SLR-V – 1

Seat No.	

B. Architecture (Semester – I) (New) Examination, 2014
THEORY OF STRUCTURE – I

Day and Date : Monday, 1-12-2014 Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Q. **1** and Q. **2** are **compulsory**.*
*2) Solve **any 3** questions from **remaining**.*

1. Select correct option for the following : **7**

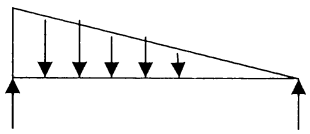
1) 1 GN force is equal to _____
   a) 10^6 b) 10^4
   c) 10^9 d) 10^3

2) Lamis theorem can be applied when number of forces acting on body are _____
   a) more than two b) more than three
   c) three only d) any number of forces

3) In case of framed structure the wall are designed for _____
   a) Fire resistance b) Strength
   c) Stability d) Partition

4) One unit Newton force develops _____
   a) Unit momentum b) Unit velocity
   c) Unit acceleration d) Unit mass

5) Following which type of beam is _____



   a) Simple supported beam b) Fixed beam
   c) U.D.L. d) U.V.L.

P.T.O.

6) The equation used to evaluate type of truss is _____

a) $m = 2j + 3$ b) $m + 3 = 2j$

c) $m - 2j = 3$ d) $m = 2j - 3$

7) The force acting along the same line of action are known as _____

a) concurrent forces

b) parallel forces

c) non-concurrent forces

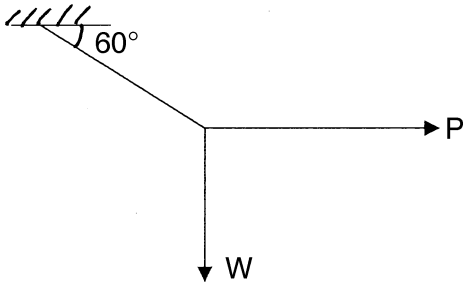
d) collinear forces

2. A) Write a note on component of structure. **5**

B) Five forces of 200 KN are acting a point of regular hexagon towards all other points of regular hexagon calculate its resultant. **8**

C) State and explain Lami's theorem in detail. **5**

3. A) A horizontal force P as shown in Fig. keeps weight of 80 N in equilibrium find the magnitude of P and tension in string. **8**

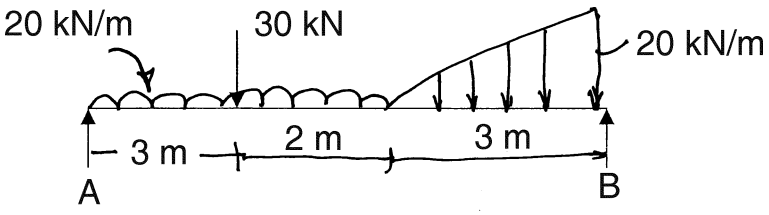


B) A pull of 10 KN and push of 15 KN are acting at a point which makes an angle of 40° between them calculate resultant using law of parallelogram. **7**

4. A) Distinguish between load bearing structure and R.C.C. framed structure. **5**

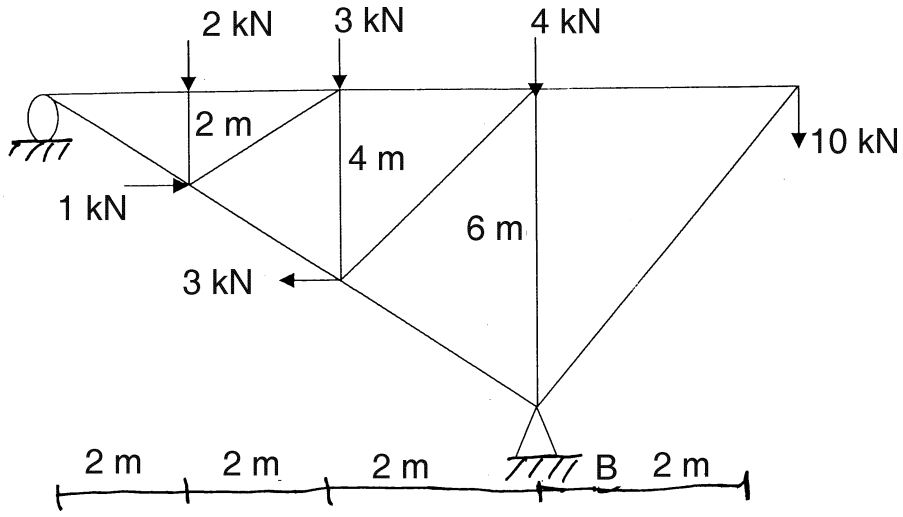
B) A pull of 10 KN and push of 15 KN are acting at a point which makes an angle of 40° between them calculate resultant using law of parallelogram. **10**

5. A) Calculate support reaction. **10**



B) Explain the type of supports and also type of beam in any framed structure. **5**

6. A) Evaluate reaction for the truss given below. **10**



B) Explain in detail perfect and imperfect truss. **5**

SLR-V – 10

Seat No.	

B.Arch. (Semester – II) Examination, 2014
ARCHITECTURAL GRAPHICS – II (Old)

Day and Date : Tuesday, 2-12-2014 Max. Marks : 100

Time : 10.00 a.m. to 1.00 p.m.

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

2) Retain ***all*** *construction lines.*

3) Figure to the ***right*** *indicates* ***full*** *marks.*

4) ***Five*** *marks reserved for neatness and good drafting.*

5) ***All*** *dimensions are in 'cm'.*

6) Make suitable assumptions ***wherever*** *necessary.*

1. A plane cuts the object as shown in Fig. A at PP^{1}. Draw plan and sectional elevation (front and side) of the cut object (Scale 1 :1). **35**

2. Draw development of the surface of cut portion of cone from Q. No. 1 Fig. A. **15**

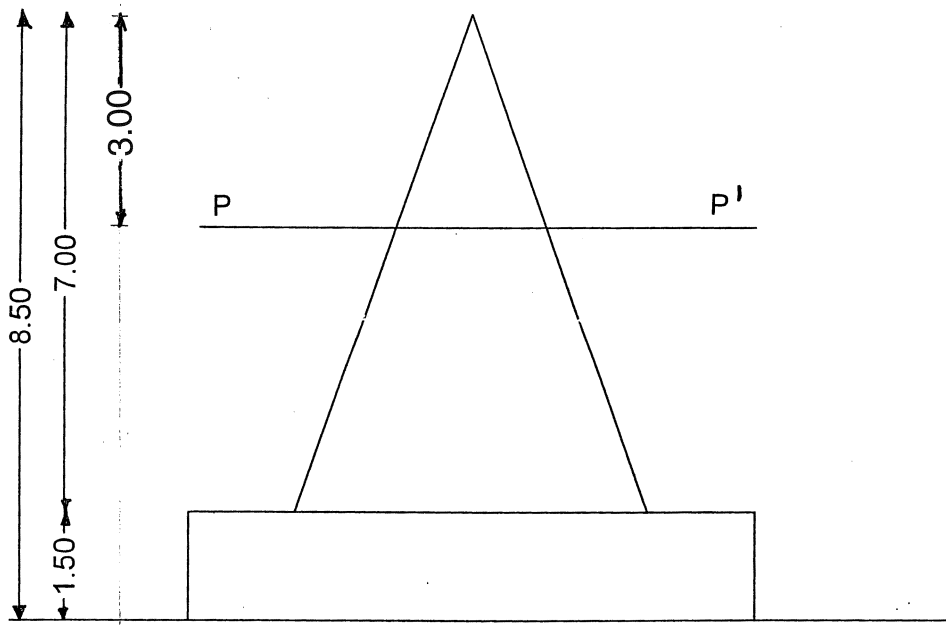
3. Draw the development of surface of the following objects in Fig. B (Scale 1 :1). **15**

4. Draw isometric view of the object shown in Fig. C (Scale 1 :1). **20**

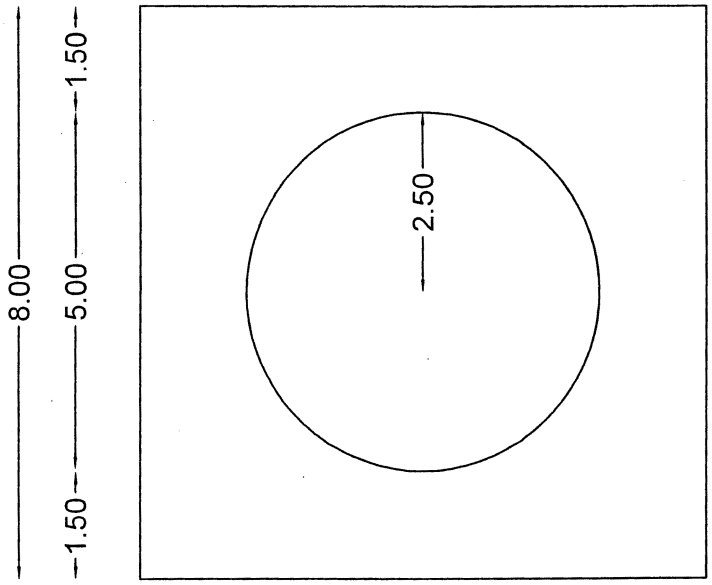
5. Mention the no. of surfaces of the following objects as shown in Fig. D. **10**

P.T.O.

FIGURE - A



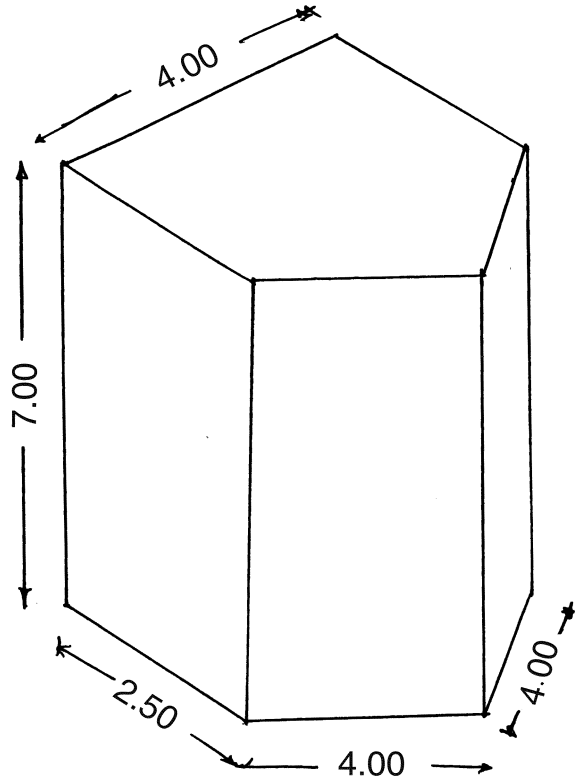
ELEVATION



PLAN

FIGURE - B

(1)



(2)

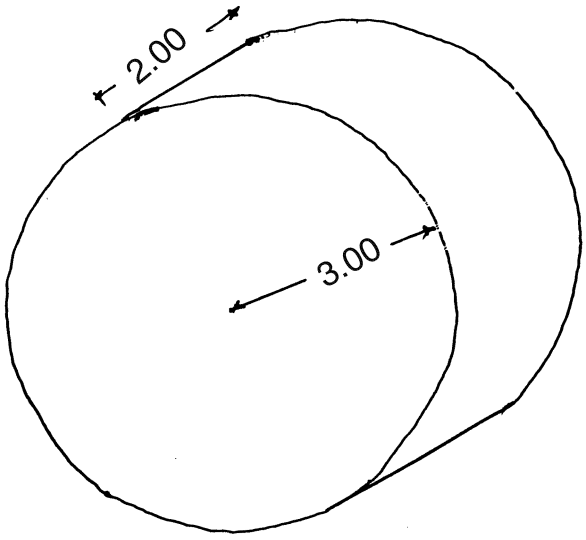
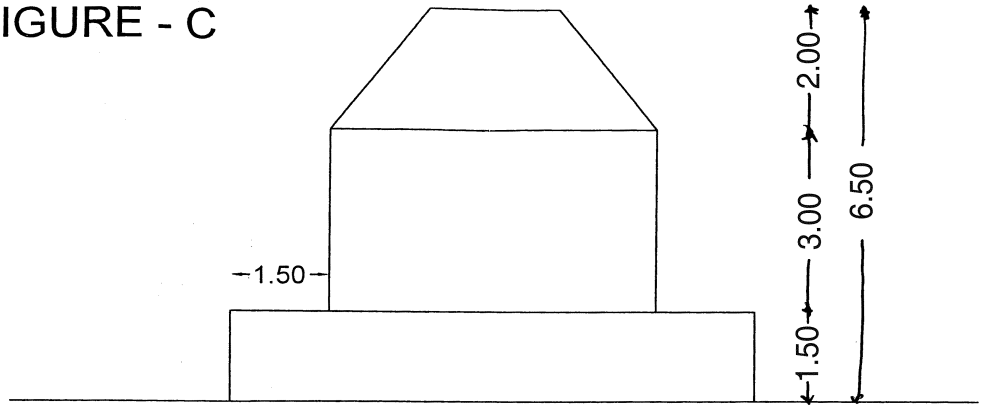
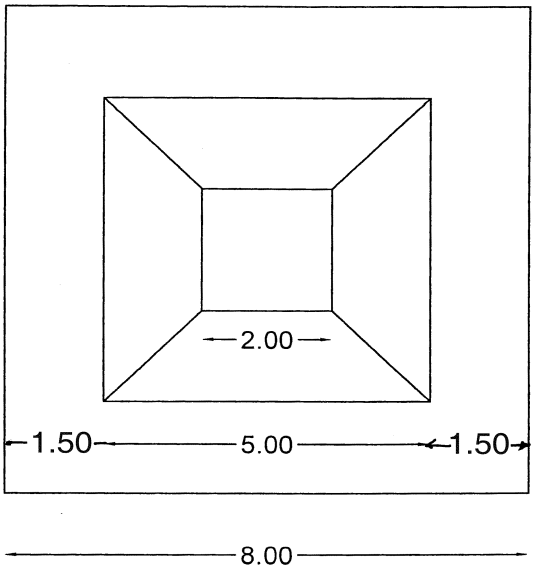


FIGURE - C

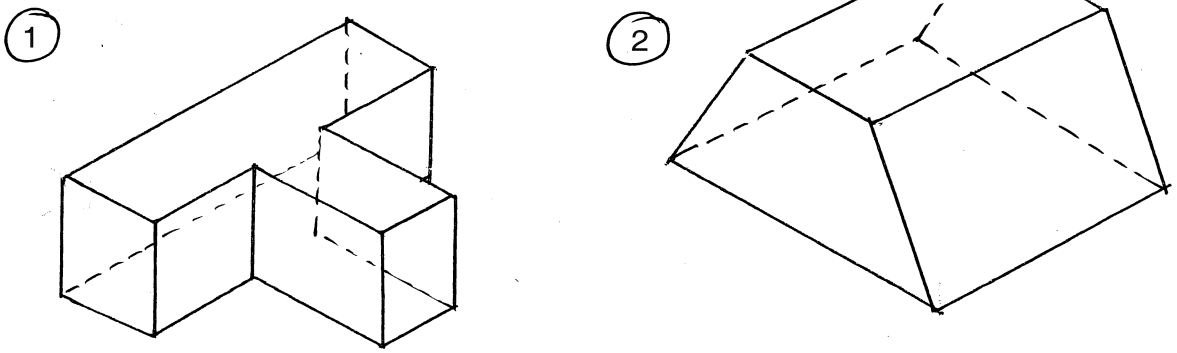


ELEVATION



PLAN

FIGURE - D



SLR-V – 11

Seat No.	

B.Arch. (Semester – II) Examination, 2014
BUILDING CONSTRUCTION AND MATERIAL – II (Old)

Day and Date : Thursday, 4-12-2014 Max. Marks : 50
Time : 10.00 a.m. to 1.00 p.m.

Instructions** : 1) Q. No. **1** and No. **2** are **compulsory.
*2) Solve **any 3** from remaining.*
*3) Make suitable assumptions **wherever** necessary and **appropriate** sketches.*

1. Fill in the blanks : **5**
   a) _____ is a vertical member employed to sub-divide a door/window opening vertically.
   b) A brick moulded with a rounded angle is termed as _____
   c) The angle formed at the intersection of 2 roof slopes is known as _____
   d) Heating of time to redness in contact with air is known as _____
   e) River sand is clear and _____ in colour.

2. Draw alternate plans, elevation and isometric view of 1 $\frac{1}{2}$ brick thick wall in Flemish bond. **15**

3. What are the uses of lime ? **10**

4. What is meant by bulking of sand ? Explain it. **10**

5. Explain clearly the difference between : **10**
   a) Mortise-tenon joint and bridle joint
   b) Plough grooving and cross grooving
   c) Carpentry and joinery
   d) Mortise-tenon joint and housed tenon joint.

6. Define the following terms : **10**
   1) Batten 2) Eaves 3) Hip 4) Rafter 5) Roof

SLR-V – 12

Seat No.	

B.Arch. (Semester – II) Examination, 2014
THEORY OF STRUCTURE – II (Old)

Day and Date : Saturday, 6-12-2014 Max. Marks : 100
Time : 10.00 a.m. to 1.00 p.m.

Instructions *: 1)* ***Use*** *of scientific calculator is* ***allowed****.*
2) Q. ***1*** *and Q.* ***5*** *are* ***compulsory****. From remaining solve* ***any two*** *question from* ***each*** *Section* ***I*** *and* ***II****.*
3) Figures to the ***right*** *indicates* ***full*** *marks.*

SECTION – I

1. Select correct option for the following : **10**

i) When a section is subjected to two equal and opposite pulls and the body tends to increase it length, the stress induced is called as _____ stress.

a) tensile b) shear
c) compressive d) none of above

ii) The ratio of the change in length to the original length is known as _____

a) stress b) strain
c) bulk modulus d) none of above

iii) The value of Poisson's ratio for steel varies from

a) 0.2 to 0.25 b) 0.35 to 0.40
c) 0.25 to 0.35 d) 0.40 to 0.55

iv) The moment of inertia of a circular section of diameter (d) is given by the relation

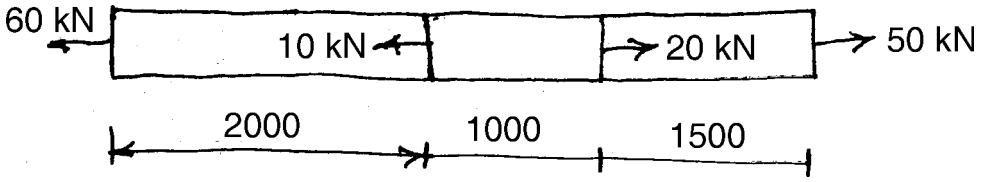
a) $\frac{\pi}{96}d^4$ b) $\frac{\pi}{16}d^4$ c) $\frac{\pi}{32}d^4$ d) $\frac{\pi}{64}d^4$

v) When shear force at a point is zero then bending moment at that point will be

a) maximum b) minimum
c) zero d) infinity

P.T.O.

