Total No. of Printed Pages:2

SUBJECT CODE NO:- H-606
FACULTY OF ENGINEERING 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 questions 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

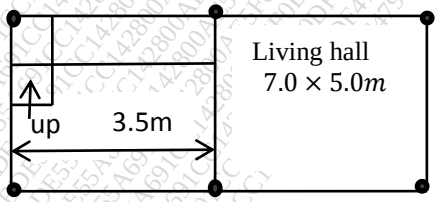
Q.1 A multipurpose hall is having size $30m \times 30m \times 6m\ ht$. Size of the column is $500 \times 500mm$ And provided at 10m c/c in the hall. Design a flat slab for the hall.

1) Draw key plan ,elevation and multipurpose hall 10

2) Detail plan, cross sections in both ways and elevation; of flat slab with columns. Draw details reinforcement of flat slab. 13

3) Draw column and slab joint with column capital and slab drop with reinforcement. 12

Q.2 Design RCC folded staircase in a living hall of a residential bungalow. Size of the living hall is $7m \times 5m$, and double storied .the folded staircase is to be provided in L-shape at one corner of 2 external walls of the living hall, to reach the height of 3.0m from plinth level. Flight of staircase is 1.0m wide.$R = 150mm, T = 300mm$



Drawing requirement :

i) Key –plan, elevation and section 07

ii) Details plan and details cross section with reinforcement of folded staircase. 15

iii) Reinforcement anchoring details at rise and tread, baluster and handrail fixing details, fixing at landing. 13

Q.3 Draw construction details of the following with suitable data and measurements wherever required. 35

1) Waffle slab($10 \times 10 \times 6\ m\ panel$)
2) Reinforcement of portal frame($size\ 450 \times 600mm, 6.5m\ ht.$)
3) RCC lintels($230 \times 230mm\ at\ 2.1m\ ht.$)
4) RCC screen wall (with 4"×4"$voids\ at\ 1'6"\ c/c\ distance$)
5) Cantilever balcony ($0.9m\ cantilever\ and\ 2.5\ m\ length\ at\ 3.6\ m\ ht.\ from\ ground$)

Section B

Q.4 Describe the different types of cast iron 10

Q.5 Write short note on – 10

1) Copper
2) Lead

Q.6 Describe in detail advance building construction system developed by research institutes in India. 10

Q.7 Enumerate properties of aluminum. 10

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-612
FACULTY OF ENGINEERING 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 simply supported 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 6 Mtr. Is to carries Uniform Dead Load of $20\ KN/M$. Inclusive of self wt of beam and uniform live load of $30\ KN/M$. The width of the support is 230 mm. Assume Grade M-25 Concrete and Fe-415 steel. 16

Q.3 Design simply supported one way slab provided over a school building passage of clear span 3.5 Mtr is to carry. The width of the support is 250 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 axial load of 1650 KN, both ends of the column are hinged having length 3.2m. Use Grade M-25 Concrete and Fe-415 steel. 12

Q.6 Design a R.C. Slab for a room size $6.0m \times 4.75m$. 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 an office building has to be located in stair room measuring 3.5 M $\times$ 5.5 M . The vertical distance between the floor 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-619
FACULTY OF ENGINEERING 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 section must be written on the same answer book.
ii) Q.no 1 from Section A and Q.no 5 from section B are compulsory

Section A

Q.1 Write a short note with neat sketches (any four) 24
a) Romansque windows
b) Choir of church
c) S. Michele,Pavia
d) Chevet and chapel
e) Types of vaults
f) Baptistry

Q.2 Show how the climate and material had direct influence of Romansque style in Italy. 13

Q.3 "Gothic style buildings changed the skyline of British Isles " Justify the statement. 13

Q.4 Enumerate the Gothic architectural features in Milan cathedral , Italy. 13

Section B

Q.5 Write short note with neat sketches (any four) 24
a) Renaissance Art
b) Mannerism
c) British Secular Renaissance
d) Palazzo Riccardi
e) Brunelleschi
f) Elizabethan Mansion

Q.6 Discuss the architectural features of St. Paul cathedral London 13

Q.7 Explain how the Italian Renaissance architect contribute to evaluate the style? 13

Q.8 What is Renaissance? Explain the evolution and development of Italian Renaissance style giving suitable example. 13

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-624
FACULTY OF ENGINEERING 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. Draw neat sketches to support your answer.

