital allowing redemption of capital @4%.

Q.2 Describe the factors for ascertaining the market value of land $12^{1/2}$

Q.3 Describe the conduct of arbitration proceedings $12^{1/2}$

Q.4 What are the basic principles of land acquisition proceedings $12^{1/2}$

Q.5 Write short notes on any five 25
a) Belting method of valuation
b) Year's purchase
c) Sentimental value
d) Solatium
e) Leasehold Tenure
f) Reversionary value of land.

Q.6 What are natural rights and the benefits provided by nature for its enjoyment $12^{1/2}$

Q.7 What are the modes for acquiring easements $12^{1/2}$

Q.8 What are the essential requisites of a valid award in arbitration $12^{1/2}$

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-619
FACULTY OF SCIENCE AND TECHNOLOGY
S. Y. Arch.
H. A. III
(REVISED)

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

Please check whether you have got the right question paper.

N.B i) Answer to the two sections must be written on the same answer book
ii) Q.No. 1 from section A and Q. No 5 from section B are compulsory
iii) Attempt any two questions out of the remaining of each section.

Section A

Q.1 Write a short note with neat sketches (any four) 24

a) Abbey-Aux-Hommes
b) Sexapartite vault
c) Gothic flying bultresses
d) Clearstorey window
e) Leaning Tower, Pisa
f) Spires and Pinnacles.

Q.2 Distinguish the salient features of Romansque style in North and South France ,giving suitable examples 13

Q.3 Giving suitable examples evaluate the architectural character of Gothic style in British Isle? 13

Q.4 Explain how the Romansque style is influence by various factors. 13

Section B

Q.5 Write short note with neat sketches (any four) 24

a) Palazzo Ricardi
b) Rococco
c) Inigo Jones
d) Chapel of Henry II
e) Ecclesiastical
f) Michaelangelo

Q.6 Discuss the contribution of any two Renaissance era architects: 13

a) Brunellischi
b) Christopher wren
c) Palladio

Q.7 Discuss with the help of sketches the Renaissance period in England with suitable example. 13

Q.8 Distinguish the characteristics features of Italian Renaissance with that of British Renaissance. 13

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-621
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
L.D- II
(OLD)

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

Please check whether you have got the right question paper.

N.B i) Solve any three question from Section A and Section B.
ii) Use sketches whenever necessary.
iii) Answer to the two sections must be written separately.

Section A

Q.1 Write an essay on Ecological Landscape Architecture? 15

Q.2 Describe and illustrate the use of landscape elements for microclimatic control? 15

Q.3 Explain the new concept of landscape planning in detail? 15

Q.4 Write short notes on: 15
a) Physical climatic factors;
b) Natural landscape ;
c) Visible landscape;

Section B

Q.5 Describe in brief the site development by exploiting natural forms with respect to the land use implications and landforms etc. 10

Q.6 Explain in detail the passive and active recreation enjoyed by the citizens of all age by the use of public parks. 10

Q.7 Describe in brief various aspects related to 'Life and recreation' and illustrate with example the scope for whole range "World of Recreation" 10

Q.8 Write short notes on: 10
a) Climate responsive landscape design;
b) Ecological considerations for Land use planning.

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-622
FACULTY OF SCIENCE AND TECHNOLOGY
F.Y. Arch.
H.A. - I
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i) Q.No.1 is compulsory.
ii) Solve any FIVE questions out of the remaining questions.
iii) Draw neat sketches wherever necessary.

Q.1 Draw sketches only:- 20
a) Kailashnath temple , ellora
b) Sun temple at konark
c) A typical vedicvillege
d) Shore temple, mahabalipuram
e) Durga temple, Ainole

Q.2 Draw a neat sketch and explain stupa and its symbolism. 16

Q.3 Compare “Indo Aryan” and “Dravidian” Temple styles with suitable examples of each. 16

Q.4 Explain the symbolism of “Rathas” or seven Pagodas at mahabolipuram. Draw sketches of any two Rathas. 16

Q.5 Explain in detail along with neat sketch any ONE temple. 16
a) Lingaraja temple, Bhuvaneshwar.
b) Meenakshi temple, Madurai

Q.6 Draw neat sketches and explain typical Dravidian and Indo Argan temples with suitable examples. 16

Q.7 Write short notes on any four:- 16
a) Chaitya Halls at Ajanta
b) Hinayana&Mhayana period.
c) Evolution & form of 60 puram.
d) Roch cut caves-sudama& rani gumpha
e) Buddhist “Torana”

Total No. of Printed Pages:1

SUBJECT CODE NO: H-623
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y. ARCH.
E.S.S. - IV
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i) Question No 1 from section A and Question No 5 from section B are compulsory.
ii) Solve any two questions each from section A and section B from the remaining.
iii) Assume suitable data wherever required.
iv) Figures to the right indicate full marks.

Section A

Q.1 Give a brief classification of various Air conditioning systems. 20

Q.2 Write a paragraph on – "Energy efficiency and Mechanical Ventilation". 15

Q.3 What is meant by 'ton' of cooling? 15

Q.4 Write Short Notes on (any Two) 15
a. Air changes
b. Working of Air Handling Unit
c. Diffusers

Section B

Q.5 Explain fire, fire triangle, various fire groups and extinguishers for various groups. 20

Q.6 Write Short Notes on (any Two) 15
a. Fire hydrants
b. Wet and dry risers
c. Fire insulating materials

Q.7 Describe planning of an Auditorium considering fire safety. 15

Q.8 Explain various types of fire detection and fire fighting installations. 15

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-624
FACULTY OF SCIENCE AND TECHNOLOGY
S. Y. Arch.
E.S.S.-II
(REVISED)

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

Please check whether you have got the right question paper.

N.B
i. Q.No.1 from section A and Q.No.5 from section B are compulsory.
ii. Attempt any two questions from the remaining questions in each section
iii. Support your answer with neat sketches.

Section A

Q.1 What is sound absorption & sound insulation? Explain the difference between them. How the absorptive materials are not good for sound insulation purpose. 20

Q.2 Explain in short(any three) 15

a) Acoustical correction.
b) Velocity of sound.
c) Inverse square law.
d) Sound focii & dead spot.

Q.3 Explain with neat sketches (any two) 15

a) Cavity wall construction.
b) Sound shadow.
c) Effect of temperature on sound.

Q.4 What are the common acoustical defects in a hall .explain with its remedial solutions? 15

Section B

Q.5 How will you treat the building acoustically which is situated along highway side. 20

Q.6 Write short notes(any three) 15

a) Sound reinforcement
b) Edge effect.
c) Suspended ceiling.
d) Transmission loss.

Q.7 Explain with neat sketches(any two) 15

a) Cavity resonators.
b) Reflection of sound waves.
c) Sound distribution in a room.

Q.8 Explain with neat sketches the sound at night time is more audible than at day time. 15

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-625
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
B.B.C.P
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1. Solve any five questions from the following.
2. Assume suitable data wherever necessary.

Q.1 What is costal regulation zone (CRZ) and state its need? Explain the general building development code in regard to this zone. 20

Q.2 Give an overview and administrative procedure for obtaining building permission at various stages from the statuary authority, like municipal corporation. 20

Q.3 Write notes on the following: (any two) 20

a) Land use & building classifications.
b) Tenement Densities.
c) Compulsory open spaces.

Q.4 Enumerate: norms for fire protection as per NBC for different types of buildings. 20

Q.5 Write explanatory note on: "M.I.D.C." 20

Q.6 write notes of the following: (any two) 20

a) Norms for light & ventilation to the building.
b) Means of access.
c) Norms for corridors and stairways in institutional buildings.

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-626
FACULTY OF SCIENCE AND TECHNOLOGY
Fourth Year Arch.
PP – II
(OLD)

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

Please check whether you have got the right question paper.

N.B
i. Q.No.1 from section A and Q.No.5 from section B are compulsory.
ii. Attempt any two questions from the remaining questions in each section
iii. Assume suitable data, if necessary.
iv. Figure on the right indicate full marks.

Section A

Q.1 Find out the valuation of a property situated at a junction of two roads. 20
The plot admeasures 540sq.m and the residential building thereon of first class construction having RCC framed structure. It has ground plus one floor the data available is a follows:
i) Ground floor (180 Sq. M) YR. Of const. 1980
ii) First floor (150 Sq. M) YR. Of const. 1990
iii) Replacement const.
a) Ground floor 11,000/-Sq.M
b) First floor 10,500/-Sq.M
iv) Market value of plot 18,000/-Sq.M
v) Total life of building 80 years
vi) Salvage value------- 10%

Q.2 Describe the main purpose of valuation. 10

Q.3 Explain what is 'Freehold Tenure' and 'lease Hold Tenure'. 10

Q.4 What are the factors which determine the life of a building? 10

Section B

Q.5 Describe cost, price and value and state their essential characteristics. 15

Q.6 Describe the conduct of an arbitrational processing. 10

Q.7 Write short notes on any two. 10
a) Market value.
b) Rental method of valuation.
c) Annual repairs.