2. A steel rod ABCD 4.5 m long and 25 mm ϕ is subjected to the forces as shown in figure. If the young modulus for steel is 200 GPa. Determine elongation or deformation and also find the stress at each section. **20**



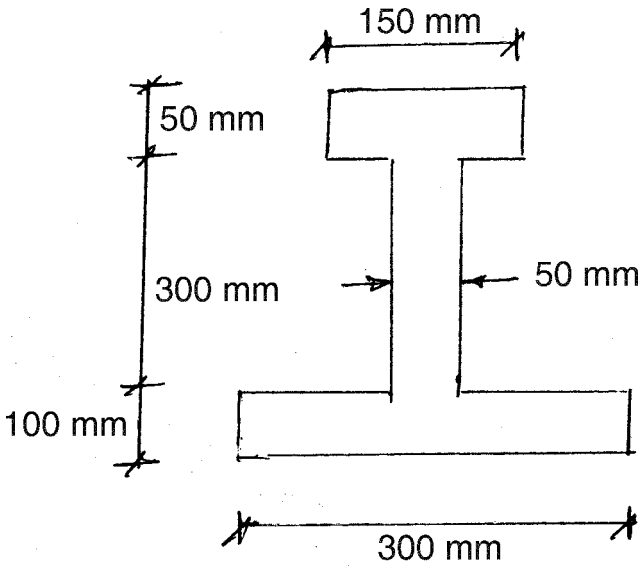
3. A steel cube block of 50 mm side is subjected to a force of 6 kN (tension), 8 kN (compression) and 4 kN (tension) along x, y and z direction respt. Determine the change in volume of the block. Take $\in$ = 200 GPa and m = 10/3. **20**

4. a) Explain in detail the modulus of rigidity. **10**

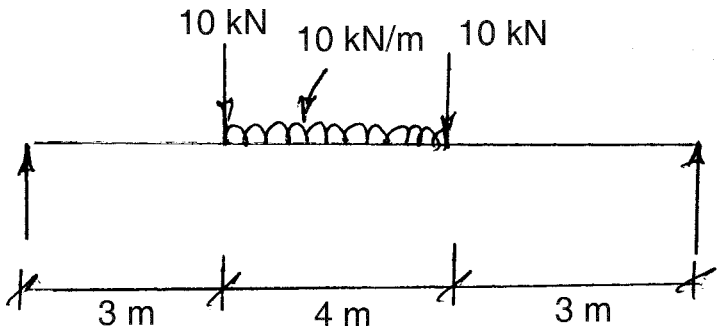
   b) Explain in detail Poisson's ratio. **10**

SECTION – II

5. Calculate the centroid of the following : **10**

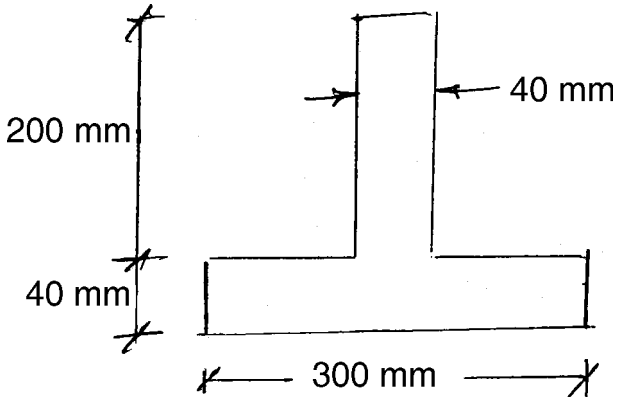


6. Draw SFD and BMD.



Also calculate maximum B.M. **20**

7. a) Calculate moment of inertia at horizontal and vertical axis passing through centroid. **16**



b) Explain parallel axis theorem. **4**

8. a) What do you understand by the term 'Point of contra flexure' ? Explain with diagram. **12**

b) What do you mean by modules of section ? Explain with examples. **8**

———————

SLR-V – 13

Seat No.	

B.Arch. (Semester – II) Examination, 2014
HISTORY OF ARCHITECTURE – II (Old)

Day and Date : Monday, 8-12-2014 Max. Marks : 100
Time : 10.00 a.m. to 1.00 p.m.

Instructions *: 1) Figures to the* ***right*** *indicate* ***full*** *marks.*
2) Draw ***neat*** *sketches* ***wherever*** *necessary.*

1. Fill in the blanks : **(1×10=10)**

   1) The chief compartment of the temple where the deity is placed is called _____

   2) The Romans devised the idea to transport water known as _____

   3) The crowning (top) feature of the column is known as _____

   4) The rathas of Mahabalipuram are excellent examples of _____ dynasty.

   5) The Buddhist period is the Indian subcontinent is parallel to the _____ period in Europe.

   6) The central dome of the Hagia Sophia is held up on _____

   7) The Ladkhan temple is an early example of _____ dynasty.

   8) The Roman baths were also known as _____

   9) Emperor _____ patronised Buddhism and its architecture in India.

   10) The _____ is the Greek space for common gatherings and discussions.

2. Answer the following : **(3×10=30)**

   1) Explain the Durga temple at Aihole with sketches and say why it is unique.

   2) The Romans were great engineers and builders. Explain in brief.

   3) Explain the Chaitya at Kali with sketches and the concept of the Chaitya.

   4) Explain any one 'Ratha' at Mahabalipuram with sketches.

3. Answer in detail **(any 3)** : **(3×15=45)**

   1) Explain the magnificent St. Peters at Rome with the help of sketches.

   2) Explain why the Acropolis at Athens is a great piece of world architecture with the help of sketches.

   3) Explain the great Stupa at Sanchi with the help of sketches.

   4) Explain the great Hagra Sophia and state its structural greatness.

4. Write short notes **(any 3)** : **(3×5=15)**

   1) Viharas

   2) Triumphal Arch

   3) Doric Column

   4) Ashokan Pillar.

SLR- V – 14

Seat No.	

B.Arch. (Semester – III) Examination, 2014
ARCHITECTURAL GRAPHICS – III (New)

Day and Date : Monday, 1-12-2014 Max. Marks : 50
Time : 3.00 p.m. to 6.00 p.m.

N.B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Retain ***all*** *construction lines.*
3) Figures to the ***right*** *indicate* ***full*** *marks.*
4) ***Five*** *marks are reserved for neatness and* ***good*** *drafting* ***quality****.*
5) Make suitable assumptions ***wherever*** *required.*

1. Draw the perspective view of the object by observing following points/conditions (Figure – A) :

   a) A plane makes angle as shown in the figure.

   b) The picture plan touches the object at point 'X'.

   c) The station point is 150 MM away from 'x'.

   d) The eye level is 120 MM above around level. **25**

2. Draw shade and shadow of the object in (Figure B) in plan and elevation considering the source of light is in conventional direction on the vertical and horizontal planes of the object. **20**

P.T.O.

Fig. A

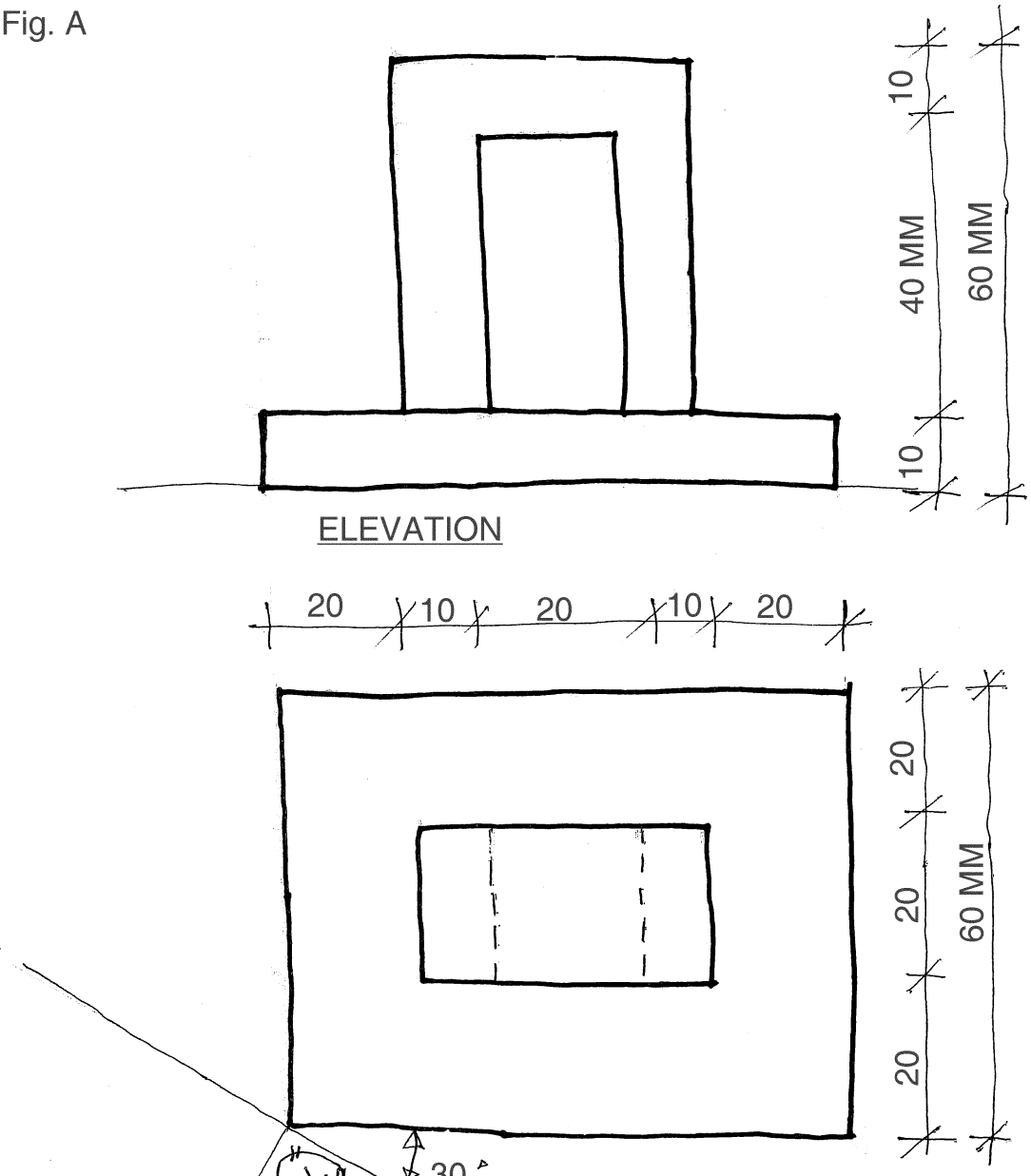
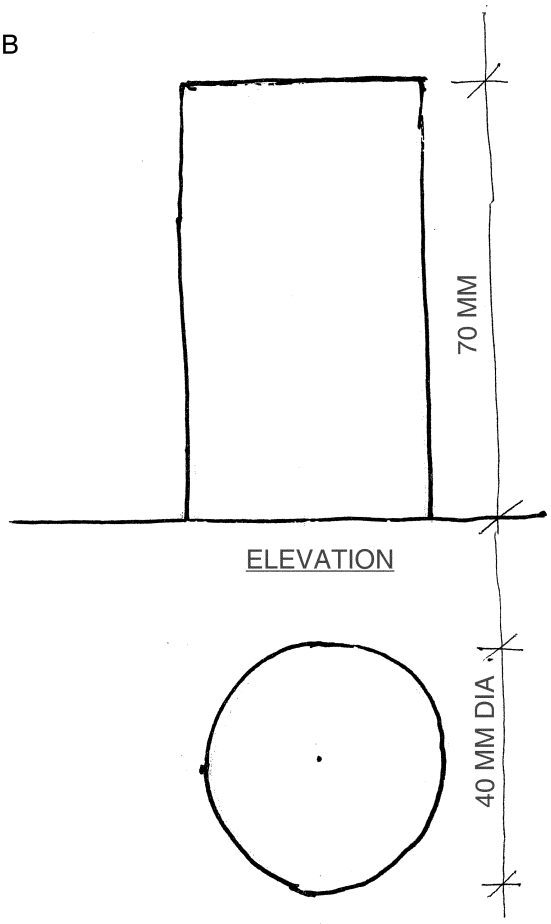
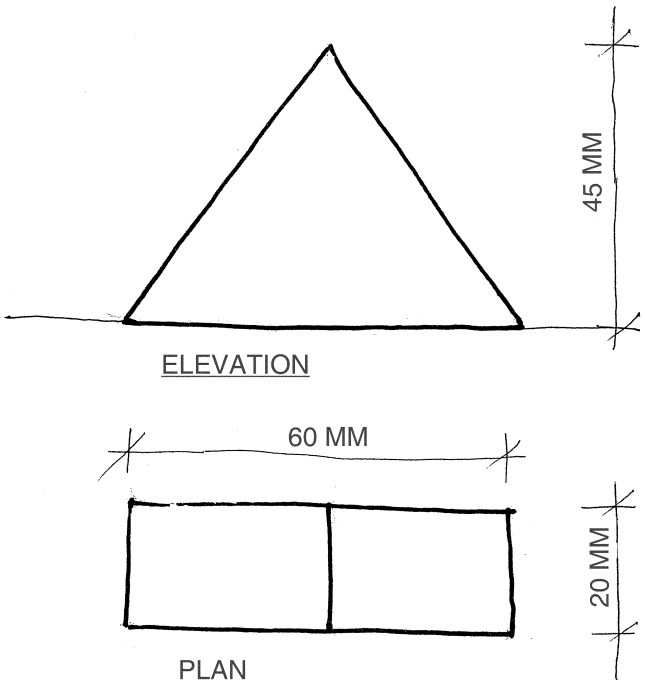

10
40 MM
60 MM
10
ELEVATION
20
10
20
10
20
20
20
20
60 MM
30
150 MM
PICTURE PLANE
PLAN
STATION POINT
EYE LEVEL 120 MM

Fig. B

1)



2)



SLR-V – 15

Seat No.	

B.Arch. (Semester – III) (New) Examination, 2014
BUILDING CONSTRUCTION AND MATERIAL – III

Day and Date : Wednesday, 3-12-2014 Max. Marks : 50
Time : 3.00 p.m. to 6.00 p.m.

1. "NAACH" is conducting a dance competition on a stage of size 6 m × 9 m. Design a stage with material of your choice. Draw plan, section and construction details to scale. **15**

2. Fill in the blanks : **5**
   1) Jamb is the _____ cross wall face of a door/window opening.
   2) Step is combination of _____ and _____
   3) Limesurkhi mortar, lime is _____ and surkhi is _____
   4) _____ hinges commonly used for door and windows.
   5) _____ are tapering steps used for changing direction of a stair.

3. Write short note on : **15**
   1) Different types of T.W. windows with sketches.
   2) Define Top rail, Lock rail, Bottom rail, Panels, Sash.
   3) Explain plywood and its uses.

4. Explain with neat sketch water proofing treatment for toilet block. **15**

   OR

5. Explain properties of lime mortar and its application.

_____

SLR-V – 16

Seat No.	

B.Arch. (Semester – III) Examination, 2014
THEORY OF STRUCTURE – III (New)

Day and Date : Friday, 5-12-2014 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

***Instructions** : 1) Q. **1** and Q. **5** are **compulsory**.*
*2) Solve **any 2** questions from remaining in Section **I** and **II**.*
*3) **Assume** suitable data **wherever** necessary.*

SECTION – I

1. Solve the following objectives : **8**

1) The form of curve to which then bends after loading is called as _____
   a) Plastic curve
   b) Flexural curve
   c) Bending curve
   d) Elastic curve

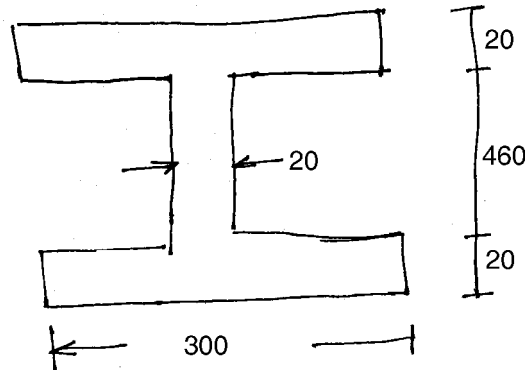
2) Section modulus of circular section is _____
   a) $\frac{\pi d^3}{32}$ b) $\frac{\pi d^3}{64}$
   c) $\frac{\pi d^4}{128}$ d) None of above

3) Stress is defined as _____
   a) $\frac{Load}{AREA}$ b) $\frac{Pressure}{AREA}$
   c) $\frac{Load}{Volume}$ d) N. A.

4)  This beam is called as _____ beam.
   a) Simple b) Fixed c) Continuous d) N. A.

P.T.O.

2. An I section shown in fig. carries a UDL of 15KN/m over span of 2.5 m of SSB. Find the maxm. bending stress induced in the section. **16**



3. A) Draw the nature of shear stress diagram for L, T and I section. **6**

   B) Explain concept of normal and tagential stresses with sketch. Also draw the relation between normal, tangential and resultant stress. **10**

4. At a certain point in a strained material the intensities of normal stresses on two planes at a right angles to each other are 20N/mm^2 and 10 N/mm^2 both tensile. They are accompanied by shear stress of 10N/mm^2. Find the principal planes and principal stresses. Find also maximum shear stress. **16**

SECTION – II

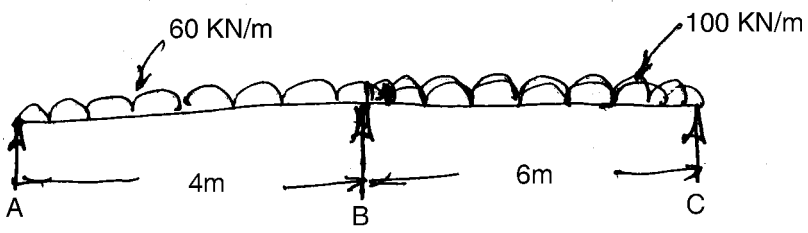
5. Explain concept of arches and their types. **8**

6. A simple supported beam of 5m span is having symmetrical I Section with flange 20 × 5mm and web of 15 × 5 mm if it carries UDL of 5KN/m. Calculate shear stress at connection of flange and web and also max^m shear stress. **16**

7. A) Explain the concept of earth pressure at rest, active and passive condition. **8**

   B) Write a note on Arches, domes and chimneys. **8**

8. Find the reactions bending moment of continuous beam ABC and draw the SFD and BMD. **16**



SLR-V – 17

Seat No.	