Section A

Q.1 a) How do you design acoustically an auditorium? Explain with sketches. 15
b) Name the materials you are using in auditorium. Explain its properties & where do you apply those materials in auditorium. 05

Q.2 Write short notes (any three) 15

a) Sound absorption & sound insulation.
b) Echo& reverberation.
c) Sabine's equation for R.T.
d) Edge effect.

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

a) Transmission & transmission loss
b) Sound shadow.
c) Cavity resonators.

Q.4 What are acoustical defects? Explain with the help of sketches? Give remedies for the defects. 15

Section B

Q.5 Explain need of studying acoustics? Explain with neat sketches the behavior of sound on different surfaces? 20

Q.6 Write short notes (any three) 15

a) Sound reinforcement
b) Velocity & wavelength of sound.
c) Indoor & outdoor noise.
d) Sound focii & dead spot.

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

a) Floating floor
b) Effect of temperature on sound.
c) Suspended ceiling.

Q.8 Discuss the different types of sound absorptive materials .with its special qualities. 15

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-630
FACULTY OF ENGINEERING 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. Question No1 from Section A and Question No5 from Section B are compulsory.
2. Solve any **two** questions each from Section A and Section B from the remaining.
3. Assume suitable data wherever required.
4. Use sketches wherever necessary.

Section A

Q.1 RCC open well staircase is to be provided for a institutional building. The structure is G+ 1 floor. Width of staircase flight is 1.650 mts. And floor to floor height is 3.60mts. Draw: 30

i. Plan, sectional elevation.
ii. Enlarged section showing reinforcement details of waist slab.
iii. Fixing details of a suitable handrail.
iv. Give the material specification in detail.
Use suitable scale.

Q.2 Write short notes on(Any Two) 10

a) Cement Paint.
b) Veneer.
c) Spirit Varnish.

Q.3 Write a note on the properties of glass and its use in building industry. 10

Q.4 Explain the factors to be considered for selecting a particular type of paint for an internal neeru finished plastered surface. 10

Section B

Q.5 Design suitable type of timber floor for a first floor hall from the following data: 30

i. Size of hall=$2.4 \times 5.4 mts$
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 spans.
iii) All important constructional and joinery details.

Q.6 Draw neat Sketches(Any Two) 10

a) Bifurcated Staircase.
b) Cut String Timber staircase
c) Types of strutting used in timber flooring.

Q.7 Write a note on use of PVC in building industry. 10

Q.8 Write a note on use of timber and its industrial products in building industry. 10

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-635
FACULTY OF ENGINEERING 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.

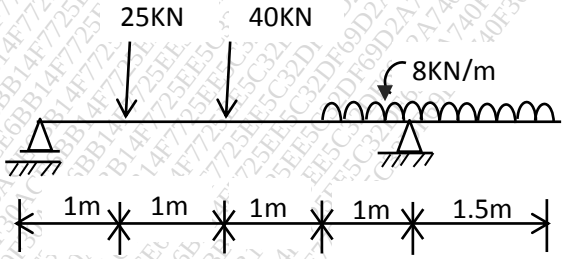
N.B
i. Solve any five questions.
ii. Assume suitable data if necessary.
iii. Figures to the right indicate maximum marks.
iv. Use of non-programmable calculator is allowed.

Section A

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 beam ABCD is simply supported at A & C. AB= 5 m, BC= 3 m, CD= 2 m. it carries UDL of 20 KN/M on portion AB and point of load of 50 KN at Overhang portion CD carries UDL of 20 KN/M use Macaulay's method and prepare the equations for slope and deflection. Find the slope at B and deflection at D. take $EI = 4000\ KN - M^2$. 20

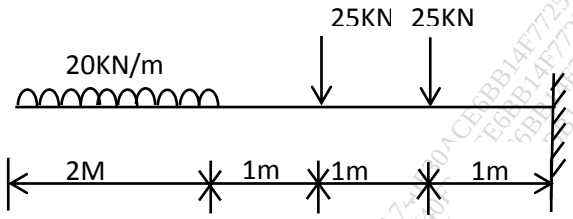
Q.3 Draw shear force and bending moment diagram for the beam as shown below. 20



Q.4 a uniform T-section beam is 100 mm wide by 150 mm deep 25 mm thickness of flange and 15 mm thickness web . UDL that the beam can carry over a simply supported beam of span 5 M. 20KN/M. draw shear stress distribution diagram for the beam. 20

Q.5
a) Explain the concept of pure bending. 08
b) Write short note End condition of column 06
c) Write note on statically indeterminate structure. 06

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-645
FACULTY OF ENGINEERING 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 and Q.No.5 are compulsory and
Solve any two questions from remaining from each sections.
ii) Support your answer with neat sketch.