Q.8 Write short notes on any two. 10

a) Collection and management charges.
b) Expected matters in arbitration.
c) Obsolescence.

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-627
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch.
A.B.C.M. I
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1. Solve any two questions from section A and any three questions from section B.
2. Use drawing sheet for section A and answer sheet for section B
3. Assume suitable data wherever necessary.
4. Use sketches wherever necessary. To be solved on answer sheet.

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Section A

Q.1 A room with internal dimension $3.60 \times 7.50m$ is to be constructed in 1 brick thk wall. The room is framed structure, the depth of footing is 1.50m and plinth is 0.45m above ground level, the RCC slab is 3.0m above plinth level and sill at 0.90m etc. 35

a) Draw key plan of the room showing columns and footings. (1.50)
b) Draw section showing different components of the structure. (1:10)

Q.2 A hall measuring $3m \times 6m$ is made in double Flemish bond in 1 ½ brick thick. Wall. It has attached piers on the peripheral wall 2m c/c. The size of pier is 2 brick thick. Square. It is projecting ½ brick outside the wall. The hall has a 3m wide verandah in front, the roof of which is supported on 2 ½ brick isolated piers. 35

a) Draw key plan of the room and verandah showing the positions of piers.
b) Draw plan elevation and isometric views of attached and detached piers.

Q.3 Draw neat sketches of the following 35

a) King closer
b) Queen closer
c) Mitred closer
d) Bevelled closer
e) Half BAT

Section B

Q.4 What are the different constructions techniques associated with mud as a building material? 10

Q.5 Compare between 10
a) Clamp Burning and Klin Burning
b) Bulls Trench Klin and Hoffman's Klin.

Q.6 Differentiate between English Bond and Flemish bond. Explain why English bond is considered as the strongest bond. 10

Q.7 Explain qualities of good timber and process of seasoning of timber. 10

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-630
FACULTY OF SCIENCE AND TECHNOLOGY
S.Y. Arch.
A.B.C.M. - III
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1. Solve any **two** questions from Section A and any **Three** questions from Section B.
2. Use drawing sheets for Section A and answer sheet for Section B.
3. Assume suitable data wherever required.
4. Use sketches wherever necessary.

Section A

Q.1 Design suitable type of timber floor for a first floor hall from the following data: 35

i. Size of hall=$4.4 \times 8.00 mts$
ii. All walls-$350 mm\ thk$. Brick wall.
iii. Floor to ceiling height-$3.20 mts$.

Drawing requirements
i. Detailed plan
ii. Detailed two sections along both the span.
iii. All important Constructional and joinery details.

Q.2 RCC dogged legged staircase is to be provided for a residential building. The structure is G+1 floor. 35
Width of staircase flight is 1.0mts. And floor to floor height is 3.20mts. Draw:
i. Plan, sectional elevation.
ii. Enlarged section showing reinforcement details.
iii. Fixing details of a suitable handrail.
iv. Give the material specification in detail.
Use suitable scale.

Q.3 A suitable timber staircase is to be provided for a showroom from the data given below. 35
i. Internal size of showroom=$9.00 \times 12.00 mts$
ii. Size of mezzanine=$9.00 \times 6.00 mts$
iii. Height of Mezzanine=$2.40 mts$
iv. Total height of the showroom from plinth to slab level=$5.20 mts$
v. RCC framed structure with $230 mm\ thk$. Brick wall
vi. Mezzanine floor in timber.

Drawing requirements
i. Key plan and section
ii. Detailed plan and detailed two sections
iii. All important fixing, Constructional and joinery details.

Section B

Q.4 Write short note on (Any Two) 10

a) Types of Polymer-its uses.
b) Oil Varnish.
c) Structural Glass.

Q.5 Write a note on properties of Glass and its use in building industry. 10

Q.6 What are laminates? Explain its different types, uses and characteristics. 10

Q.7 Write a note on Cement Paint and its application external on sand faced plaster surface. 10

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-629
FACULTY OF SCIENCE AND TECHNOLOGY
T.Y. Arch.
A.B.C.M. - V
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1. Answer any two questions from section 'A' and any three from section 'B'.
2. Answer to sec A must be solved on drawing sheets only. Answers to Section 'B' must be solved in answer books.
3. Assume suitable data wherever necessary and mention it clearly.
4. Figures to the right indicate full marks.

Section A

Q.1 Design a north-light roof truss for a production department of a factory. The size of the shed is $size\ 20m \times 7m \times 6m$ ht. (from plinth to bottom of tie beam), and plinth is 1.2m. Shorter side of the hall is facing toward north. The columns of size 300 × 450 mm are placed at 4m c/c at external walls only.

1. Draw key plan, elevation and section of shed with north light roof truss. 10
2. Detail plan, elevation and detail cross section of north light roof truss. 13
3. Joinery details of ridge, Glass fixing, tie beam and column with gutter. 12

Q.2 Design a steel staircase for a factory shed having internal size as 12m × 36m with truss and AC sheet roofing. RCC columns having size 380× 450 mm with 230mm brick wall are provided to support the structure. The height from finished plinth to bottom of tie beam is 6.5 m. plinth is 1.2m. Mezzanine floor is provided above 3.0m from plinth level. To reach to the mezzanine floor, steel staircase in 2 flights is to be provided. Rise=150 mm, tread=300mm.
Drawing requirements:-

1. Key-plan, elevation and section 07
2. Detail plan and detail cross-section of steel staircase. 11
3. Joinery details at supports, baluster fixing with step, tread fixing. 12
4. Sketch view of staircase. 05

Q.3 Draw neat and proportionate sketches of the following. Mention suitable data and measurements wherever required. 35

1. Bank vault steel door
2. Steel window
3. Roof beam and column connection
4. Types of connections in steel
5. Still mezzanine floor.

Section B

Q.4 What is Asphalt? Write a detail note on properties and uses of Asphalt in building industry. 10

Q.5 Write short note on:- 10
1. Steel industry
2. Gypsum powder

Q.6 "Plastic is the revolution in building Industry", write a note. 10

Q.7 Write a note on Fly Ash with properties and uses in building construction. 10

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-628
FACULTY OF SCIENCE AND TECHNOLOGY
F. Y. Arch. (CBCS)
A.B.C. I

[Time: Four Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Solve any two questions from sec. A and any two from Sec. B
2. Answers to Sec A must be solved on drawing sheets only answers to Sec B can be solve on answers sheets.
3. Assume suitable data wherever necessary.
4. Figures to the right indicate full marks.

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Section A

Q.1 a) Draw neat sketches with dimensions of any two – 08
- i) Plinth Header
- ii) Relieving Arch.
- iii) Brick backed Ashlar Masonry
- iv) A brick lintel

Choose appropriate scale.

b) Draw plan and isometric view of 3 successive courses of 1 ½ thick brick cross junction walls of a building showing type of bricks used
- i) Plan 10
- ii) Isometric view 12

Q.2 A single leaf fully paneled teak wood door is to be designed for an apartment. The opening in the wall is 1.00Mt. Wide and the height is 2.10 mt. The size of t.w frame is 75 X125 and the thickness of t.w shutter is 35mm. thick. The building is a load bearing structure.

A) Draw plan elevation and section of the t.w door (scale1:10) 09

B) Draw large scale details of
- i) Joint between t.w post and t.w head of the door 07
- ii) Joint between look rail and t.w style. 07
- iii) Joint between look rail, style & t.w panel. (scale1:2) 07

Q.3 Draw neat sketches of any four 30
- i) 3 successive courses of a rat trap bond
- ii) Brick wall in herring bone pattern
- iii) Plan and isometric view of a 2 brick thick isolated column in English Bond. Height of column is 1.40mt
- iv) Section and elevation of a t.w lintel for a 1 ½ bk.wall
- v) Parliamentary hinge for a single leaf door.

Section B

Q.4 What are the requirements for laying of bricks for a load- bearing structure. 10

Q.5 Describe different type of joints used in stone masonry. 10

Q.6 Describe at least 3 functions of a piers in brick masonry with sketches. 10