B.Arch. (Semester – III) Examination, 2014
HISTORY OF ARCHITECTURE – III (New)

Day and Date : Tuesday, 9-12-2014 Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

***Instructions** : 1) Q. No. **1** is **compulsory**.*
*2) Answer **any 6** question from the remaining.*

1. Fill in the blanks : **8**
   a) Hoysala temples are built with _____
   b) Gopuram is feature of _____
   c) Chief building material for Hindu temple was _____
   d) _____ is hall for offering.
   e) Compositions of Madurai temple is for _____
   f) The building material used for the Jain temple at Ranakpur is _____
   g) The basic divisions of church are _____ and _____
   h) The episidal end of church is known as _____

2. Explain in detail with sketches **(any 6)** : **(6×12=72)**
   i) Write short notes with sketches **(any 3)** :
      a) The Gopurams of South India.
      b) The sculptures of the Khajuraho temple.
      c) The shikaras of indo Aryan architecture.
      d) Use of orders in renaissance.
      e) Thousand pillared hall of Madurai.
   ii) Explain the Choumukh temple at Kanakpur. Explain the quality of light and the device which makes it possible.
   iii) Explain the architectural features of the star shaped temple of Chennakeshava at Bellur and its other architectural features.
   iv) Explain the grand Basilican church of St. Peters at Rome(new) and explain its architectural feat.
   v) Describe important features of Hoysala temples.
   vi) Describe and draw a neat sketch of plan of Brihadeshwar temple.
   vii) Explain in brief. Evolution of the Hindu temple architecture.
   viii) Draw a neat sketch of West Minister at London.

_____

SLR-V – 18

Seat No.	

B.Arch. (Semester – III) Examination, 2014
CLIMATOLOGY AND ENVIRONMENT – I (New)

Day and Date : Thursday, 11-12-2014 Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

Note. *: 1) Make **suitable** assumptions **wherever** necessary and mention in **your** answer book.*
*2) Figures to the **right** indicate **full** marks.*
*3) **All** questions are **compulsory**.*

1. A) Fill in the blanks : **8**

1) _____ on 23.5 N latitude experienced longest day on earth.
   a) 21-Jun b) 21-Sep
   c) 21-May d) 23-Mar

2) Wind velocity is measured by _____
   a) Pitot tube b) Wind guage
   c) Wind graph d) Bioclimatic chart

3) SI unit of radiation is _____
   a) W/m^2 b) Btu
   c) W/hr d) None of the above

4) Air temp (DBT) at day time veries between _____ degC in hot and dry climates.
   a) 32-43 b) up to 27
   c) 21-27 d) Nov-22

5) _____ is measured by stevenson screen.
   a) DBT b) WBT
   c) Radiation d) Humidity

6) Temperature is measured in _____
   a) Degree celsius b) BTU
   c) Watts d) Celsius

P.T.O.

7) DBT is measured in _____

a) Outdoor b) Bottle

c) Shade d) None of the above

8) _____ is due to heat transmission from body to air in contact with skin.

a) Evaporation b) Reflection

c) Convection d) None of the above

B) Answer in one sentence : **7**

1) What is DBT ?
2) What is Conduction ?
3) What is radiation ?
4) Cosine law.
5) Transmittance.
6) What is Diurnal Range ?
7) Equinox day.

2. A) Find WBT RH AH when Vp-1.2 kN/kg and DBT is 27°C using psycometric chart. **8**

   B) What is macro climate explain in short. **7**

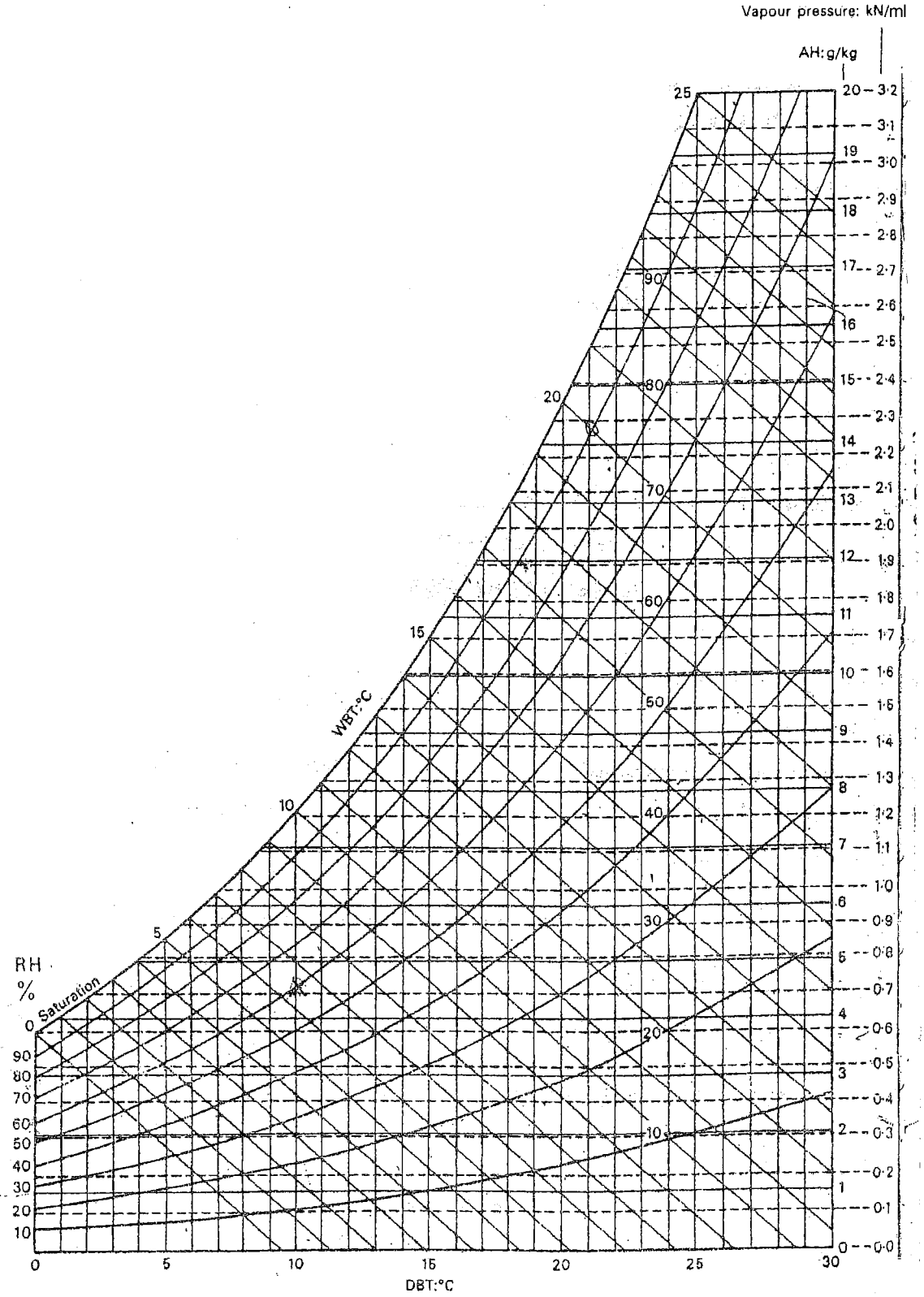
3. A) Explain hot and dry desert climate. **8**

   B) Explain land breeze and sea breeze. **7**

4. Explain azimuth and altitude angle with sketch of sunpath diagram and also explain how to use them in design. **15**

5. Write short note on **any 4** : **20**

   1) Body's heat loss.
   2) Bio Climatic chart.
   3) Humidity.
   4) Psychometric chart.
   5) Cross ventilation.


Vapour pressure: kN/ml
AH: g/kg
WBT: °C
RH %
Saturation
DBT: °C
0
5
10
15
20
25
30
90
80
70
60
50
40
30
20
10

SLR-V – 19

Seat No.	

B.Arch. (Semester – III) (New) Examination, 2014
BUILDING SERVICES – I

Day and Date : Saturday, 13-12-2014 Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

1. A) Fill in the blanks : **4**

   1) UG conduits / drains through which sewage is conveyed is known as _____

   2) _____ is liquid waste from community.

   3) _____is rain water of the locality.

   4) Cowl is used to cover the top of _____ pipe.

   B) Answer in **one** sentence : **4**

   1) Cover 2) Manhole

   3) Waste pipe 4) Invert

2. Explain different types of traps with neat sketches. **12**

3. Differentiate between conservancy system and water carriage system. **12**

4. a) Explain any two method of sewage disposal. **6**

   b) Explain any two types of Privy's. **6**

5. Write short notes : **12**

   1) Spigot and socket joint

   2) Vent pipe

   3) Intercepting chamber.

6. Write short note on various material used in sewer construction. Illustrate with help of neat sketch. **12**

7. Design a septic tank for 3 storey apartment having 2 flats on each floor. **12**

SLR-V – 2

Seat No.	

B.Arch. (Semester – I) Examination, 2014
HISTORY OF ARCHITECTURE – I (New)

Day and Date : Wednesday, 3-12-2014 Max. Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Figures to **right** indicates **full** marks.*
*2) Q. No. **1** is **compulsory**.*
*3) Solve **any six** questions from the **remaining**.*
*4) Draw neat sketches **wherever** necessary.*

1. Fill in the blanks : **8**
   1) First implements used by early man was _____
   2) Indus valley civilization was an _____ civilization.
   3) Egyptians King was known as _____
   4) Entrance gateway of citadel of Tiryns known as _____
   5) Etruscans were pre _____
   6) Agriculture was invented during _____ period.
   7) Vedic rectangular huts were provided with _____ roof.
   8) Name any one settlement during prehistoric period _____

2. Write short notes on the following **(any 3)** : **12**
   1) Building materials used during west Asiatic period.
   2) Vedic huts
   3) Megaron in palace of tiryns
   4) Hypostyle hall in Egyptian temple.

3. Explain different types of tomb in Egyptian architecture. **12**

4. What is mean by ziggurat ? Sketch and explain ziggurat in UR. **12**

5. What are characteristics features of Indus Valley Civilisation ? Explain the same in detail. **12**

6. Describe constructional features of the temple of Juno Sospito. **12**

7. Explain in brief “pre historic architecture”. **12**

8. Sketch and explain palace of Percepolis. **12**

_____

SLR-V – 20

Seat No.	

B.Arch. (Semester – III) Examination, 2014
ARCHITECTURAL DESIGN – III (New)

Day and Date : Monday, 15-12-2014 Total Marks :100

Time : 10.00 a.m. to 4.00 p.m.

***Instructions**: 1) The candidates are **required** to submit the concept and rough scheme and **final** presentation.*

*2) Assume suitable data **wherever** necessary.*

Holiday Home At Mulshi, Pune

A famous wildlife and nature photographer wants to build his Holiday home as a weekend gateway for relaxation at the back waters of Mulshi where he has his own vegetable farm adjoining the home plot.

Brief :

1) Entrance Lobby – 5 SQM
2) Living Room – 35 SQM
3) Kitchen and Dining – 25 SQM
4) Two bedrooms with attached toilets – 50 SQM.
5) One common toilet with wash basin area – 5 SQM
6) Working studio with open Terrace – 30 SQM
7) Porch of Parking his SUV.

Drawing Requirements and scheme of marking :

1) Design concept **10**
2) Site Analysis **10**

P.T.O.

3) Site plan, Floor plans and terrace/roof plan **30**

4) Two elevations **15**

5) Two sections **15**

6) View **10**

7) Presentation **10**

Note :

The drawing to be drawn at the following scales :

1) Site Plan – 1 : 100 scale

2) All floor plan, sections and elevations – 1 : 50

SLR-V – 20

ROAD
4.5M
MULSHI DAM BACKWATERS
30M
4.5M
3M
FOREST
3M
18M
VEGETABLE
FARM
N
E
S
W

SLR-V – 21

Seat No.	

B.Arch. (Semester – III) Examination, 2014
ARCHITECTURAL GRAPHICS – III (Old)

Day and Date : Monday, 1-12-2014 Max. Marks : 50
Time : 3.00 p.m. to 6.00 p.m.

N. B.: *1)* ***All*** *questions are* ***compulsory****.*
2) Retain ***all*** *construction lines.*
3) ***Figures*** *to the right indicate* ***full*** *marks.*
4) ***Five*** *marks are reserved for neatness and good drafting quality.*
5) Make suitable assumptions ***wherever*** *required.*

1. Draw the perspective view of the object by observing following points/conditions (Figure – A) : **25**

   a) A plane makes angle as shown in the figure.

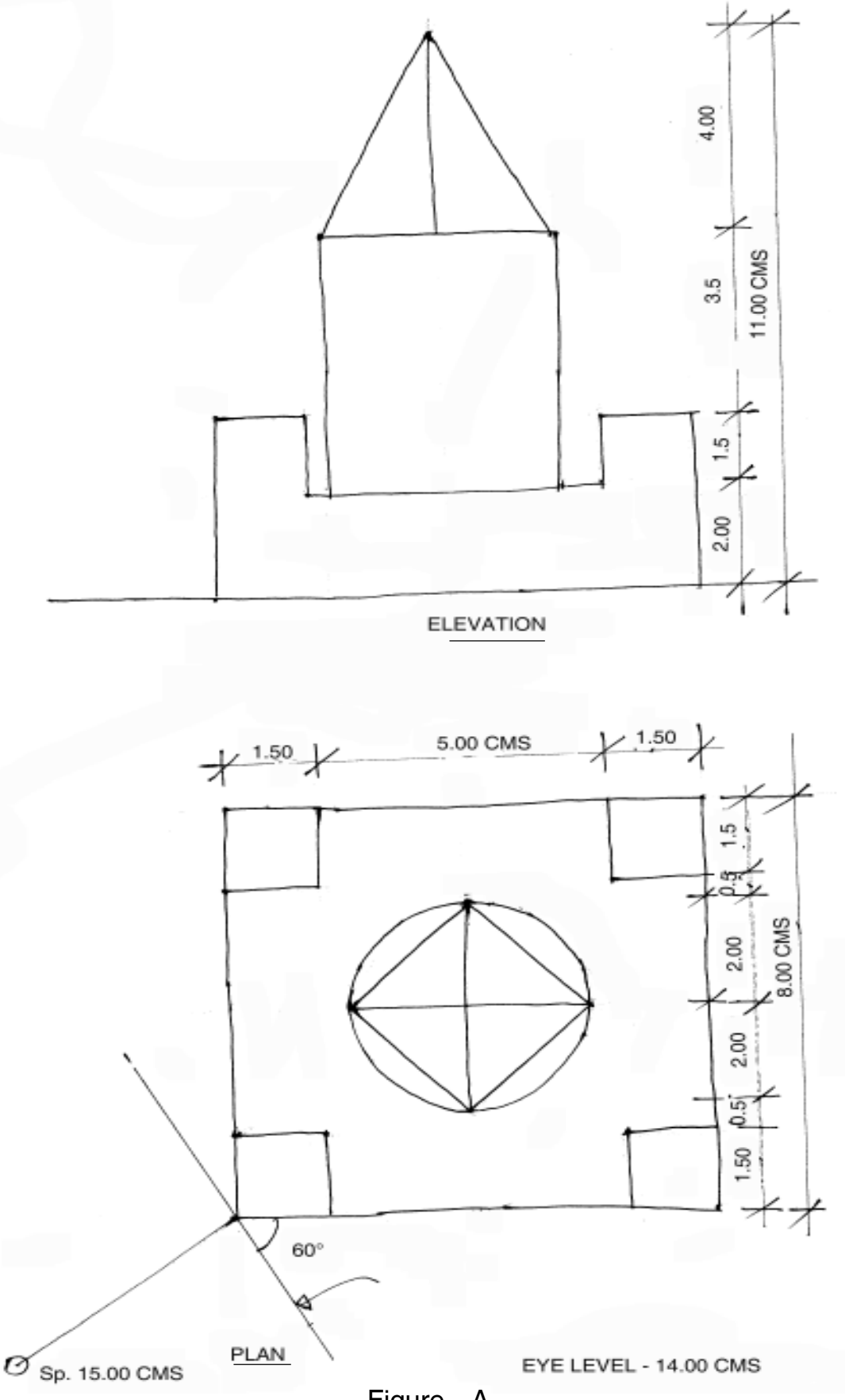
   b) The picture plane touches the object at point 'X'.

   c) The station point is 15.00 cm. away from 'x'.

   d) The eye level is 14.00 cm. above ground level.

2. Draw shade and shadow of the object in (Figure B) in plan and elevation considering the source of light is in conventional direction on the vertical and horizontal planes of the object. **20**

P.T.O.


4.00
3.5
11.00 CMS
1.5
2.00
ELEVATION
1.50
5.00 CMS
1.50
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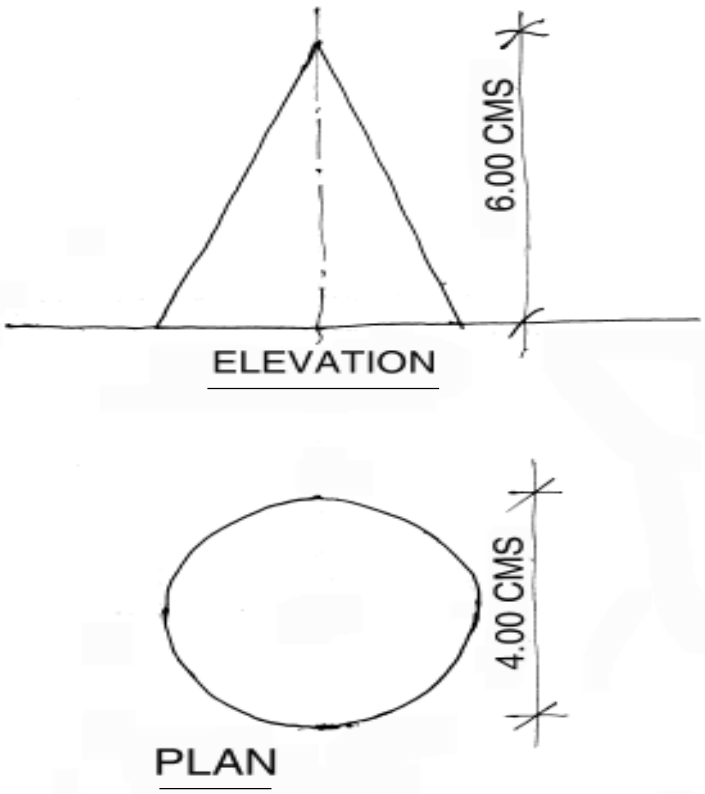
0.5
2.00
8.00 CMS
2.00
0.5
1.50
60°
Sp. 15.00 CMS
PLAN
EYE LEVEL - 14.00 CMS

Figure – A

1)


6.00 CMS
ELEVATION
4.00 CMS
PLAN

2)

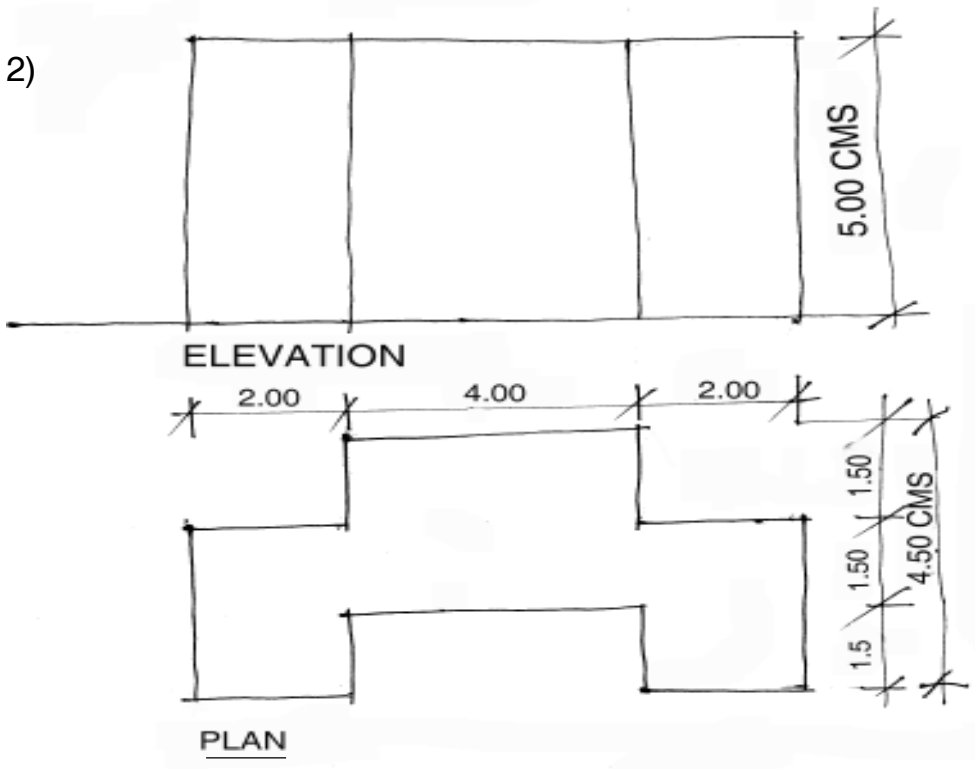

5.00 CMS
ELEVATION
2.00
4.00
2.00
1.50
1.50
4.50 CMS
1.5
PLAN

Figure – B

SLR-V – 23

Seat No.	

B.Arch. (Semester – III) Examination, 2014
THEORY OF STRUCTURE – III (Old)

Day and Date : Friday, 5-12-2014 Max. Marks : 100
Time : 3.00 p.m. to 6.00 p.m.

N.B. : *1) Q. No. **1** and Q. **5** are **compulsory.***
*2) Solve **(any 2)** questions from remaining in Section – **I** and **II**.*

SECTION – I

1. Solve the objective : **10**

1) The maximum slope at support for simply supported beam with central point load is QA = QB = _____ radian.

a) $\frac{Wl^2}{16\,EI}$ b) $\frac{Wl^3}{24\,EI}$ c) $\frac{Wl^2}{8\,EI}$ d) None of above

2) The form of curve to which the beam bends after loading is called as _____ curve.

a) Plastic b) Bending c) Flexural d) Elastic

3) The stress which resist shear force are called as _____ stresses.

a) Bending b) Elastic c) Shear d) Buckling

4) The bending moment of a cantilever beam with point load 'P' at its free end is _____

a) $\frac{Pl}{2}$ b) $\frac{Pl^2}{2}$ c) $\frac{Pl^2}{8}$ d) Pl

5) Section modulus of hallow rectangular section is _____

a) $\frac{BD^3 - bd^3}{6D}$ b) $\frac{BD^2 - bd^2}{6}$ c) $\frac{BD^3 - bd^3}{12D}$ d) $\frac{BD^2 - bd^2}{12}$

2. A simply support beam of symmetrical I section :
a) Flange : 100 × 10 mm
b) Web : 75 × 10 mm
Overall depth 95 mm
The span of beam is 6 m carrying VDL of 7 KN/M entire span, Draw bending stress distribution diagram. **20**

P.T.O.

3. a) Write in detail equivalent section in flitched beam. **8**

   b) A flitched beam consist of wooden joists 100 mm wide and 200 mm depth, strength by a steel plate of 10 mm thick and 200 mm depth on either side of a joist. If the maximum stresses in the wooden joists is 701 mm^2. Find the maximum stresses attained in the steel. Find the moment of resistance of a section. Take ES = 20 Et. **12**

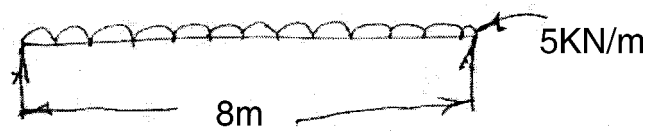
4. a) A steel plate is bent into a circular Arch of radius 12 m. If the plate section be 100 mm wide and 18 mm thick. Find the maxm. stresses induced and bending moment which can produced stress. Take E = 200 GPa. **16**

   b) Write down assumption in pure bending therapy. **4**

SECTION – II

5. Write down the procedure for calculating slope and deflection of simply supported beam. **10**

6. A simply supported beam is imposed with Vdl over entire span as shown in fig.. **20**



   Calculate maxm. slope and deflection.

   If $E = 2 \times 10^5$ N/mm^2 and $I = 2.8 \times 10^8$ mm^4.

7. a) A circular cross section of 400 mm ϕ is subjected to a shear force of 30 KN. Calculate : **12**

      1) Shear stress maxm.
      2) Average stress and
      3) Shear stress at 100 mm above N.A.

   b) Write down in detail about shear stress in beam. **8**

8. The principle stresses at a point in a bar are 190 N/mm^2 (T) and 95 N/mm^2 (C). Determine the resultant stresses in magnitude and direction on a plane inclined at 60° to the axis of the major principal stresses. Also calculated the maximum intensity of shear stresses in the material at the points. **20**

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SLR-V – 24

Seat No.	

B.Arch. (Semester – III) Examination, 2014
HISTORY OF ARCHITECTURE – III (Old)

Day and Date : Tuesday, 9-12-2014 Total Marks : 100
Time : 3.00 p.m. to 6.00 p.m.

1. Fill in the blanks : **5**
   a) Hoysala temples are _____ structures.
   b) Overall form of Dravidian shikara is _____
   c) _____ is integral part of Hindu temple.
   d) Gopurams are not _____
   e) _____ temple is the largest Hindu temple.

2. Answer in **one** word : **5**
   a) Name the building material used for Hoysala temples.
   b) What devices are used to counter the outward thrust of domes in Gothic architecture ?
   c) Name the 24^{th} Tirthankar of Jain religion.
   d) What is Aisle ?
   e) Who designed St. Peter's Piazza ?

3. Explain in brief with sketches : **(5×7=35)**
   a) Discuss the method of construction for Indo Aryan Shikaras.
   b) Explain the stained glass windows of Gothic churches and cathedrals.
   c) Draw a neat sketch of Hoysala order (columns).
   d) Describe the characteristic feature of Jain temple architecture.
   e) Draw a neat sketch of Saint Peter church at Rome.

P.T.O.

4. Write short notes with sketches **(any 5)** : **(5×5=25)**
   a) The tanks of South Indian temples.
   b) The clerestory at Ranakpur temple.
   c) The sculptures of the Khajuraho temple.
   d) The obelisk at Kailasnath temple.
   e) The Gothic buttress.
   f) Star or stellar shaped temples of Hoysalas.
   g) The Gopurams of South India.

5. Explain in detail with sketches **(any 2)** : **(2×15=30)**
   a) Explain the magnificent Khandariya Mahadev temple at Khajuraho.
   b) Explain the Minakshi Sundaram temple complex at Madurai.
   c) Explain the architectural characters of the West Minister Abbey at London.

———————————

SLR-V – 25

Seat No.	

B.Arch. (Semester – III) Examination, 2014
CLIMATOLOGY AND ENVIRONMENT – I (Old)

Day and Date : Thursday, 11-12-2014 Total Marks : 50
Time : 3.00 p.m. to 5.00 p.m.

***Instructions** : 1) Q. **1, 2** and **5** are **compulsory**.*
*2) Solve **any one** out of Q. **3** to Q. **4**.*

1. A) Fill in the blanks : **5**

1) _____ is moderate city.
   a) Mumbai
   b) Bangalore
   c) Jaisalmer
   d) Delhi

2) 21st March is _____ day.
   a) Shortest
   b) Equinox
   c) Equal
   d) None of the above

3) The vapour pressure is measured in _____
   a) Millimeter
   b) Watts/m^2
   c) Newton/m^2
   d) Litre

4) Tilt of the earth's axis is _____
   a) 20°
   b) 26.7°
   c) 23.5°
   d) 28°

P.T.O.

5) Polar winds usually experiences around _____

a) 60° N and S

b) 80° N and S

c) 45° N and S

d) 23° N and S

B) Answer in one sentence : **5**

1) Give measuring unit for humidity and precipitation.

2) What is the range of visible light to human perception ?

3) Give temperature and humidity conditions in hot and dry climate.

4) Name any four cold and cloudy cities in India.

5) What is land breeze ?

2. Find VP, WBT, and AH when DBT – 15°C and RH – 60%. **5**

(refer psychrometric chart)

3. a) Explain warm and humid climate and its characteristics. **8**

b) Explain body's heat production for different activities. **7**

4. a) Explain global wind pattern with sketches. **8**

b) Explain stack effect. **7**

5. Write short notes on **any four** : **20**

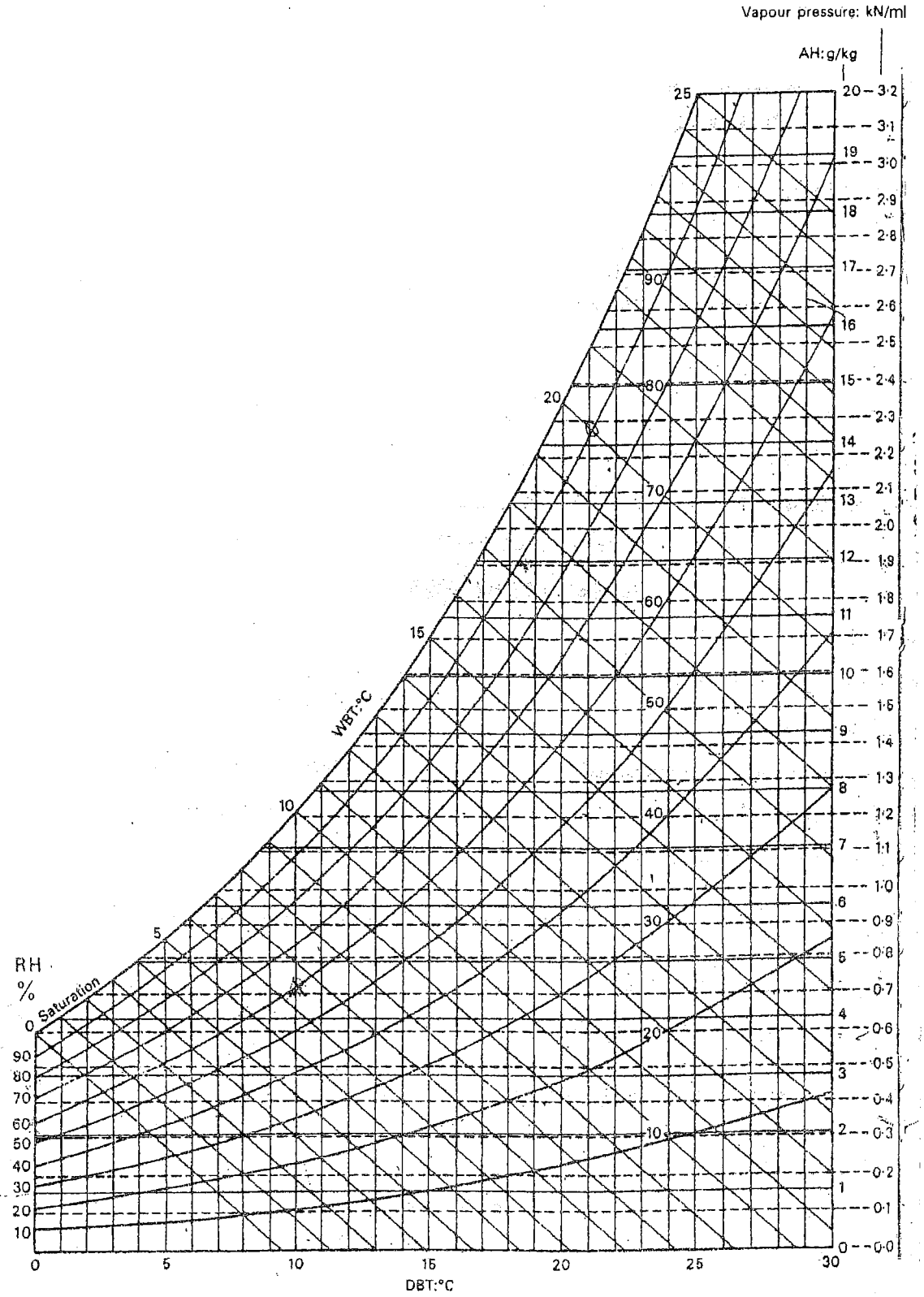
1) Tilt of axis

2) Comfort zones

3) Macro Climate

4) Psychrometric Chart

5) Sun path diagram.



Psychromtric Chart

SLR-V – 26

Seat No.	

B.Arch. (Semester – III) (Old) Examination, 2014
BUILDING SERVICES – I

Day and Date : Saturday, 13-12-2014 Max. Marks : 50
Time : 3.00 p.m. to 5.00 p.m.

1. A) Fill in the blanks. **5**
   1) Rain water of the locality is called _____
   2) _____ is lower most surface of sewer.
   3) Top of vent pipe is covered with _____
   4) Liquid waste of community is _____
   5) Bottle trap is used for _____

   B) Answer in **one** sentence. **5**
   1) Man hole
   2) Trap
   3) Cover
   4) Waste pipe
   5) Sewer.

2. Write short notes (**any 3**). **15**
   1) Wash basin
   2) Flushing tank
   3) Lamp hole
   4) Grease and oil traps.

3. a) Explain principles of house drainage and enlist different types of sanitary fittings. **10**

   b) Explain pit latrine. **5**

4. Principles of house drainage and enlist different types of traps. **10**

   OR

   Differentiate between conservancy and water carriage system.

_____

SLR-V – 27

Seat No.	

B.Arch. (Semester – III) Examination, 2014
ARCHITECTURAL DESIGN – III (Old)

Day and Date : Monday, 15-12-2014 Total Marks : 100
Time : 10.00 a.m. to 4.00 p.m.

***Instructions** : 1) The candidates are required to submit the concept and rough scheme and final presentation at the **end of the day**.*
*2) Assume **suitable** data **wherever** necessary.*

Drawing requirement and scheme of marking –

1. Design concept – 10 marks
2. Site analysis – 10 marks
3. Site plan, floor plans, terrace plan – 35 marks
4. 2 elevations – 15 marks
5. 2 sections – 15 marks
6. Views / sketches – 05 marks
7. Presentation – 10 marks

Note –

Site plan – 1:100 scale

All floor plans, sections and elevations – 1:50 scale

Brief :

<u>Pre-school at Mumbai in a residential area</u>

Design a per-school with following requirements.

a. Director's office – 10 Sq. M.
b. 2 adult's toilet and 2 children toilet – 20 Sq. M.
c. 2 classrooms with play area and store – 50 Sq. M. each
d. Snack preparation area – 10 Sq.M.
e. Reception and waiting – as per requirement
f. Play yard – as per design
g. Parking – as per requirement
h. Pick up and drop off area – as per requirement.

P.T.O.

SLR-V – 27

SITE PLAN

SLR-V – 28

Seat No.	

B.Arch. (Semester – IV) Examination, 2014
ARCHITECTURAL GRAPHICS – IV

Day and Date : Tuesday, 2-12-2014 Total Marks : 50

Time : 3.00 p.m. to 6.00 p.m.

Instructions *: 1)* ***All*** *the questions are* ***compulsory****.*
2) Retain ***all*** *construction lines.*
3) Figures to ***right*** *indicates* ***full*** *marks.*
4) ***Five*** *marks are reserved for neatness and* ***good*** *drafting.*
5) ***Make*** *suitable assumptions* ***wherever*** *necessary.*

1. Draw shades and shadows of the objects in FIG. "A" in plan and front elevation considering the conventional direction of light source. **10**

2. Draw perspective view of the given objects observing the following points in FIG. "B". **15**
   a) The picture plane making 30 angle at 'X'.
   b) The station point is 15.00 cm away from the "X".
   c) The eye level is 12.00 cm above ground level.

3. Draw the perspective view of the object with sciography as in fig. "A" with following points : **20**
   a) The station point is touching the object at "X" and making 60 angle at "X"
   b) The station point 12.00 cm away from "X".
   c) The eye level is 10.00 cm above ground level.

   OR

3. Draw the isometric view of the object with shade and shadow of the FIG. A.

P.T.O.

FIG "A"

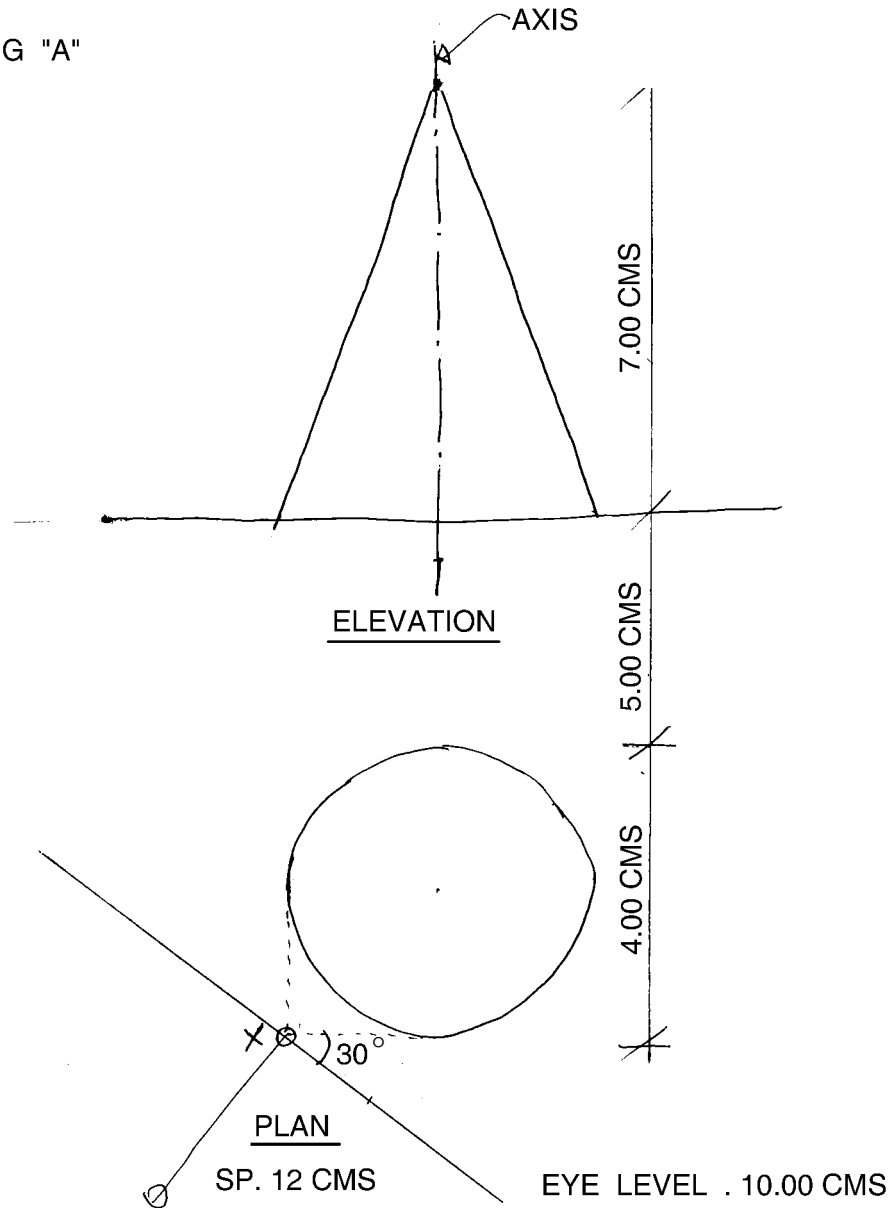
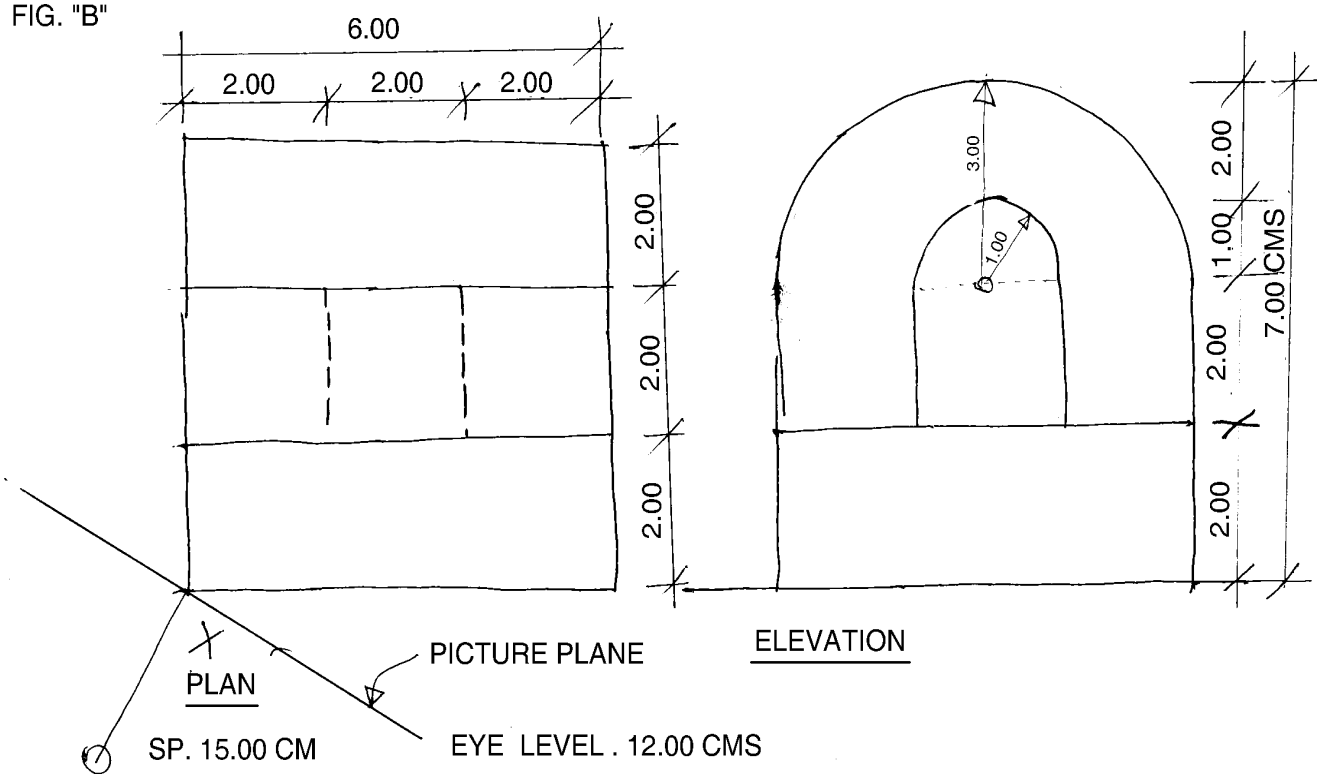

AXIS
7.00 CMS
ELEVATION
5.00 CMS
4.00 CMS
30°
PLAN
SP. 12 CMS
EYE LEVEL . 10.00 CMS

FIG. "B"


6.00
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3.00
1.00
2.00
11.00
7.00 CMS
2.00
2.00
PLAN
PICTURE PLANE
ELEVATION
SP. 15.00 CM
EYE LEVEL . 12.00 CMS

SLR-V – 3

Seat No.	

B.Arch. (Semester – I) Examination, 2014
BUILDING CONSTRUCTION AND MATERIAL – I (Old)

Day and Date : Monday, 1-12-2014 Total Marks : 50
Time : 10.00 a.m. to 1.00 p.m.

***Instruction** : Q. No. **I** and Q. No. **II** are **compulsory**.*

I. Fill in the blanks : **5**

a) A brick moulded with a rounded angle is _____

b) Any one example of igneous rock is _____

c) Brick obtained by cutting length wise is _____

d) _____ machine is used to lift stones.

e) In deep foundation, depth is equal to or _____ than its width.

II. Draw neatly elevation and section of any 4 types of rubble masonry. **15**

III. Solve **any three** questions from remaining.

i) Differentiate between combined trapezoidal footing and strip footing with neat sketches. **10**

ii) Differentiae between rubble masonry and Ashlar masonry. **10**

iii) Compare brickwork with stonework. **10**

iv) Draw and define any five shapes of bricks. **10**

v) Write short notes (**any 2**) : **10**

a) Tempering of bricks

b) Angle of repose

c) Crushing test for stone.

_____

SLR-V – 30

Seat No.	

B. Arch. (Semester – IV) Examination, 2014
THEORY OF STRUCTURE – IV

Day and Date : Saturday, 6-12-2014 Total Marks : 100
Time : 3.00 p.m. to 6.00 p.m.

Instructions *: 1)* ***Use*** *of Scientific calculator is* ***allowed****.*
2) Q. ***1*** *and Q.* ***5*** *are* ***compulsory*** *from the remaining question solve* ***any two*** *from each Section* ***I*** *and* ***II****.*
3) Figures to the ***right*** *indicates* ***full*** *marks.*

1. Select correct option for the following : **10**

a) The effective length of the column of both end hinged is _____

i) L = l ii) L = $\frac{l}{2}$

iii) L = 2l iv) L = $\frac{l}{\sqrt{2}}$

b) The Euler's formula for calculating of crippling load for cantilever column is P _____

i) $\frac{\pi^2 l^2}{EI}$ ii) $\frac{4\pi^2 EI}{l^2}$

iii) $\frac{2\pi^2 EI}{l^2}$ iv) $\frac{\pi^2 EI}{l^2}$

c) The Ratio of effective length to the radius of gyration is known as _____

i) Stability Ratio ii) Voids Ratio
iii) Slenderness Ratio iv) Capacity Ratio

d) The unit of α in case of Rankine's formula for calculating crushing load is _____

i) KN ii) KN.m
iii) KN/m^2 iv) Unitless

P.T.O.

e) The crushing stress of mild stress is

i) 320 N/mm^2 ii) 550 N/mm^2

iii) 50 N/mm^2 iv) 250 N/mm^2

SECTION – I

2. a) Write a note on limitation of Euler's column theory in detail. **8**

   b) A mild steel tube 4m long, 300 mm internal and 5mm thick is used as a struct with both end hinged. Find the crippling load. Take $\in$ = 2.1 × 10^5 N/mm^2 **12**

3. A Hallow cylindrical cast Iron column is 4 m long, both end fixed. Design the column to carry an axial load of 250 KN. Use Rankine's formula and adapt a factor of safety of 5. The internal diameter may be taken as 0.8 times the external diameter take fc = 550 N/mm^2 and $\alpha = \frac{1}{1600}$. **20**

4. a) Write a note on design of wall thickness for a load bearing structure. **8**

   b) A Brick Peir 350 mm × 350 mm is 2500 mm has to carry an axial load of 400 KN. The allowable bearing capacity of soil on which peir rests is 250 KN/m^2. Masonry weigh of 19KN/m^2, Angle of repose of earth is 30° and Wt. of soil is 16KN/m^3. Design suitable foundation to the peir. **12**

SECTION – II

5. Write a notes on importance of soil mechanics for construction industry. **10**

6. a) A soil sample is partially saturated its natural moisture content was found to be 22V and Bulk density is 2.04 gm/cc. If the specific gravity of solid particles is 2.65 and the density of water is 1 gm/cc. Find out the Sr and voids Ration. **12**

   b) Define Air content, Voids Ratio, Specific gravity and Dry Density. **8**

7. a) Explain the limitation of Rankine's theory for Earth pressure. **7**

   b) Write a note on retaining wall. **6**

   c) Write a note on Density Index. **7**

8. A Dam section is 8 m high, the maximum depth of the water compounded being 7.5m. The top width of the section is 1 m. The Wt. of masonary is 22KN/m^3 and Wt. of water is 10KN/m^3. Find the minimum bottom width required coefficient of friction between soils masonary is 0.65. **20**

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SLR-V – 31

Seat No.	

B.Arch. (Semester – IV) Examination, 2014
HISTORY OF ARCHITECTURE – IV

Day and Date : Monday, 8-12-2014 Max. Marks : 100
Time : 3.00 p.m. to 6.00 p.m.

Instructions *: 1) Q. No.* ***1*** *is* ***compulsory****.*
2) Draw ***neat*** *sketches* ***wherever*** *necessary.*
3) Answer ***any two*** *questions from Q. No.* ***2****,* ***3****,* ***4*** *and* ***any two*** *questions from* ***5****,* ***6****,* ***7****.*

1. Fill in the blanks : **10**
   1) Moti Masjid in Aura built by _____
   2) By city of 'New Delhi' designed by _____
   3) Famous Moghal Garden in India _____
   4) Namaj is followed in _____ culture.
   5) Taj Mahal located in the State of _____
   6) _____ is the month of Fasting in Islam.
   7) Largest dome in the India _____
   8) Victoria terminus now known as _____
   9) Alai Darwaja was constructed by _____
   10) Reading of Koran in Islamic Religion termed as _____

2. Write short notes on the following **(any five)** : **25**
   1) Islamic Arches
   2) Buland Darwaja
   3) Architectural characters of Gulbarga province.
   4) Diwane-Khass in Red Fort.
   5) Tomb of Salim Chisti.
   6) Five pillars of Islam.

P.T.O.

3. a) Draw all floor plans and elevation of ‘Qutb Minar” and explain the same in detail. **15**

   b) Draw sketch and write detail note on “Jama Masjid” at Delhi. **10**

4. a) Explain architectural characters of Bijapur Province with the help of any one example. **15**

   b) Draw neat sketches of various types of Islamic Domes. Write note on the same. **10**

5. a) Describe colonial architecture in India. **10**

   b) Write detailed note on “Parliament House” New Delhi. **10**

6. Explain the following terms with neat sketch. **20**

   a) Pachmahal

   b) Kiosk

   c) Mihrab and Mimbar

   d) Arabesque and Calligraphy

   e) Dome construction in Islamic Architecture.

7. Draw plan, elevation and section of “Taj Mahal, Aura. And write the detailed note on the same. **20**

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SLR-V – 32

Seat No.	

B.Arch. (Semester – IV) Examination, 2014
CLIMATOLOGY AND ENVIRONMENT – II

Day and Date : Wednesday, 10-12-2014 Total Marks : 50
Time : 3.00 p.m. to 5.00 p.m.

***Instructions** : 1) Q. **1, 2** and **5** are **compulsory**.*
*2) Solve **any one** out of Q. 3 to Q. **4**.*

1. A) Fill in the blanks : **5**

1) Light is measured in _____

a) Lux b) Kilo gram

c) Kilo watts d) Watts

2) Visible light ranges between _____ to _____ nm.

a) 380-700 b) 150-400

c) 580-800 d) 320-750

3) In homogeneous medium light travels along _____

a) Free path b) Zigzag path

c) Curved path d) Straight path

4) Heat gain on vertical surface is measured in _____

a) meter/second b) watts/m^2

c) newton/m^2 d) litre

5) Azimuth angle can be find out from _____

a) Sunpath diagram b) Psychrometric chart

c) Sun dial d) None of the above

B) Answer in short **(any 2)** : **4**

1) Explain heat flow through conduction.

2) What is periodic heat flow ?

3) Sketch evaporative cooling tower.

P.T.O.

2. Sketch site scale, building scale and component scale, bioclimatic strategies for cold and cloudy climate. **6**

3. a) Explain in detail vernacular architecture. **8**

   b) Explain wind flow around the building. **7**

4. Explain elements of climate in detail. **15**

5. Write short notes on **any four** : **20**

   1) Evaporative cooling

   2) Shadow angles

   3) Noise reduction in group of buildings

   4) External heat gain

   5) Daylight factors.

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SLR-V – 33

Seat No.	

B. Arch. (Semester – IV) Examination, 2014
BUILDING SERVICES – II

Day and Date : Friday, 12-12-2014 Total Marks : 50
Time : 3.00 p.m. to 5.00 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) ***Draw*** *sketches* ***wherever*** *necessary.*

1. MCQ/ select the most appropriate option. **5**

   A) Meters are used to determine _____ of water.
   a) Quantity b) Quality c) Flow

   B) Recommended pH range for treated drinking water is around _____
   a) 1-2 pH b) 7-8 pH c) 15-18 pH

   C) _____ is the device which is used to tap the water from mains.
   a) Hydrants b) Meters c) Solar water heater

   D) _____ is not a surface water source.
   a) Lakes b) Rivers c) Elevated reserviors

   E) _____ is the most commonly used coagulant in the water treatment process.
   a) Carbon b) Alum c) Copper-oxide

2. What is softening of water and its necessity ? **5**

3. Explain with neat sketches : **15**
   a) Slow sand filters
   b) Drinking water fountain
   c) Water meter.

4. Explain with suitable sketches “All types of water-intakes in detail”. **15**

5. Explain with sketch “Solar water heater”. **10**

   OR

5. Design a overhead water tank for 50 persons. **10**

SLR-V – 34

Seat No.	

B.Arch. (Semester – V) Examination, 2014
BUILDING CONSTRUCTION AND MATERIALS – V

Day and Date : Monday, 1-12-2014 Max. Marks : 50
Time : 10.00 a.m. to 1.00 p.m.

***Instructions**: 1) Make **suitable** assumptions **wherever** necessary and mention it in **your** answer book.*
*2) Figures to **right** indicates **full** marks.*

1. Fill in the blanks : **5**
   a) Na_2O, CaO, $6SiO_2$ is chemical formula of _____ glass.
   b) Common glass is known as _____ glass.
   c) I-section consists of web and _____
   d) Bessemer process is involved in _____ manufacturing.
   e) Cold shortage is defect in _____ manufacturing.

2. Draw plan, elevation, section and 2 details of SLIDING FOLDING DOOR for an opening of 1.8 m × 2.1 m. **15**

3. Write short notes (**any 3**) : **15**
   a) Soda lime glass
   b) Uses of steel
   c) Anti corrosive treatment
   d) I-Section
   e) Defects in glass.

4. State different types of GLASS and give PHYSICAL PROPERTIES of glass. **15**

_____

SLR-V – 35

Seat No.	

B.Arch. (Semester – V) Examination, 2014
THEORY OF STRUCTURES – V

Day and Date : Wednesday, 3-12-2014 Total Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

Instructions** : 1) Q. **1** is **compulsory.
*2) **IS 456** and **800** is **allowed.***
*3) **Use** of calculator is **allowed.***
*4) Solve **any 4** Que. from remaining.*

1. Multiple choice questions :

1) The distance between centres of rivets should not be less than _____ times the nominal dia. of rivet.
   a) 2.5 b) 1.50 c) 1.0

2) In a fixed beam, a slope at both ends is_____
   a) zero b) min c) max

3) In the assumptions of R.C.C. design of beam the tensile strength of con is ____
   a) more b) less c) ignored

4) Often welded joints are _____ than riveted joints.
   a) uneconomical b) rarely used c) economical

5) Failure of rivet takes place due to _____
   a) bearing of rivet b) crushing of rivet c) tearing of rivet

2. a) A R.C.C. beam section 300 × 500 mm is reinforced with 4 bars of 16 mm ϕ with an effective cover of 50 mm. The beam is simply supported over a span of 5m. Find the maximum permissible UDL on the beam. Use M20 and Fe 500. **9**

   b) What is meant by under reinforced, balanced and over reinforced section ? **8**

P.T.O.

3. a) Explain the pitch and strength of a rivet. **8**

   b) Differentiate between riveted joints and welded joints. **9**

4. a) Write a note on workability of concrete. **8**

   b) Determine the M.R. of beam of c/s of 150×300 mm (eff. depth) containing (3 – 16 mm ϕ) tension bars. Assume M20 grade of con and Fe415 steel. **9**

5. a) A steel stanchion, consisting of ISHB 250 @ 54.7 kg/m is subjected to following axial load P = 300 kN, Nxx=10kN.M, Myy = 15kN.M. Determine max bearing stress on concrete base. Take permissible bearing stress as 4 mpa. **9**

   b) What do you mean by development length of a bar ? **8**

6. a) Select a suitable 'H' sec for a column carrying a load of 350 kN 4 end mmt. of 45 kN.M each @ the major axis. The effective length of col. is 6m. Assume cm = 0.6. **10**

   b) What is stress, strain and modulus of elasticity ? **8**

7. a) What are the assumptions made in R.C.C. Theory ? **8**

   b) Explain the term modular ratio. **9**

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SLR-V – 36

Seat No.	

B.Arch. (Semester – V) Examination, 2014
HISTORY OF ARCHITECTURE – V

Day and Date : Friday, 5-12-2014 Total Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

1. Fill in the blanks : **5**
   a) _____ is the studio and residence of Frank Lloyd Wright.
   b) _____ is the First Lady to be awarded the Pritzker prize.
   c) The_____ housing is designed by architect Zaha Hadid.
   d) The Guggenheim at Bilbao is designed by _____
   e) The Guggenheim at New York is designed by_____

2. Answer in **one** word : **3**
   a) The most famous work of Ar Oscar Niemeyer.
   b) The author of the book "Complexity and Contradition" in architecture.
   c) Name the building material used in adundance during modern architecture.

3. Explain in brief with sketches : **(3×6=18)**
   a) Differentiate between modern and post modern architecture.
   b) Describe the architectural features developed in International style.
   c) Draw a typical plan and view of Kanchanjunga Apartments.

4. Write short notes **(any 6)** : **(6×4=24)**
   a) Deconstruction
   b) Art Nouveau
   c) Ronchamp Church

P.T.O.

d) CasaMila Apartments

e) National Congress Complex at Brazilia

f) Falling water

g) Louis Sullivan.

5. Explain in detail with sketches **(any 2)** : **(2×15=30)**

a) Describe the philosophy of master architect Mies Van-Der-Rohe and explain two buildings of his in brief.

b) Explain the Bauhaus movement and the school in brief.

c) Explain how industrial revolution changed society in terms of social and economics. Explain new materials and construction technology.

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SLR-V – 37

Seat No.	

B.Arch. (Semester – V) Examination, 2014
BUILDING SERVICES – III

Day and Date : Tuesday, 9-12-2014 Total Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Q. No. **1** and **2** are **compulsory**.*
*2) Attempt **any five** from the **remaining**.*

1. Fill in the blanks : **8**
   1) Voltage × current = _____
   2) _____ lamps are called cold cathode lamps.
   3) An opening area equal to not less than _____ of the floor area of the room should be provided for proper ventilation.
   4) Central air conditioning system is generally used for the load above _____ of refrigeration.
   5) Depth of car must be _____ m in case of hospital bed lift.
   6) _____ is unit of electric current.
   7) _____ is provided in lift to balance load being carried.
   8) _____ lamps are used for flood lighting.

2. Write short notes **(any 3)** : **12**
   1) Supply or plenum system of ventilation
   2) Halogen lamps
   3) Counter weight of lift
   4) Filters in air conditioning.

3. Show and explain domestic single phase AC supply. **12**

4. Explain with sketch split system of Air Conditioning. **12**

5. Explain working of escalator. **12**

6. a) 3 phase AC supply. **6**
   b) Neon lamps with sketch. **6**

7. Explain Fire Hydrant and automatic sprinkler system of fire extinguishers. **12**

8. Explain functional requirement of a ventilation system. **12**

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SLR-V – 38

Seat No.	

B.Arch. (Semester – V) Examination, 2014
ARCHITECTURAL DESIGN – V
Theory of Design (Into. to Landscape)

Day and Date : Tuesday, 16-12-2014 Total Marks : 100

Time : 10.00 a.m. to 4.00 p.m.

Day and Date : Wednesday, 17-12-2014

Time : 10.00 a.m. to 4.00 p.m.

***Instructions** : 1) The candidates are required to **submit** the concept and rough scheme and **final presentation** at the end of **second day**.*

*2) A**ssume** suitable data **wherever** necessary.*

COMMERCIAL COMPLEX AT GULBARGA

Gulbarga, a city in the state of Karnataka. It is famous for Moghul architecture and is presently showing signs of growth in the field of Industries, education, Health etc. The increasing growth with the population has given rise to a need of commercial complex.

The temperature rises upto 45°C in summer and upto 12°C in winter. The site is at the junction of 2 roads.

Architectural Programme :

i) Shops – 20 in no. – 15.0 sqm each

ii) Offices – 10 in no. – 30.00 sqm each

iii) Multipurpose hall/banquet hall with pantry and toilet – 150.0 sqm

iv) Cafeteria [Dining, Kitchen, Pantry, Store, Utility] – 150 sqm

P.T.O.

v) Staircase, Lifts, Toilets as per requirement

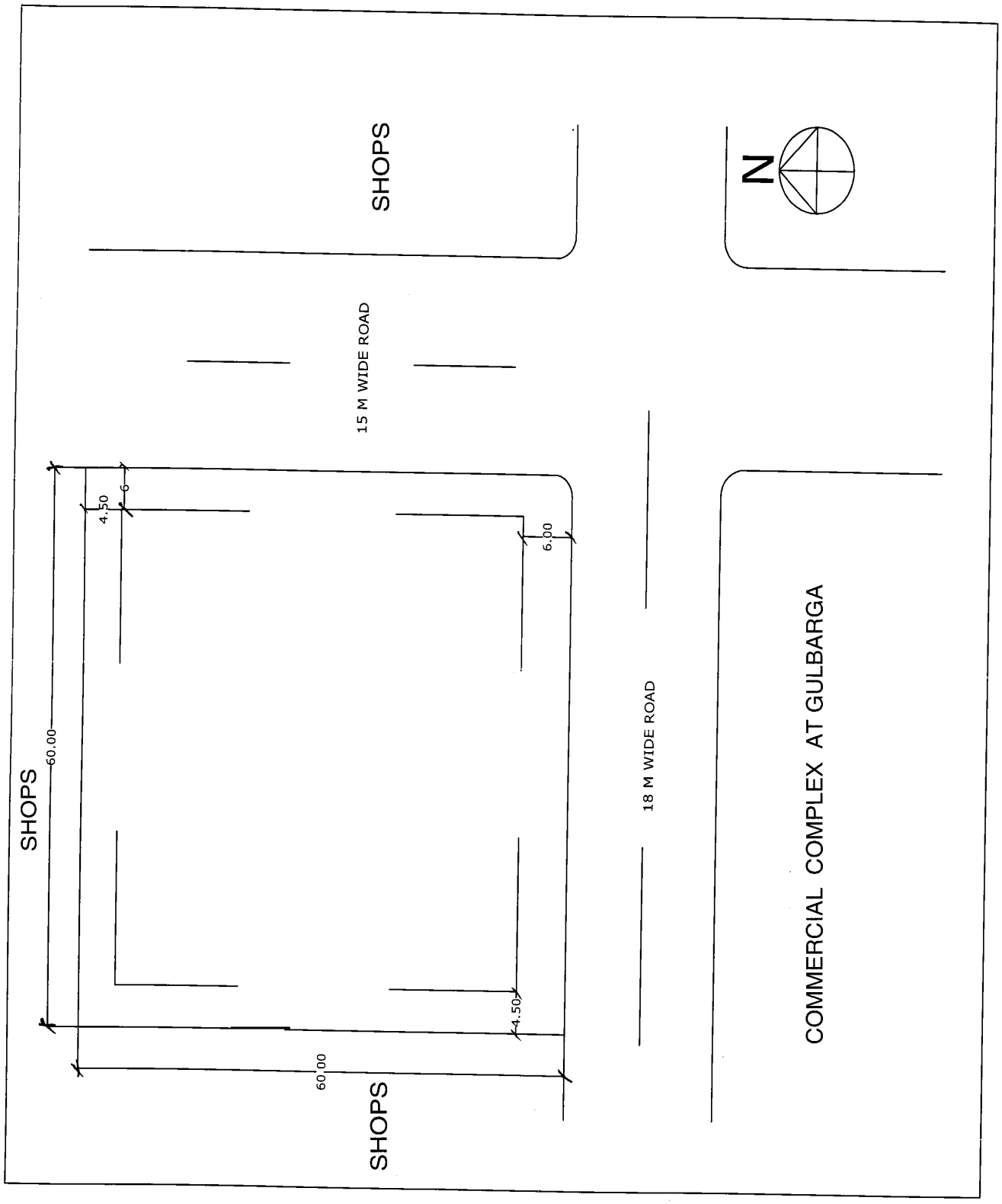
vi) Parking : 4 wheeler's – 5-8

2 wheeler's 25-30

vii) Children park, Garden are to be demarced on site

Drawing requirements :

1) Concept and analysis	**10 + 5 = 15**
2) Site plan with site section (1 : 100)	**7 + 3 = 10**
3) All floor plans with furniture layout (1 : 50)	**25**
a) G. F. – 10	
b) Typical (FF/SF) – Each 6 marks	
c) Terrace floor – 3	
4) 2 – Elevations –	**15**
5) 2 – Sections –	**15**
6) Details if any –	**10**
7) View –	**5**
8) Presentation –	**5**


SHOPS
N
15 M WIDE ROAD
4.50
6
6.00
SHOPS
60.00
4.50
60.00
SHOPS
18 M WIDE ROAD
COMMERCIAL COMPLEX AT GULBARGA

SLR-V – 4

Seat No.	

B.Arch. (Semester – I) (Old) Examination, 2014
THEORY OF STRUCTURES – 1

Day and Date : Wednesday, 3-12-2014 Max. Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

N. B. *: 1) Q. No.* ***1*** *and Q. No.* ***2*** *are* ***compulsory****. Solve (****any two****) from Section* ***I*** *and* ***II****.*
2) ***Use*** *of scientific* ***calculator*** *is* ***allowed****.*
3) Figure to ***right*** *indicate full marks.*
4) Draw ***neat*** *sketches* ***wherever*** *necessary.*
5) ***Make*** *suitable assumptions if* ***necessary****.*

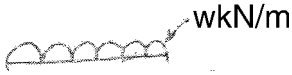
SECTION – I

1. Select the correct option from the following : **10**

   i) 1 kN force is equal to _____
   a) 10^3 b) 10^2 c) 10^6 d) 10^9

   ii) Resolution of 100 kN force inclined at 60° with x-axis into x and y components respectively will be _____
   a) 50,86.60 b) 86.50, 50 c) 50, 50 d) 86.6, 86.6

   iii) The load which is shown below is known as

   a) udl b) UVL
   c) concentrated load d) none

   iv) In case of framed structure the walls are designed for _____
   a) strength b) stability c) partition d) fire resistance

   v) From the following which is not a characteristic of a force _____
   a) Magnitude b) Direction c) Point of application d) None

2. a) State the characteristic of force. Also specify the effect of forces on a body. **8**

   b) Write in detail :
   i) Function of wall in load bearing str. and RCC structure.
   ii) Function of footing. **7**

P.T.O.

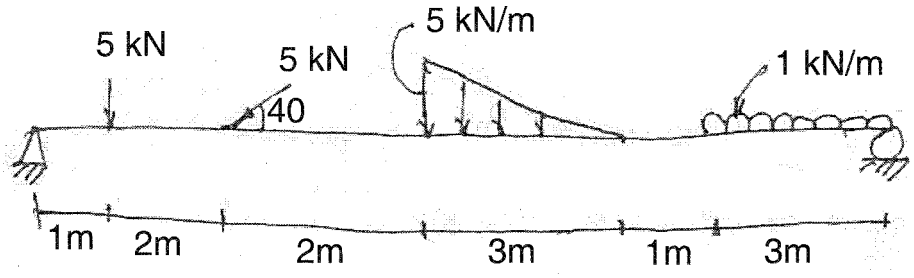
3. Find the resultant in magnitude and direction of the following forces acting away from a point
   i) 300 N force acting 30° North of East
   ii) 150 N force acting 45° North of West
   iii) 200 N force towards West
   iv) 400 N force acting 30° West of South. **15**

4. a) Explain in detail lamis theorem. **7**
   b) Two force 70 N and 60 N are acting at and away from a point. If angle between them is 50°. Find the resultant in magnitude and direction. **8**

SECTION – II

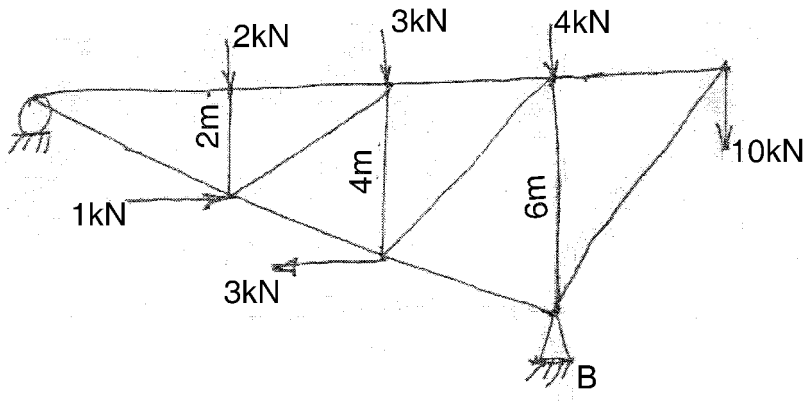
5. Explain types of beam also state the loads considered in beam analysis. **10**

6. Calculate the support reaction of simply supported beam. **15**



7. a) Write a note on types of loads considered in structure. **7**
   b) Write a note on equilibrium. Explain the conditions of equilibrium used in beam with an example. **8**

8. Evaluate reaction for the truss shown below. **15**



SLR-V – 40

Seat No.	

B.Arch. (Sem. – VI) Examination, 2014
BUILDING CONSTRUCTION AND MATERIALS – VI

Day and Date : Tuesday, 2-12-2014 Max. Marks : 50
Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Make suitable assumptions **wherever** necessary and mention it in your answer books.*
*2) Figures to **right** indicate **full** marks.*

1. Fill in the blanks : **5**
   a) Types of plastics are thermoplastic and _____
   b) Name any one type of Varnish _____
   c) Name any one market form of steel _____
   d) Solution of resins prepared in alcohol, oil or _____ is varnish.
   e) _____ defect caused by the water vapour which is trapped behind the painted surface.

2. Design a curtain wall in glass for a car showroom. Size of facade wall is 15.00 × 8.00 m. Draw plan, elevation and section (Specify the material used). Use suitable scale and show any two fixing details. **15**

3. Write short notes **(any 3)** : **15**
   a) Cladding materials
   b) Hinged joints in R.C.C. footing
   c) Precast building components
   d) Ferrocement.

4. Enumerate general properties and uses of plastics. **15**

   OR

4. Explain objectives and characteristics of varnish. **15**

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SLR-V – 41

Seat No.	

B.Arch. (Semester – VI) Examination, 2014
THEORY OF STRUCTURES – VI

Day and Date : Thursday, 4-12-2014 Max. Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Q. **1** and Q. **3** are **compulsory**.*
*2) Solve **any two** questions from **remaining**.*
*3) **Right** sketch indicates **full** marks.*

1. i) The minimum and maximum % of steel in column as per IS 456-2000 is _____ **10**

a) 0.8 to 4% b) 0.8 to 6%
c) 1% to 4% d) 1% to 6%

ii) Upward soil pressure in footing

a) $\frac{Pu}{\text{Area of footing}}$ b) $\frac{Pu}{SBC}$

c) $\frac{Pu}{UBC}$ d) None of above

iii) If (ly/lx) ratio is greater than '2'. Design _____ slab.

a) 1 way b) 2 way
c) cantilever d) continuous

iv) In over reinforced section _____

a) $xu > xu_{max}$ b) $xu = xu_{max}$
c) $xu < xu_{max}$ d) None of above

v) The effective width of flange for T beam bf _____

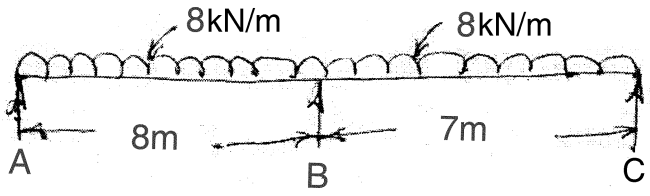
a) $\frac{w}{12} + bw + 6Df$ b) $\frac{w}{6} + bw + 6Df$

c) $\frac{w}{6} + bw + 12bf$ d) $\frac{w}{6} + bw + 18bf$

P.T.O.

2. a) State and explain 3-moment theorem. **6**

   b) Determine SFD and BMD. **14**

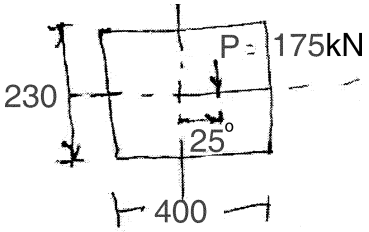


   c) Write down the advantages and disadvantages of fixed beam. **5**

3. a) Draw detail sketch of L Beam and write note on it. **6**

   b) Design square column for 1000 kN factured load **14**
   a) Use M_{20} and Fe 415 steel
   b) Apply all checks
   c) Draw detail sketch.

4. a) A rectangular column of 230 × 400 mm caries a axial wall of 175 kN at an eccentricity of 25 mm. Calculate maxm. and minimum stress in section. **8**



   b) Design a Cantilever slab of span 2.5 m. Loading on slab is as follow : **12**
   a) Live load = 5 kN/m^2
   b) Floor finish load = 0.8 kN/m^2
   Use M_{20} and Fe 250.

   c) Write down the design steps for one-way slab in detail as per IS-456-2000. **5**

5. a) Design a square footing for 300 × 300 mm column carrying an axial load of 800 kN. The safe bearing capacity of soil is 240 kN/m^2. Use M_{20} and Fe 415 steel .Check for following conditions **20**
   a) One way action of shear
   b) Two way action of shear and
   c) Bending moment.

   b) Write down the types of footing in detail. **5**

SLR-V – 42

Seat No.	

B.Arch. (Semester – VI) Examination, 2014
BUILDING SERVICES – IV

Day and Date : Saturday, 6-12-2014 Max. Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Question No. **1** is **compulsory.** Solve **any six** questions from the remaining.*
*2) Figures to the **right** side indicates **full** marks.*
*3) Draw **neat** sketches wherever necessary.*

1. Fill in the blanks : **8**

   1) B.O.D. indicates _____

   2) Name any one Biological impurity in the sewage_____

   3) _____filters are also known as Percolating filters.

   4) Putrescible waste is termed as_____

   5) In _____system of sewerage two sets of sewers are laid.

   6) Name any one primary sewage treatment process_____

   7) The residual remaining after incineration of waste or burning of waste is known as _____

   8) Name any one type of privy_____

2. A) What is mean by the term refuse ? How it is collected ? **8**

   B) Define C.O.B. and state its significance in sewage analysis. **4**

P.T.O.

3. Write short notes on the following **(any 3)** : **12**

   1) Ventilation of sewers

   2) Disposal of refuse by plumbing into sea

   3) Oxidation pond

   4) Hazardous waste.

4. Draw a general layout of “sewage treatment plant” and explain the purpose of each component. **12**

5. Draw plan and section of septic tank. Explain the working of the same. **12**

6. A) What is mean by “vermi composting” ? Discuss its suitability. **8**

   B) Explain the term “social waste management”. **4**

7. A) State advantages and disadvantages of incineration method of disposal of waste. **6**

   B) Differentiate between combined system of sewerage and separate system of sewerage. **6**

8. Explain with neat sketch “Refuse Chute”. **12**

SLR-V – 43

Seat No.	

B.Arch. (Semester – VI) Examination, 2014
ACOUSTICS

Day and Date : Monday, 8-12-2014 Max. Marks : 80

Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Q. **1** is **compulsory**.*

*2) Solve **any three** out of **remaining**.*

*3) Make suitable assumption **wherever** required.*

1. A) Explain the Sabine's formula to calculate RT with necessary sketches explain and calculate the absorption required for drama theatre of capacity 1000 considering volume 3.5 M^3/person. RT = 1.25 sec. Consider the following materials with their coefficient of absorption.

   Sitatex board = 0.40

   Empty seats (upholstered) = 0.26

   Occupied seats (upholstered) = 0.32

   Armstrong board = 0.65

   Carpet = 0.37

   Glass wool = 0.15 **27**

1. B) Fill in the blanks : **8**

   1) Velocity of sound C = _____ (give formula)

   2) Reverberation time is expressed in _____

   3) Graphical representation of frequencies of SPL is called _____

   4) Echoes are quite pronounced in _____ structures.

   5) Octave bands are _____ bands.

   6) More absorption, lower is the _____

   7) Sound is the form of energy that travels in the form of _____

   8) Voice, tone and _____ depends on physical nature of vocal cord.

P.T.O.

2. Explain noise control in ventilation system. **15**

3. Explain sound amplification system. **15**

4. Explain open air theatre designing and acoustical consideration with proper sketches. **15**

5. Write short notes on **any three** : **15**
   1) Prefabricated materials
   2) Whispering gallery
   3) Double glazed window
   4) Sound refraction
   5) Echoes.

SLR-V – 44

Seat No.	

B.Arch. (Semester – VI) Examination, 2014
URBAN AND REGIONAL PLANNING – I

Day and Date : Wednesday, 10-12-2014 Max. Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

Instructions *: i) Q. No.* ***1*** *is* ***compulsory****.*
ii) Attempt ***any 6*** *from remaining questions.*
iii) Draw neat sketches ***wherever*** *necessary.*

1. Fill in the blanks : **(1×8=8)**
   a) Clarence stein prepared the town plan for _____ city in New Jersey.
   b) Chandigarh city was planned by _____
   c) T. D. R. stands for _____
   d) Separate path marked with alternate black and white strip provided for pedestrians at suitable distance from the junction is known as _____
   e) F.S.I. is the ratio of _____
   f) In traffic survey O.D. stands for _____
   g) The width of the national highway is _____
   h) In Chandigarh city, each sector is _____ long and _____ width.

2. Explain the principles and concepts advocated by "Sir Pattrick Geddees" ? **12**

3. Explain with neat sketches the planning principles of "Bhuvaneshwar". **12**

4. Explain how socio-cultural aspects influence the development of any town. **12**

5. Explain in detail with their advantages and disadvantages any two types of zoning. **12**

6. Explain the measures or precautions to be taken against formation of slums. **12**

7. Explain the principles and factors to be considered while designing road junctions. **12**

8. Write short notes on **(any 3)** : **(4×3=12)**
   a) Vertical growth
   b) Land use
   c) Row of houses and flats
   d) Radial street system.

_____

SLR-V – 45

Seat No.	

B.Arch. (Semester – VI) Examination, 2014
ESTIMATING, SPECIFICATION AND COSTING – I

Day and Date : Friday, 12-12-2014 Max. Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

N. B. *: 1) Q.* ***1*** *to Q.* ***4****,* ***all*** *questions are* ***compulsory****.*
2) ***Use*** *of calculators are* ***allowed****.*
3) Figures to ***right*** *indicate* ***marks****.*
4) Assume ***any*** *suitable data* ***if necessary****.*

1. Figure shown in building plan with necessary details, calculate the quantities of given items and enter them in the standard measurement sheets – 5 times @ 9 marks **each**. **45**
   a) Uncoarsed rubble masonry in foundation and plinth.
   b) Brick masonry in superstructure.
   c) R.C.C. slab.
   d) External plaster.
   e) Flooring.

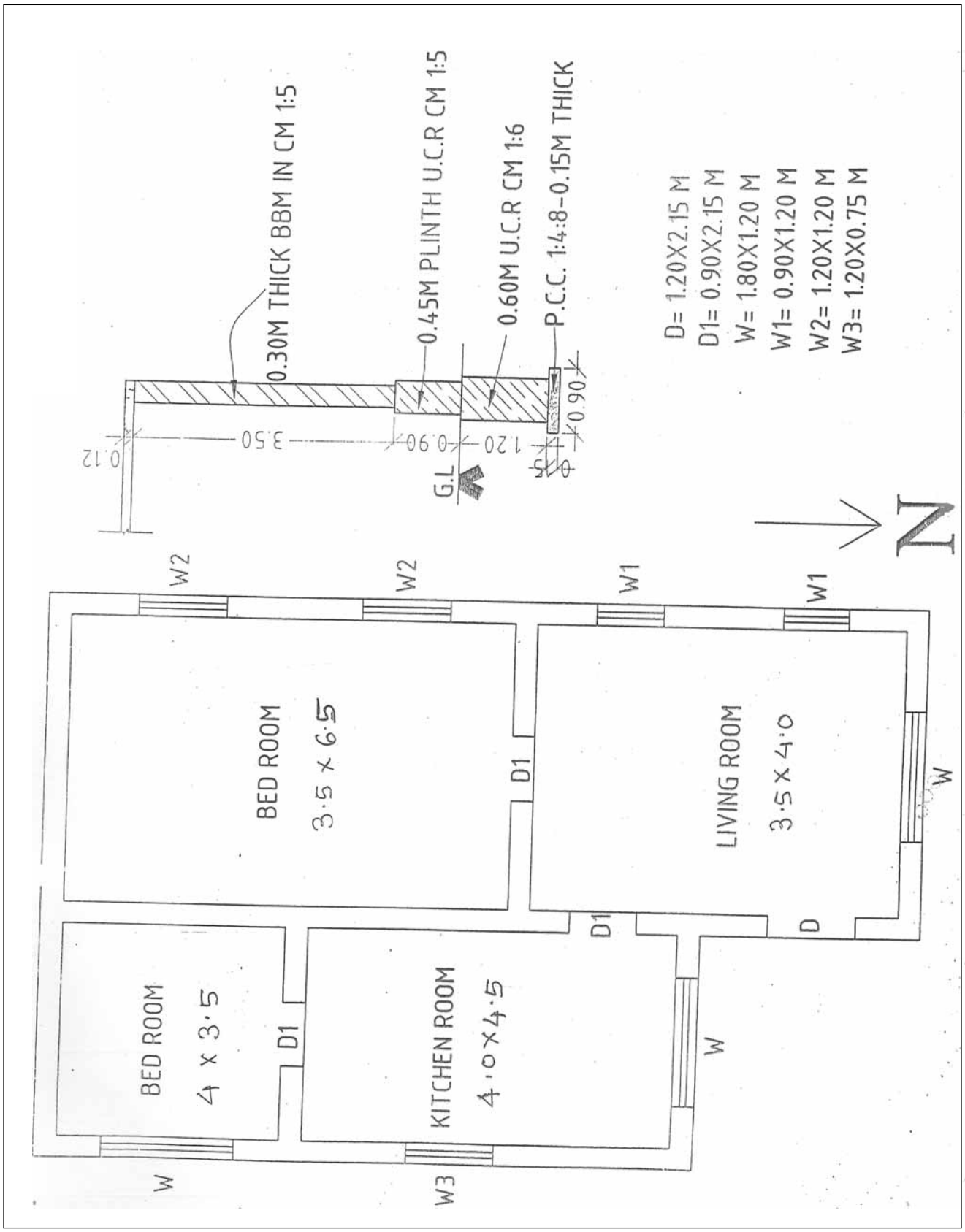
2. Prepare an abstract sheet of all the above items in Question No. 1. **10**
   1) Brick masonry – Rs. 2,500/m^3
   2) R.C.C. slab – Rs. 7,000/m^3
   3) External plaster – Rs. 500/m^2
   4) V.C.R. masonry in foundation and plinth – Rs. 2,000/m^3
   5) Flooring – Rs. 800/m^2.

3. Calculate Rate Analysis : **18**
   1) Coursed Rubble masonry in superstructure in cm 1 : 6.
   2) 1 : 4 : 8 concrete.
   3) Cement pointing in cm 1 : 2.

4. State the units of measurements : **7**
   i) Door/window frames in wood work.
   ii) Rolled steel joists, angles etc.
   iii) Rolling shutter.
   iv) Corrugated iron sheet roofing.
   v) Eaves board.
   vi) Moulding string course.
   vii) Laying sanitary/water pipeline.

P.T.O.

SLR-V – 45


0.30M THICK BBM IN CM 1:5
0.45M PLINTH U.C.R CM 1:5
0.60M U.C.R CM 1:6
P.C.C. 1:4:8-0.15M THICK
0.12
3.50
0.90
1.20
0.90
G.L
D= 1.20X2.15 M
D1= 0.90X2.15 M
W= 1.80X1.20 M
W1= 0.90X1.20 M
W2= 1.20X1.20 M
W3= 1.20X0.75 M
N
W2
W2
W1
W1
BED ROOM
3·5 x 6·5
D1
LIVING ROOM
3·5 x 4·0
W
D1
D
BED ROOM
4 x 3·5
D1
KITCHEN ROOM
4·0 x 4·5
W
W
W3

SLR-V – 46

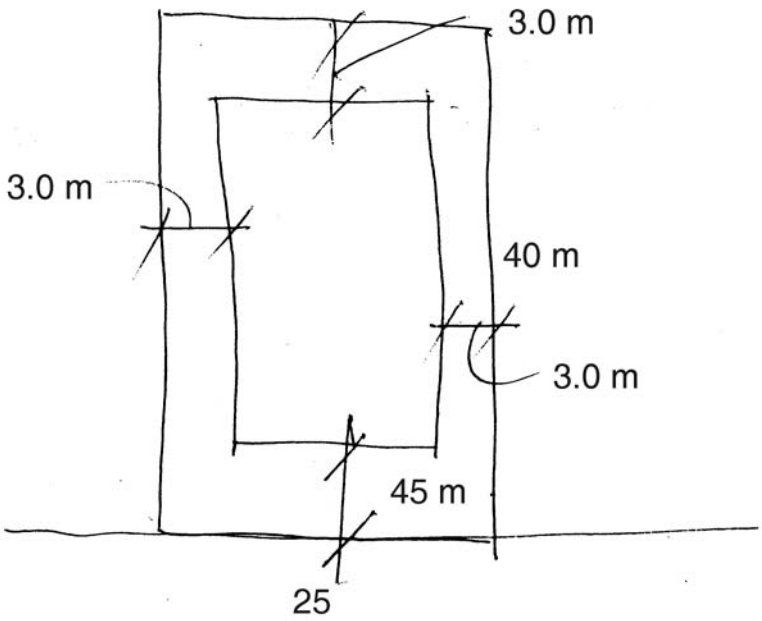
Seat No.	

B.Arch. (Semester – VII) Examination, 2014
ENVIRONMENTAL DESIGN

Day and Date : Monday, 1-12-2014 Max. Marks : 100
Time : 3.00 p.m. to 6.00 p.m.

N.B. *: 1)* ***Assume*** *suitable data* ***wherever*** *necessary.*
2) Draw ***neat*** *sketches* ***where*** *necessary.*
3) Draw/solve ***5*** *questions from the given* ***7****.*

1. What is F.S.I. ? Why is it so important ? **20**
2. Describe the types of housings that you know. **20**
3. What is environmental design ? What is meant by reduce, sense and simple ? **20**
4. Describe the surroundings of your college with the help of sketches. **20**
5. Suggest a volumetric study for F.S.I. 1.5 for a supermarket building for the following site. **20**



18.0 M ROAD

6. Describe any 1 ecofriendly building that you know in detail. **20**
7. What provisions would you make for a neighbourhood of 10,000 people. **20**

SLR-V – 47

Seat No.	

B.Arch. (Semester – VII) Examination, 2014
BUILDING CONSTRUCTION AND MATERIALS – VII

Day and Date : Wednesday, 3-12-2014 Max. Marks : 50
Time : 3.00 p.m. to 6.00 p.m.

Instructions : *i) Make suitable assumptions* ***wherever*** *necessary.*
ii) Draw ***neat*** *sketches.*

I. Fill in the blanks : **(1×5=5)**

i) Portal frames with a span of 36.0 m – 60.0 m are defined as _____

ii) _____ is a 3D truss like assembly.

iii) Pitched roof should be removed by _____ demolition.

iv) The size of the stretcher lift is _____

v) Concrete mix used in underpinning is of ratio _____

II. Design and specify the type of lift for 5 persons in a residential apartment building of ground-floor and five upper-floor. Draw plan, section and enlarged details of machine room pit and lift car. **15**

III. a) Describe any 3 materials to be used for false ceiling. **10**

b) Explain with sketches the method of construction with any one material. **5**

OR

c) Explain the properties and application of "thermal and sound insulating materials" (each one). **15**

IV. Write short notes on (**any 3**) : **(5×3=15)**

a) Mastic sealants

b) Fire proofing materials

c) Demolition ball techniques

d) Strutting

e) Shells.

_____

SLR-V – 48

Seat No.	

B.Arch. (Semester – VII) Examination, 2014
THEORY OF STRUCTURE – VII

Day and Date : Friday, 5-12-2014 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

***Instructions** : 1) **Use** of scientific calculators and IS **456 allowed**.*
*2) Q. **1** and Q. **5 compulsory**, from the remaining question solve (**any 2**) from Section **I** and **II**.*
*3) Figures to the **right** indicates **full** marks.*

SECTION – I

1. Choose the correct option for the following : **10**

   1) The ratio of span/effective depth = _____ is for cantilever slabs.
      a) 7 b) 2 c) 20

   2) Gird slab is economical for span upto
      a) 5 to 10 m b) 8 to 25 m c) 10 to 25 m

   3) For design of steel structure _____ code of practice used.
      a) IS 456 b) IS 3370 c) IS 800

   4) _____ types of foundation is used where bearing capacity is low and their is chance of differential settlement.
      a) Raft b) Pile c) Shallow

   5) _____ piles are used where the loads are not very heavy.
      a) Friction b) Undreamed c) Sheet

2. Write a note on : **15**

   a) Flat slab

   b) Waffle slab

   c) Hallow blocks slabs.

P.T.O.

3 a) Write in detail about the efficiency of the pile. **8**

b) Write a note on deep foundation. Also explain pile foundation with neat sketch. **7**

4. Design a circular water tank with flexible connection at base for capacity of 2,50,000 lit. The tank rest on firm level ground. The height of the tank including a free board of 200 mm should not exceed 3.0 m the tank is open at top. Use M 25 and Fe 415. **15**

SECTION – II

5. Write a note on : **16**

a) Shells

b) Folded plates

c) Space frames

d) Geodesical dome.

6. a) State and explain the method of prestressing. **6**

b) Highlight the design step involved in the design of plate girder. **6**

7. The section of a concrete beam is 300 × 750 mm. The beam carries a UDL of 22kN/m length over a effective span of 11m. An effective prestressing force of 1750 kN is applied at an eccentricity of 125 mm. **12**

8. a) Write in detail precaustion should be taken while planning a structure in earthquake prone area ? **6**

b) Write a note on loss occur during prestressing. **6**

———————

SLR-V – 49

Seat No.	

B.Arch. (Semester – VII) Examination, 2014
ADVANCED ESTIMATING SPECIFICATION AND COSTING – II

Day and Date : Tuesday, 9-12-2014 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

N. B. : *1) Q.* ***1*** *to Q.* ***5 all*** *are* ***compulsory****.*
2) ***Use*** *of calculators is* ***allowed****.*
3) Assume ***any*** *suitable data* ***if necessary****.*

1. a) From the given plan/sketch, calculate the following quantities of given items : **30**
   i) Footings
   ii) Columns upto slab level
   iii) R.C.C. Slab
   iv) Internal plaster.
   b) Prepare abstract sheet of above items using following item rates : **10**
   i) Footing – Rs. 7,000/m^3
   ii) Columns – Rs. 6,500/m^3
   iii) R.C.C. Slab – Rs. 7,000/m^3
   iv) Internal plaster – Rs. 400/m^2.

2. Explain the following : **10**
   i) Approximate estimate
   ii) Detailed estimate
   iii) Revised estimate.

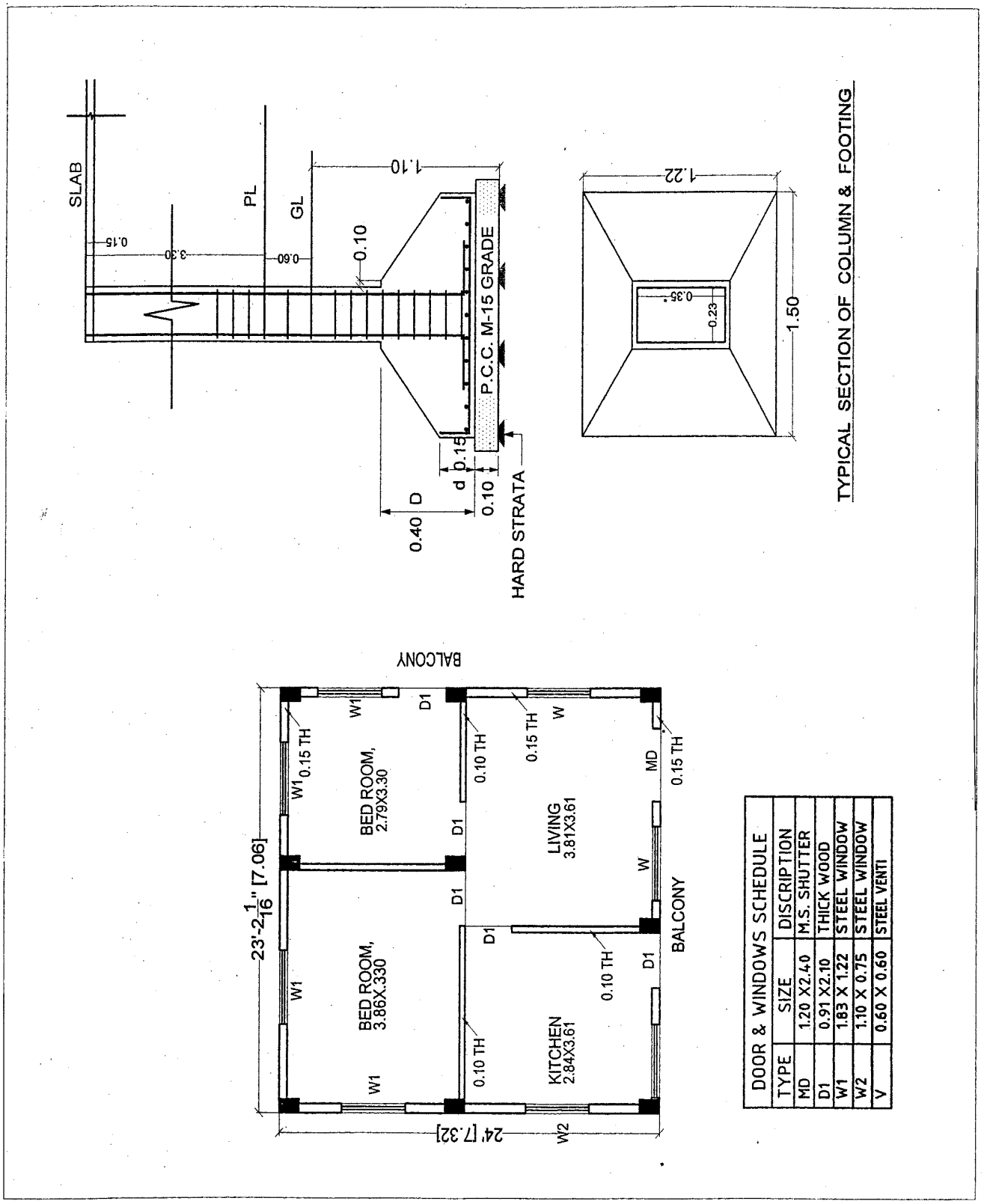
3. Explain : **10**
   i) Lumpsum contract
   ii) Item rate contract
   iii) Labour contract.