Section A

Q.1 Explain with neat sketches different methods of water distribution to a town. 20

Q.2 Explain with neat sketches [any three] 15
- i) Sources of water
- ii) Solar water heating system
- iii) Water treatment process
- iv) Water demand

Q.3 Importance of rain water harvesting system with proper sketches. 15

Q.4 Explain with neat sketch the hot water supply system to a multistoried building. 15

Section B

Q.5 Importance of house drainage system & its principles. 20

Q.6 Explain with neat sketches [any three] 15
- i) Anti-siphonage pipe
- ii) Biogas plant
- iii) Septic tank
- iv) Man hole

Q.7 Explain with detail sketches the method's / stage's of sewage treatment process. 15

Q.8 Explain with proper sketches intermittent and trickling sand filters. 15

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-640
FACULTY OF ENGINEERING 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 sections.

Section A

Q.1 Write short note with sketches (any four) 24
(a) Mubarrak Sayyid Tomb
(b) Minars and Minarets
(c) Farid Shaikh's Tomb
(d) Qutub Minar, Delhi
(e) Rauzas
(f) Islamic arcuated system

Q.2 Analyse the shapes of domes during Indo-Islamic architecture with proper sketches and examples. 13

Q.3 Describe the architectural features of Tughlaq dynasty at Delhi supported with sketches. 13

Q.4 Enlist and describe the buildings of Hushang shah reign at Mandu. 13

Section B

Q.5 Write short note with neat sketches (any four) 24
(a) Jodhabai's Palace, Fatehpur
(b) Amar Singh Gate, Agra Fort
(c) Itimad-ud-Daula, Agra
(d) Jami Masjid, Mandu
(e) Liwans of Gujarat
(f) Salim Chisti Tomb

Q.6 Explain the Mughal period landscape scheme giving suitable examples 13

Q.7 "Emperor Akbar's secular nature is reflected in building of his time" Justify the sentence. 13

Q.8 How the Emperor Shahjahans buildings differed from his ancestors, discuss giving suitable examples. 13

Total No. of Printed Pages:2

SUBJECT CODE NO: H-649
FACULTY OF ENGINEERING AND TECHNOLOGY
S. Y. Arch.
A.D. III
(REVISED)

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

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: A WEEKEND HOME

A Businessmen joint family from Aurangabad desires to construct A Weekend Home for their family at Mahismal, where they can stay every weekend with their family members and friends. The family consists of three brothers, their wives and six children.
The site owned by them is located by a lake, surrounded by greenery.

REQUIREMENTS:

The project is divided in 4 zones:

1. Accommodation zone
   a. Entrance lobby @ 10 sq mts
   b. Drawing room @ 40 to 45 sq mts.
   c. Dining Room. @ 30 to 35 sq mts.
   d. Kitchen + store @ 25 to 30 sq mts each.
   e. Common Toilet
   f. 3 nos. Master Bedrooms with attach toilet — 20-25 sq mts
   g. 2 nos. children Bedroom with attach toilet — 20-25 sq mts
   h. 2 Guest bedrooms with attach toilet — 15 — 20 sq mts.
   i. Quarter for care takers (servant's) min 6 mts away from the main bldg. 30 -35 sq mts.

2. Recreational zone:
    a. Indoor recreational area - @ 75 to 80 sq mts.
    b. Swimming pool
    c. Landscape/ Jogging track etc.
    d. Party lawns - 30 persons.

3. Parking facility
    a. Garage for 2 buses
    b. 4- Four wheelers
    c. 5 - Two wheelers.

Drawings Requirements: (Use Suitable Scale)

a) Conceptual drawing
b) Site plan
c) Floor Plan (all bldg. blocks on site)
d) Sections and Elevation (minimum two each)
e) Site section
f) Landscaping detail
g) Perspective view of whole site

The site: