Total No. of Printed Pages:1

SUBJECT CODE NO:- H-610
FACULTY OF ENGINEERING 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, from remaining. Solve any five questions.

Q.1	a)	What are Masonry ? Write the types of Masonry with different types of bonds.	10
	b)	Which are the principles for reliable form of Constructions in earthquake resistance.	10
	c)	State the loads acting on a roof trees.	05
Q.2	a)	State the factors to be considered for selection of type of truss.	08
	b)	Explain the types of connection for steel roof truss.	07
Q.3	a)	What are the advantages & disadvantages of Masonry structures.	08
	b)	Write in brief about types of Masonry units.	07
Q.4	a)	Define earthquake resistant Structure & State Principles for Reliable form of Construction.	08
	b)	Write the Simple Principles to be followed for earthquake Resistant buildings.	07
Q.5	a)	Explain Importance of Architectural features & Structural shapes.	08
	b)	State factors governing the fixing up of structural elements for a given plan.	07
Q.6	a)	What are Retaining walls? What are the functions of Retaining wall.	08
	b)	Explain Design of Retaining Wall.	07
Q.7		Write Short Notes on (any three)	15
	a)	Reinforced Masonry	
	b)	Design consideration in Masonry structures.	
	c)	Type of connections in steel	
	d)	Is code Recommendations for Earthquake Resistant Structures.	

Total No. of Printed Pages:1

SUBJECT CODE NO: H-617
FACULTY OF ENGINEERING 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 <u>any five</u> questions
      ii)   All questions carry equal marks
      iii) Draw sketches whenever necessary

Q.1 Write short notes <u>on any four</u>   20
    a) Multiple Nuclei Theory
    b) Transportation plan
    c) Garden city concept
    d) Geddian trio
    e) Satellite Town

Q.2 Explain in brief three tier system of planning in India. Also elaborate on role of different planning   20
    agencies

Q.3 Explain in detail the neighborhood concept and also describe various theories of N. hood planning   20

Q.4 Write an essay on "linear city" concept by Soria Mata   20

Q.5 Explain the concept of balanced development through Regional planning in Indian context   20

Q.6 Explain the reasons, problems and remedial measures through planning for dealing with "Slums" in   20
    metropolitan cities.

Q.7 Explain with suitable examples <u>any Two</u> of the following   20
    a) Types of regions
    b) Application of central place theory
    c) Central Business district (CBD)

Total No. of Printed Pages:1

SUBJECT CODE NO: H-623
FACULTY OF ENGINEERING 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	Explain Air Conditioning and important aspects of air conditioning.	20
Q.2	Give a brief classification of various Air conditioning Systems.	15
Q.3	Explain with sketches Air flow and air distribution in AC.	15
Q.4	Write Short Notes on (any Two)	15

  a. Air changes
  b. Air movement
  c. Vertical AC system

Section B

Q.5	Describe planning of an Auditorium considering fire safety.	20
Q.6	Write Short Notes on (any Two)	15

  a. Fire staircase
  b. Fire alarm system
  c. Portable extinguishers

Q.7	Explain Fire staircase and considerations provided for it in NBC.	15
Q.8	Discuss	15

  a. Various causes and effects of fire
  b. General guidelines for egress design of an auditorium

1

623

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-629
FACULTY OF ENGINEERING 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   A multipurpose hall (size $30m \times 12m \times 5.0m$ has a opening of size 2.4m wide and 3.0 m in height. Client wants to provide a rolling shutter at the opening of multipurpose hall. Design a Rolling shutter with all joinery details and appropriate use of steel sections / members.
1. Draw key plan, elevation and section of multipurpose hall with rolling shutter.   10
2. Detail plan, elevation and detail cross section of Rolling shutter.   13
3. Joinery details of shutter, fixing details of shutter to the wall, top drum details, locking   12
   arrangement at bottom horizontal members used in shutter.

Q.2   Design a steel tubular roof truss for a factory shed having internal size as 8m × 30m with A.C sheet roofing material. Truss is supported on RCC columns having size 300×380 mm with 230mm brick wall. The height from finished plinth to bottom of the beam is 6.5 m. plinth is 1.0m.
Drawing requirements:-
1. Key-plan, elevation and section.   07
2. Detail plan and detail cross-section of truss.   11
3. Joinery details at ridge, A.C. sheet and truss, column and truss.   12
4. Connection details between the members.   05

Q.3   Draw neat and proportionate sketches of the following. Mention suitable data and measurements   35
      wherever required.
1. North light truss
2. Collapsible gate
3. Space frame
4. Steel staircase
5. Still girders (I-section) footing

1

Section B

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

Q.5   Write short note on:-   10
1. Asphalt
2. Plastic as a building material.

Q.6   Define forms and use of Bitumen.   10

Q.7   Write a note on Gypsum with their properties, types and uses in different parts of building construction.   10

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-634
FACULTY OF ENGINEERING 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.1 & 5 are compulsory out of remaining solve any four.
                        ii) Assume suitable data wherever necessary.

Q.1   a) Explain purlins and role of purlins with neat sketch.   08
        b) A steel column 12m long carries axial load of 1000 KN. The column is hingd at both ends.   16
            Design two channels placed back to back. Take fy=250 N/mm^2

Q.2   Determine the rivet value of a roof truss consists of two angle $80 \times 50 \times 6 \, mm$ size placed back to   13
        back on both sides of 8mm thick gusset plate it carries a direct load 71 KN.
        (Take $\tau_f = 90 Mpa, \sigma_f = 270 Mpa$)

Q.3   Design a slab base for column section ISHB250 if it carries an axial load of 600KN. The allowable   13
        bearing pressure on concrete is 4N/mm^2 & allowable bending stress in slab base is 185 N/mm^2.

Q.4   a) Explain lacing & types of lacing with sketch.   08
        b) Explain plate girders in detail.   05

Q.5   Short notes on (any four)   24
            1. Types of raft foundation
            2. Types of failures in revitted joint
            3. Explain Grillage foundation
            4. Axially loaded steel column's
            5. Types of loads on steel structures.

Q.6   A beam of span 5m effectively carrying a uniform load of 20KN/m. if compression flange is   13
        laterally supported
        Assume fy=250 N/mm^2, live load=20$\times 10^3$ N/M
        Dead load =600 N/m

Q.7   A column consisting of Sc140 @ 33.3 kg/m has an unsupported length of 4m. it is effectively held   13
        in position. And restrained against rotation but not held in position. Determine axial load column
        can carry.

                        $(a = 4.24 \times 10^3 mm, r_x = 58.9 mm, r_y = 32.1 mm)$

1

Total No. of Printed Pages:03

SUBJECT CODE NO:- H-644
FACULTY OF ENGINEERING 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.
   Out of the remaining 3 questions from section A solve any TWO and solve any TWO questions from section B.
2. Assume suitable data wherever necessary and mention it clearly.
3. Figures to the right indicate full marks.

SECTION A

Q.1   Find out the cost of any <u>four</u> items from the table given below by long wall and short wall method.   44
The quantities worked out must be supported by detailed measurements in a neat tabular form.
Quantities without detailed measurements will not carry any marks. Mention correct unit of
measurement as per D.S.R.

Sr.no.	Description	Quantity	Rate	Unit	Amt.
1.	Providing M.20 R.C.C columns in foundation & plinth and superstructure		6,500/-		
2.	Providing M.20 R.C.C. plinth beams		6,900/-		
3.	Providing M.20 R.C.C. slab &chajja		6,700/-		
4.	Providing total reinforcement		65,000/-		
5.	Providing R.C.C. door frames		350/-		
6.	Providing 230 mm bk. Wall in superstructure		7,000/-		
7.	Providing water proofing treatment for terrace		600/-		

1

644
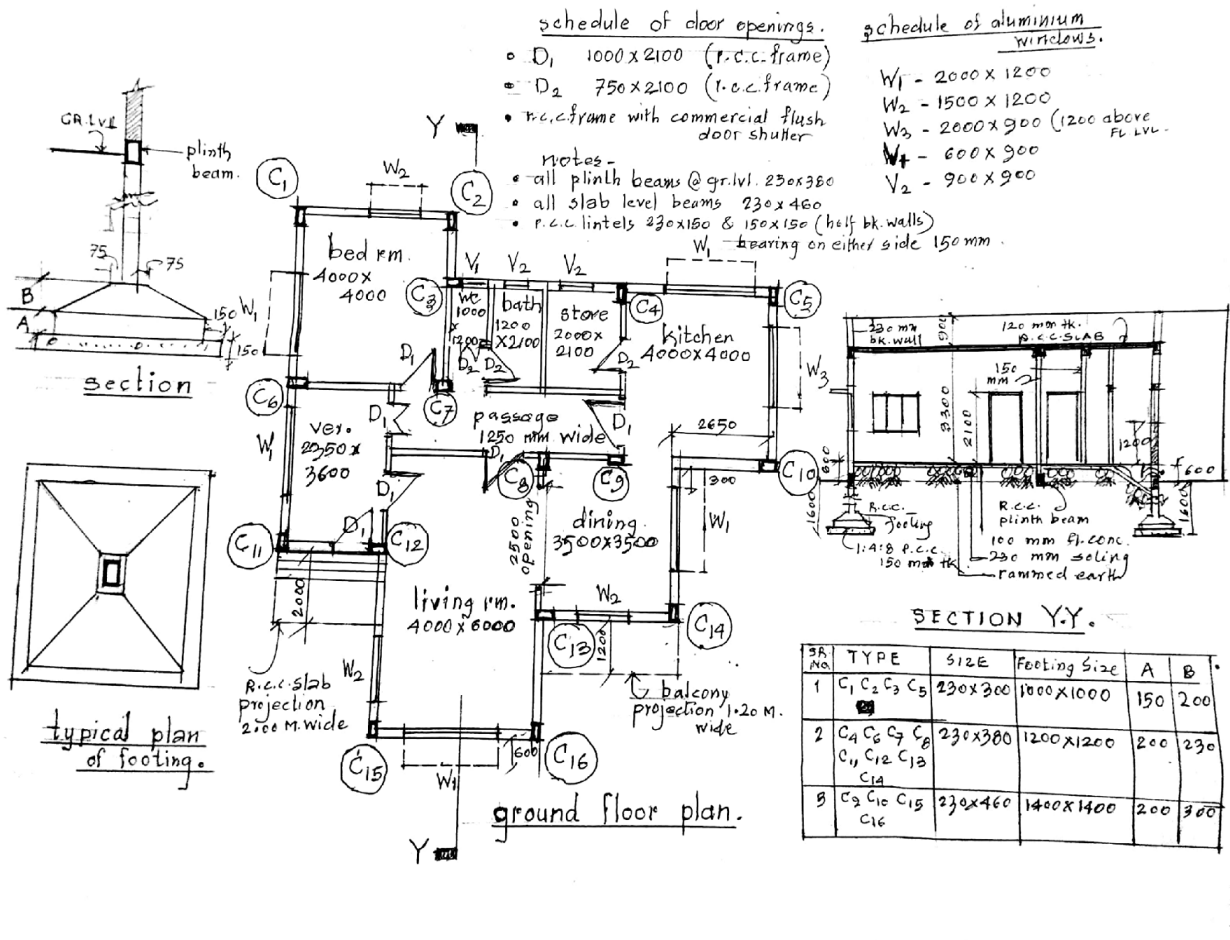
Q.2   a.   Workout the rate of M.20 R.C.C. columns by rate analysis with the following data.   05
   a)   Rate of cement = Rs.6,900/M.T.
   b)   Rate of sand = Rs.10,000/Truck
   c)   Rate of aggregates = Rs.3500/Truck
   d)   Labour rate = Rs.1100/m^3
   e)   Payload factor for sand & aggregates = 5.75 m^3

   b.   After working out the above rate, find the cost of 32.00 m^3 of R.C.C columns including the   08
   cost of reinforcement if the rate of reinforcement is Rs.61,000/M.Ton

Q.3   The rate of R.C.C. slab and loading's (M.20 grade) in D.S.R. is Rs.7000/m^3. Sand & aggregates are   13
   brought from outside beyond 5.00 Kms. Find out the rate of M.20 R.C.C. slab of the leads charges
   for sand and aggregates are
   i)   Sand-lead charges for 200 kms = Rs.2070/Truck
   ii)   Aggregates 125 kms = Rs.1325/Truck
   iii)   Payload factor for sand & aggregates = 5.75 m^3

2

Q.4 Write short notes on any three
   a) Spot items   05
   b) Work charged establishment   04
   c) Day work   04
   d) Circulation areas   04

SECTION B

Q.5 Write detailed specifications for Indian Patent stone flooring.   15

Q.6 Write detailed specifications for providing and fixing 1st class colored glazed earthenware "Orissa   15
     type" W.C. pan $580mm \times 440mm$ size including all fittings.

Q.7 Write detailed specifications for providing and constructing brick masonry 1:6 cem. Mortar for   15
     intercepting trap chamber $90cms \times 45cms$ including all fittings.

Total No. of Printed Pages:1

SUBJECT CODE NO: H-639
FACULTY OF ENGINEERING 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 <u>number 1 and 2 are compulsory</u>
      ii)   Solve <u>any six</u> questions <u>from the remaining</u>
      iii)   Draw neat sketches whenever necessary

Q.1   Discuss the analogy used by Le Corbusier in the design of city of Chandigarh with sketches   20

Q.2   Describe the effects of industrial revolution on construction technology and design. Discuss two of the   20
landmark structures that were part of the industrial exhibitions of the 19th century in Europe

Q.3   Discuss the origins, objectives and impact of Bauhaus school of architecture   10

Q.4   Explain the contribution of any one of the following architects to modern   10
Architecture in India:
Laurie Baker <u>OR</u> B.V. Doshi

Q.5   Discuss the following movements with one example of each   10
      a. Arts and Crafts
      b. Art Nouveau

Q.6   Discuss the works of F.L. Wright with examples and sketches (any two)   10

Q.7   Describe with examples the architectural Scenario during Pre-Independent India   10

Q.8   Louis Kahn is a master craftsman of spaces and volumes. Explain giving appropriate examples   10

Q.9   What were Adolf Loss arguments against ornamentation? Discuss the essential aspects of modern   10
architecture.

Q.10 Explain the 'open to sky spaces' concept of Charles Correa with illustrations.   10

1

Total No. of Printed Pages:3

SUBJECT CODE NO:- H-655
FACULTY OF ENGINEERING AND TECHNOLOGY
T. Y. Arch.
A.D. V
(REVISED)

[Time:18 Hours for 3 Days]   [Max.Marks: 100]
[1st day:6 Hrs. Enlodge]
[2nd day: (3+3) Hrs.]
[3rd day: (3+3) Hrs.]

Please check whether you have got the right question paper.

Note: 1) 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.
2) The candidates are further instructed to submit schematic plans of their design (sketch plans, site plan, Section etc.) at the end of first day. No major deviation will be allowed in the final submission from the first day sketch. 1St day sketch should be written in bold letters.
3) The candidates are further instructed to submit the final design in the form of a portfolio binding all the drawing including sketches, tracings and covering the portfolio with white sheets on both sides. The candidate shall write their examination number on the top right hand corner of the cover sheet.
4) All the drawings in the portfolio shall carry the examination number of the candidate and are signed by the invigilator.
5) The design will be assessed as a whole.
6) Assume suitable data wherever possible and mention it clearly.

Q.1   **"COLLEGE OF NURSING"**   100

A Private Educational Trust in Aurangabad wants to establish 'College of Nursing' in their Existing educational campus. Trust is having medical & Dental college with Hospital in the same campus. As the Nursing Course is related to medical course so the student of Nursing can share some medical facility like medical Hospital, clinical labs etc.

In college of Nursing it is having B.Sc course of four years with 40 as a intake capacity for first year. College can share some common facility like sport facility, playground & staff Housing for their institute. Trust wants to design separate building for college of Nursing with the below given facilities.

REQUREMENTS:

A) **ADMINISTRATION:**
   i.   Entrance foyer, Reception waiting – 150 sq.m
   ii.   Principals cabin with att. Toilet – 30 sq.m
   iii.   Vice Principals cabin with Att. Toilet – 25 sq.m
   iv.   Office – 25 sq.m
   v.   Record Room – 15 sq.m

1

655

> vi. Store Room – 20 sq.m

B) **ACADEMICAL AREA:**
   i. Lecture Hall 4 Nos – 100 sq.m each
   ii. Audio Visual Aids Room – 60 sq.m
   iii. Staff Room Ladies & Gents 2 Nos – 60 sq.m each
   iv. Common Room for Teaching staff, Office staff and Students 3Nos with att. Toilet – 30 sq.m each

C) **DEPARMENTS/LABORATORIES**:
   i. Nursing foundations and medical surgical – 150 sq.m
       H.O.D. Cabin – 15 sq.m
   ii. Community Health Nursing Dept/Lab – 90 sq.m
       H.O.D. Cabin – 15 sq.m
   iii. Nutrition Dept. – 90 sq.m
       H.O.D. Cabin – 15 sq.m
   iv. OBG and Paediatrics Dept/Lab – 90 sq.m
       H.O.D. Cabin – 15 sq.m
   v. Pre-clinical science Dept/Lab – 90 sq.m
       H.O.D. Cabin – 15 sq.m
   vi. Computer Lab – 150 sq.m
       H.O.D. Cabin – 15 sq.m

D) **OTHER FACILITIES**:
   i. Library – 240 sq.m
   ii. Multipurpose Hall with stage Green Room & Toilet – 350 sq.m
   iii. Students Welfare Hall – 40 sq.m
   iv. Indoor Game Hall – 100sq.m
   v. Ladies & Gents staff Toilets – adequate area.
   vi. Toilets for students(Boys & Girls Separately) – Adequate area.
   vii. Parking facility Bus – 1 Nos.
       Four Wheeler – 12 Nos.
       Two Wheeler – 25 Nos.

E) **ACCOMODATION**:
   i. Boys Hostel 3 Seater Room with Att. Toilet – 08 Nos.
   ii. Girls Hostel with Att. Toilet 3 seater Room – 15 Nos.
   iii. Canteen with Dining Hall(150 sq.m) kitchen (50 sq.m) with Toilet (15 sq.m) (Total Area 200-250 sq.m.)
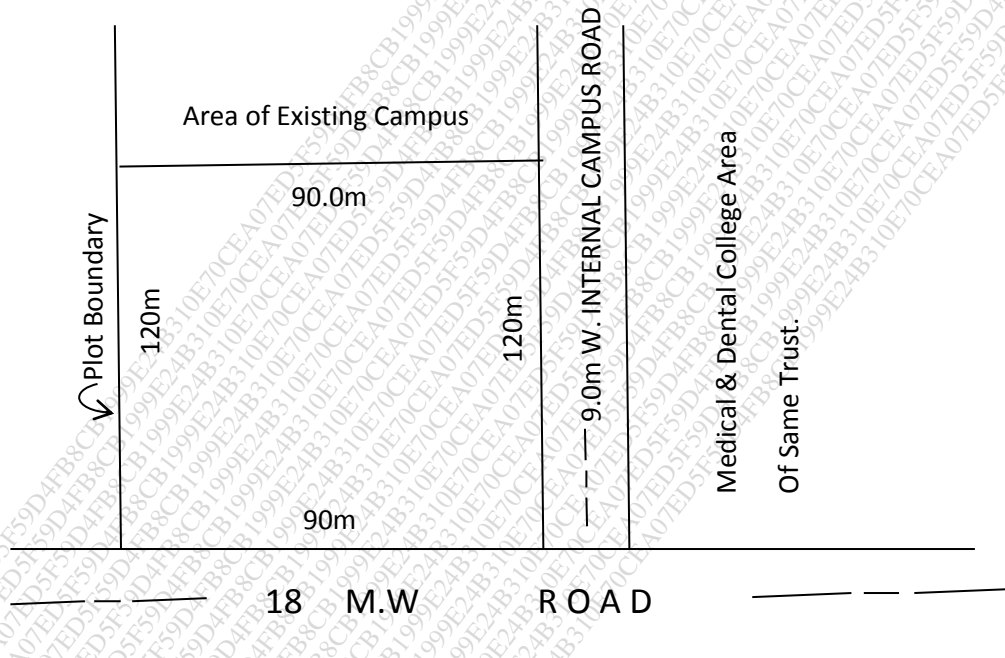
DRAWING REQUIREMENTS:
Note: Assume suitable scale for all Drawing.
   i. Site plan.
   ii. All floor plans.
   iii. Elevations (min. 2 Nos) for Each Building Block.
   iv. Sections (min. 2 Nos)
   v. Detailed furniture Layout of Hostel Room, Lecture Hall, Library & Laboratory (Single Unit Only)
   vi. Three Dimensional sketch view.
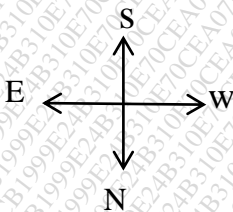
2

NOTE:

    i)   Minimum Side & Front margin from all sides 6m each.

SITE LOCATION MAP

Area of Existing Campus

90.0m

Plot Boundary

120m

120m

9.0m W. INTERNAL CAMPUS ROAD

Medical & Dental College Area

Of Same Trust.

90m

18   M.W   R O A D

SITE PLAN.

S

E ←   → W

N

3

Total No. of Printed Pages:3

SUBJECT CODE NO:- H-655
FACULTY OF ENGINEERING AND TECHNOLOGY
T. Y. Arch.
A.D. V
(REVISED)

Time:[1ˢᵗ day – 6 Hrs.Enlodge   [Max.Marks:100]
       2ⁿᵈ day – (3+3) Hrs.
       3ʳᵈ day – (3+3) Hrs.
       Total 18 Hrs.]

Please check whether you have got the right question paper.

Note:-
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 further instructed to submit schematic plans of their design (sketch plans, site plan, sections etc.) at the end of first day. No major deviation will be allowed in the final submission from the first day sketch. First day sketch should be written bold letters.
iii) The candidates are further instructed to submit the final design in the form of a portfolio binding all the drawings including sketches, tracing and first day sketches together and covering the portfolio with white sheets on both sides- the candidate shall write their examination number on the top right hand corner of the cover sheet.
iv) All the drawings in the portfolio shall carry the examination number of the candidate and are signed by the invigilator.
v)   The design will be accessed as a whole.
vi) Assume suitable data wherever possible and mention it clearly.

'HIGHWAY RESORT'

Aurangabad city is having great historical, cultural & social significance. It is also regional capital, fastest growing industrial city, educational hub with very good health services which results into tremendous growth of it.
A hotel group wishes to develop 'highway Resort' near Ellora on Solapur - Dhule highway. It will cater the services to international, national and domestic tourist. Also the people from Aurangabad city can go on holidays with family & friend to have relaxation of mind and body.
The group wishes to serve the people with variety of dishes like South Indian, North Indian, Chinese, continental along with soft drinks, tea, coffee etc. and to provide the variety of recreational facilities. The people coming to the Ellora and Daulatabad from various parts of India and abroad can enjoy the resort.
Space creation with Indoor and outdoor spaces with landscape areas will be the major element to attract the customers.

The planning requirement are as follows:
   A. ADMINISTRATION:

      i)   Reception and waiting- 100-120sq.m.
      ii)   General Manager's cabin with Att.-toilet -   20-22sq.m.
      iii) Administrative office - 25sq.m
      iv)   Maintenance Dept. - 20sq.m.

1

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    v)   Account office – 15sq.m.
    vi)   Gents & ladies toilet – adequate area.

B. RESIDENTIAL ACCOMMODATION:

    i)   Special rooms with attached toilet (20 NOS)– 25sq.m each

    ii)   Suits/deluxe rooms (living + bed + pantry + Att. Toilet) (10 NOS) -45sq.m. each

C. FOOD AND BEVERAGE:

    i)   Restaurant
          a) Indoor sitting 50 persons – 200sq.m.
          b) Outdoor sitting 25 persons – 150sq.m.
    ii)   Coffee shop and snacks center – 120sq.m.
    iii)   Main kitchen (veg-non veg) – 75-100sq.m.
    iv)   Kit. Store, pantry utility area – 30sq.m.
    v)   Staff changing room with toilet for both the sexes – 25.30sq.m.
    vi)   Staff Dining area – 15-20sq.m.
    vii)   Fuel & beverage store – 15-20sq.m.

D. RECEPTION:

    i)   Party lawn (400 persons) - 450sq.m.
    ii)   Conference hall with pantry and toilet – 50-70sq.m.
    iii)   A small swimming pool /with Deck – 200sq.m.
    iv)   Sports/Game center – 100sq.m.

E. SERVICES:

    i)   Security office – 10-12 sq.m.
    ii)   Maintenance office – 12-15sq.m.
    iii)   Electrical, generator and pump room – 30-40sq.m.
    iv)   Laundry – 15-20sq.m.
    v)   House-keeping – 15-20sq.m.
    vi)   Linen store – 12 - 15sq.m.
    vii)   A.C plant room – 20-30sq.m.

F. PARKING:

    i)   Buses – 5 Nos.
    ii)   Cars – 25 Nos.
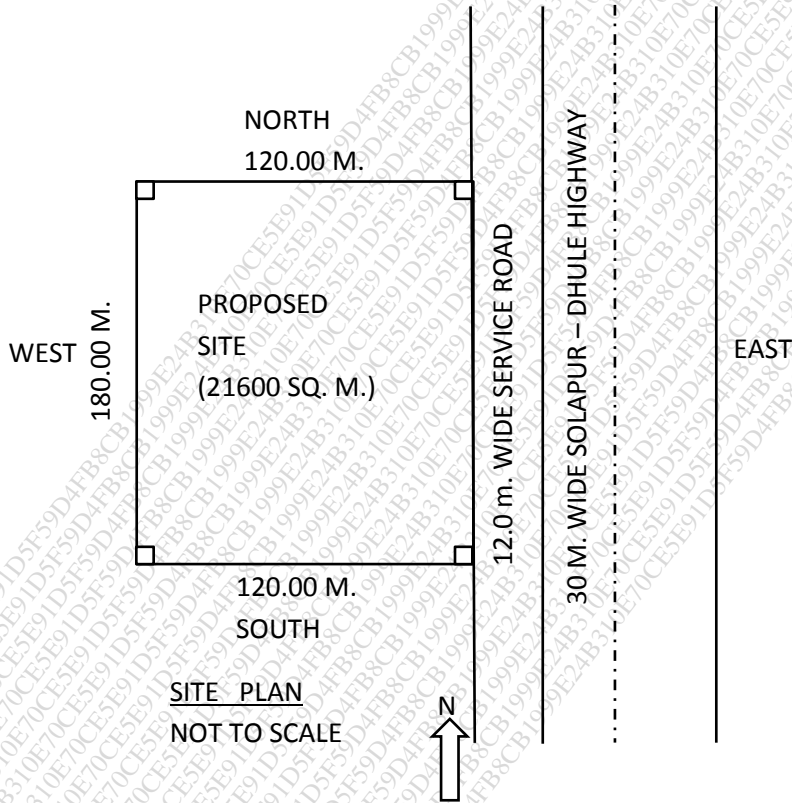   iii)   Two-wheeler – 50 Nos.

DRAWING REQUREMENTS:

Note:-
 Assume suitable scale for all drawings.
1) Site plan
2) All floor plans
3) Elevations (minimum two)
4) Sections (minimum two)
5) Detailed plan of special room & deluxe room with internal furniture layout.
6) Three dimensional sketch view.

NOTE:-

Minimum margins from all sides should 6m.

SITE PLAN

NORTH
120.00 M.

WEST   180.00 M.   PROPOSED
SITE
(21600 SQ. M.)

12.0 m. WIDE SERVICE ROAD

30 M. WIDE SOLAPUR – DHULE HIGHWAY

EAST

120.00 M.
SOUTH

SITE   PLAN
NOT TO SCALE

N

Total No. of Printed Pages:02

SUBJECT CODE NO: H-648
FACULTY OF ENGINEERING 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.6 are compulsory.
2) Solve any three questions from section A & B each, excluding compulsory questions.
3) Assume suitable data if necessary.
4) Figure should indicate the full marks

Section A

Q.1	Attempt any seven	14
	a) Explain ohm's law.	
	b) Explain Faraday's law.	
	c) Explain kirchoff's laws.	
	d) List the types of electrical wiring.	
	e) Define utilization factor.	
	f) Define solid angle.	
	g) Define luminous flux.	
	h) Define brightness & glare.	
	i) Give applications of Earthing	
Q.2	a) Explain with neat sketch Incandescent lamp.	06
	b) Explain with neat sketch fluorescent lamp.	06
Q.3	a) Explain types of lighting schemes can be incorporated in any construction.	06
	b) State & explain energy conservation tips.	06
Q.4	a) Explain different laws of Illumination.	06
	b) Explain electrical wiring systems in domestic & commercial buildings.	06
Q.5	a) Explain pipe earthing with neat sketch.	06
	b) Explain plate earthing with neat sketch.	06

Section B

Q.6	Attempt any seven	14
	a) Define space height ratio	
	b) Define depreciation factor.	
	c) State the different types of elevators	
	d) List the artificial sources of light.	
	e) List merits and demerits of Tungsten Halogen lamp	
	f) List different types of switches depending on their usage.	
	g) What is preventive maintenance	
	h) Define Lumen	
	i) What is Lux meter	

Q.7   a) Differentiate between direct lighting, semi direct lighting & indirect lighting.   06
       b) Write a short note on Lux meter.   06

Q.8   a) Explain in detail comparison between different light sources.   06
       b) Explain in detail design considerations of a good lighting schemes   06

Q.9   a) Explain in detail with values, Illumination level required for different places in interior lighting scheme.   06
       b) Explain Halogen lamp with diagram.   06

Q.10   a) Explain with diagrams escalators.   06
        b) Write a note on NBC.   06

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-603
FACULTY OF ENGINEERING 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 two questions from Section B.
2) Answers of 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.
4) Figures to the right indicate full marks.

Section A

Q.1 A Balcony is to be provided for theatre building. If required student can design it partly overlapping on lower seating and party on foyer area. The size of lower seating area is $22.5m \times 17.5m$. The size of balcony is $11.0m \times 17.5m$. 35
Draw the following:-
   a) Key plan showing lower and upper seating entrance foyer, stair, toilet and other related provisions.
   b) Longitudinal section through balcony showing racker beam and sight lines.
   c) Reinforcement details in racker beam.
   d) Layout plan for beam & slab.

Q.2 A bank hall admeasuring $10m \times 15m$ is to be provided with false ceiling. Provide the suitable material & design. Draw the following. 35
   a) Reflected plan of ceiling.
   b) Lighting fixing arrangements.
   c) Fixing details at wall & slab.
   d) Important joining details any two.

Q.3 Draw neat sketches on drawing sheet. (Any Five) 35
   a) Aluminum sliding window.
   b) Curtain wall
   c) Water purification system for swimming pool.
   d) R.C.C wall & scum gutter for swimming pool.
   e) Teak wood partitions
   f) Aluminum partitions.

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Section B

Q.4   Explain aluminum extrusion process and various terms of its product.   15

Q.5   Explain along with sketches retaining wall.   15

Q.6   Explain along with sketches cavity wall and its advantages & disadvantages.   15