4. Explain purposes and methods of valuations. **10**

5. Prepare detailed specifications on Burnt Brick Masonry. In cm 1:5 for superstructure. **10**

P.T.O.

SLR-V – 49



DOOR & WINDOW'S SCHEDULE		
TYPE	SIZE	DISCRIPTION
MD	1.20 X2.40	M.S. SHUTTER
D1	0.91 X2.10	THICK WOOD
W1	1.83 X 1.22	STEEL WINDOW
W2	1.10 X 0.75	STEEL WINDOW
V	0.60 X 0.60	STEEL VENTI

SLR-V – 5

Seat No.	

B.Arch. (Semester – I) (Old) Examination, 2014
HISTORY OF ARCHITECTURE – I

Day and Date : Friday, 5-12-2014 Total Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

***Instructions** : 1) Figures to the **right** indicates **full** marks.*
2) Question numbers should be clearly written in the answers books.
*3) Draw **neat** sketches **wherever** necessary.*
*4) Q. No. **1** is **compulsory.** Solve **any 6** questions from the remaining.*

1. Fill in the blanks : **8**

   1) Pecking man also known as _____
   2) Mohenjodaro was located on the bank of river _____
   3) The founder of Maurayan dynasty was king _____
   4) Hanging gardens in the Babylon city was built buy the king_____
   5) The author of the Arthashastra was _____
   6) Name any one metal used during ancient time period_____
   7) Palace of Sargon II in Khorshabd built by the king_____
   8) In Egyptian temple clerestory light is provided in _____hall.

2. Write short notes with relevant sketches on **any three** : **12**

   1) Lion Gate
   2) Sphinx
   3) Neanderthal Man
   4) Ziggurat.

P.T.O.

3. Explain various stages in the human settlements of prehistoric period. **12**

4. Describe principal elements of the pyramid of Cheops. **12**

5. Discuss main features of palace of persepolis. **12**

6. Explain with neat sketch “Temple of Juno Sospito” and architectural characters of Etruscan architecture. **12**

7. Write a detailed note on Garden city of Patliputra. **12**

8. Give a brief account on religion of the following people :

   a) Vedic people

   b) Babylonian people.

SLR-V – 50

Seat No.	

B.Arch. (Semester – VII) Examination, 2014
ADVANCED ARCHITECTURAL DESIGN – VII

Day and Date : Thursday, 18-12-2014, Friday, 19-12-2014, Saturday, 20-12-2014 — Max. Marks : 150

Time : 10.00 a.m. to 4.00 p.m.

Instructions *: 1) The candidates are required to submit the concept and rough scheme and final presentation at the end of the day.*

2) ***Assume*** *suitable data* ***wherever*** *necessary.*

POLICE COMMISSIONER OFFICE AT SOLAPUR.

The State Govt. wishes to build a new Police Commissioner office building keeping in mind the new role and challenges as well as image building for todays police force.

Architectural programme :

1) Lobby and enquire desks ⟶ 100 sq.m

2) Commissioner Office (1 no.)
   - a) C.P. chamber 75
   - b) Office 75 ⟶ 180 sq.m
   - c) Waiting 30

3) Asst. Commissioner Office (3 nos.)
   - a) ACP chamber → 50
   - b) Office → 75 ⟶ 150 sq.m ⟶ 450 sq.m
   - c) Waiting → 25

4) Arms and Ammunition Room ⟶ 50 sq.m

P.T.O.

5) Wireless dept. ⟶ 50 sq.m

6) Record Room ⟶ 150 sq. m

7) Department office (5 nos.)

a) P.I. chamber – 35
b) P.S.I. chamber – 25
c) Office ⟶ 75
d) Toilets ⟶ adequate
e) Waiting ⟶ adequate

} ⟶ (150×5) = 750 sq.m

(Passport office
crime branch, special branch
commercial, cyber crime)

8) Parking for visitors and force.

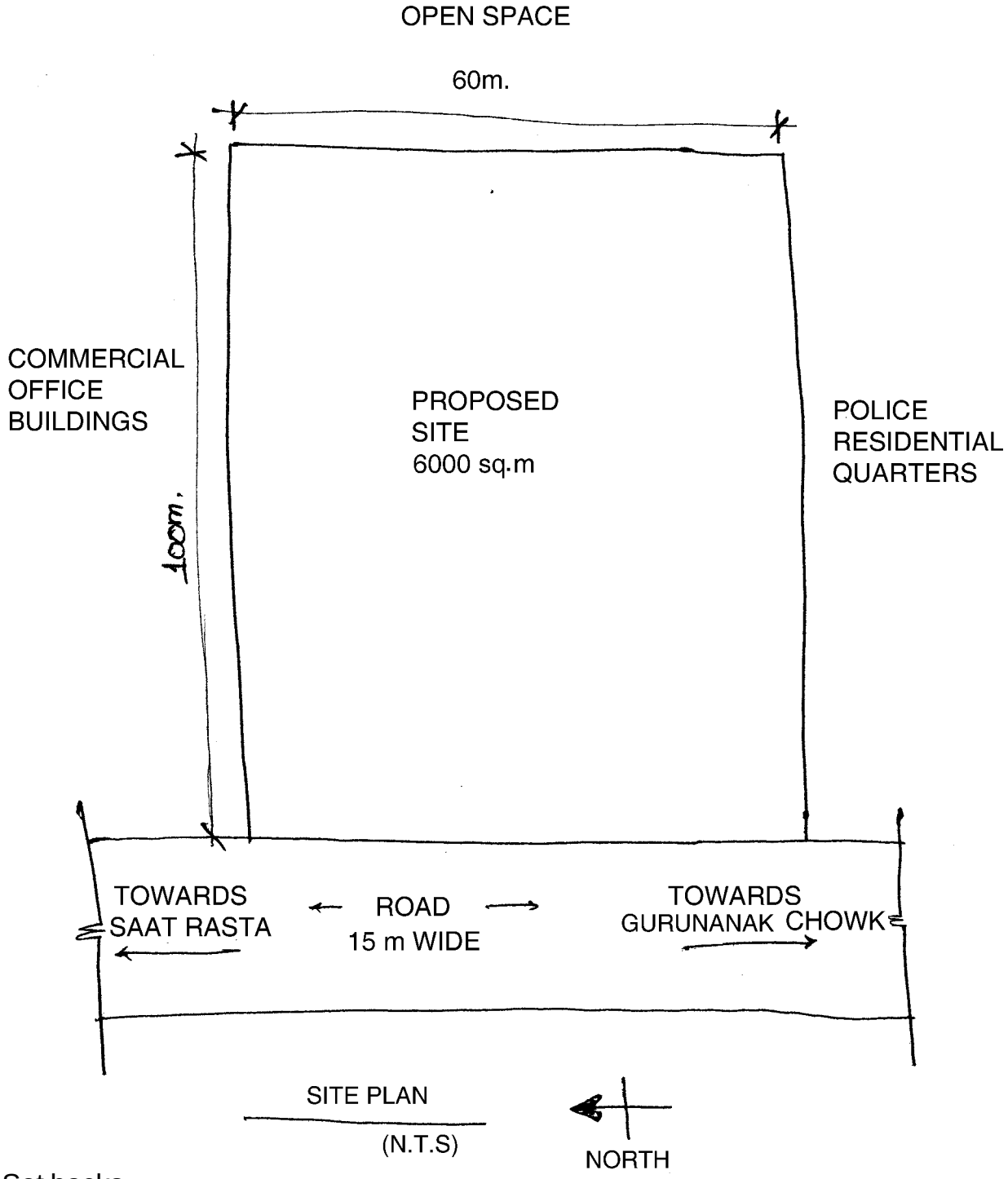
(Charlee vans, Jeeps, Vajra van, cars, two wheelers ⟶ Adequate

Max. 30% of round coverage is permissible and building scope is G + 3 only.

Drawing requirements :

1) Concept (not to scale) **15**
2) Site plan (1 : 200) **25**
3) All floor plants (1 : 100) **50**
4) min 2 sections (1 : 100) **25**
5) min and elevation (1 :100) **20**
6) 3D view (not to scale) **15**

POLICE COMMISSIONER OFFICE AT SOLAPUR



Set backs

1) Front → 15 mts.
2) Rear and sides → 6 mts.

SLR-V – 53

Seat No.	

B.Arch. (Semester – VIII) Examination, 2014
PROFESSIONAL PRACTICE – II

Day and Date : Tuesday, 2-12-2014 Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

***Instructions** : I) Question No. **1** and **2** are **compulsory**.*
*II) **Draw** neat sketches **wherever** necessary.*
*III) Answer **any five** from **remaining** questions.*

1. A) Fill in the blanks : **5**

a) I.I.A. stands for _____

b) Normally EMD is _____ of estimated cost put to tender.

c) In arbitral tribunal, sole arbitrator means _____ number of architects.

d) F.A.R. means _____

e) Land Acquisition Act was enacted by government of India in _____

B) Answer in **one** sentence : **5**

a) What is an easement ?

b) Define tender.

c) What is meant by arbitral award ?

d) What is meant by repairs ?

e) What are the different types of competition ?

2. Write short note **(any four)** : **20**

a) Duties of an architect.

b) Lumpsum tender.

c) Duties of arbitral tribunal.

d) Dominant and servient owner.

e) Architectural copyright.

P.T.O.

3. Explain the scope and schedule of services offered by an architect. **10**

4. Differentiate between item rate tender and lumpsum tender. **10**

5. Explain in detail arbitration, mediation, conciliation. **10**

6. Explain in brief nature of architectural competitions. **10**

7. What is an easement ? Explain the characteristics of easement. Define dominant and servient owner. **10**

8. Explain in detail building bye-laws with respect to residential building. **10**

SLR-V – 6

Seat No.	

B.Arch (Semester – II) (New) Examination, 2014
ARCHITECTURAL GRAPHICS – II

Day and Date : Tuesday, 2-12-2014 Total Marks : 100
Time : 10.00 a.m. to 1.00 p.m.

Instructions *: 1)* ***All*** *the questions are* ***compulsory****.*
2) Retain ***all*** *construction lines.*
3) Figures to ***right*** *indicates* ***full*** *marks.*
4) ***Five*** *marks are reserved for neatness and* ***good*** *drafting.*
5) ***Make*** *suitable assumptions* ***wherever*** *necessary.*

1. A plane cuts an object as shown in the figure "A" at xx. Draw plan and sectional elevations. (front and side) of the object. (scale – 1.1). **35**

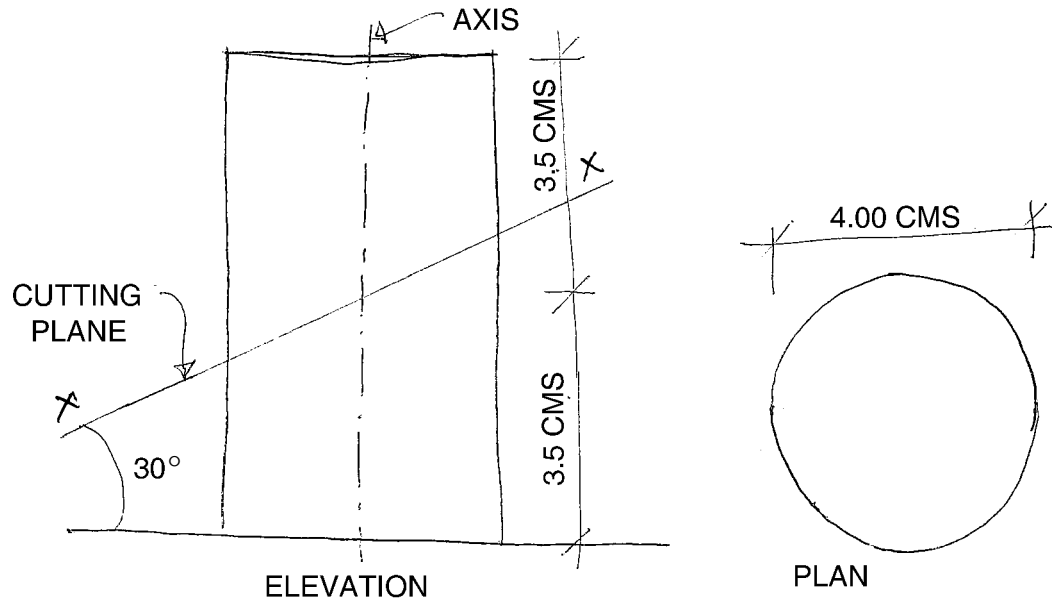


Fig. A

2. Draw development of surface of the cut object in figure "A".

OR

Draw the true cut portion of the same object in fig. "A". **15**

P.T.O.

3. Draw the development of surface of the following objects in fig. "B". **15**

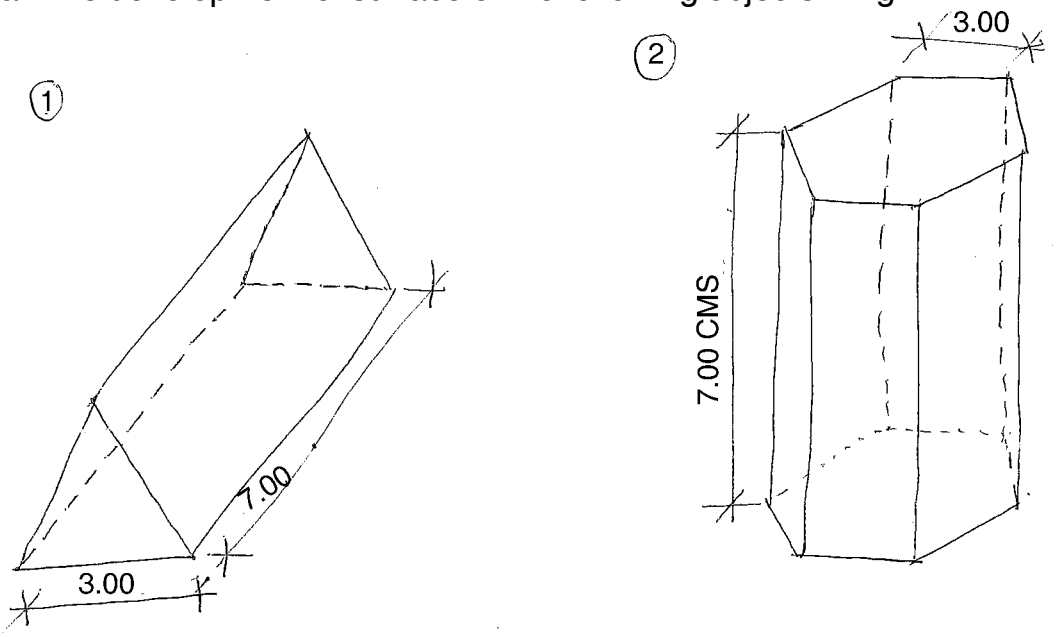


Fig. "B"

4. Draw the isometric view in isometric scale of the object in figure "C". **15**

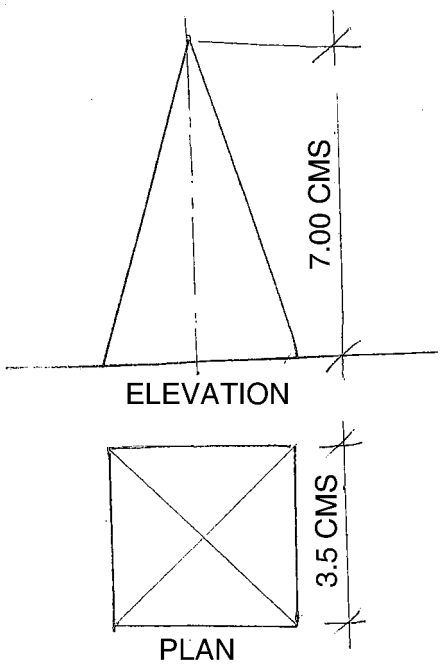


Fig. "C"

5. Mention the no. of surfaces of the following objects in fig. D. **10**

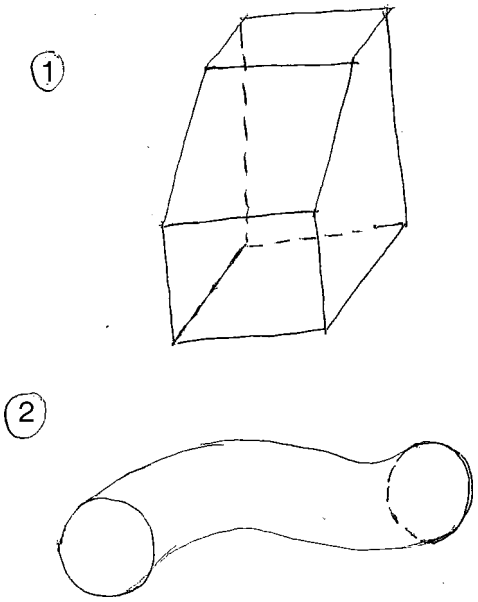


Fig. “D”

SLR-V – 7

Seat No.	

B.Arch. (Semester – II) (New) Examination, 2014
BUILDING CONSTRUCTION AND MATERIAL – II

Day and Date : Thursday, 4-12-2014 Max. Marks : 50
Time : 10.00 a.m. to 1.00 p.m.

Instructions *: i) Q. No.* ***1*** *and Q. No.* ***2*** *is* ***compulsory****.*
ii) Solve ***any three*** *from the* ***remaining****.*
iii) Draw ***neat*** *sketches* ***wherever*** *necessary.*

1. Draw plan, section of couple-close roof for a span 4.20 m. Show enlarged details. **15**

2. Fill in the blanks : **5**
   i) The inclination of sides of a roof to the horizontal plane is known as _____
   ii) _____ are the wedge shaped units forming the course of an arch.
   iii) Horizontal upper portion of a step is known as _____
   iv) _____ is a horizontal member employed to sub divide a window vertically.
   v) A right angled columnar projection from a wall or a pier is known as a _____

3. Explain precautions to be taken while handling lime. **10**

4. Describe the impurities present in sand and the process of removing it. **10**

5. Classify various types of arches and describe any two with neat sketches. **10**

6. Define holdfast, transom, horn, shutter, lock rail. **10**

SLR-V – 8

Seat No.	

B.Arch. (Sem. – II) Examination, 2014
THEORY OF STRUCTURE – II (New)

Day and Date : Saturday, 6-12-2014 Max. Marks : 80

Time : 10.00 a.m. to 1.00 p.m.

N. B. *: 1) Q. **1** and Q. **2** is **compulsory**.*
*2) Solve **any 2** from remaining question.*
*3) **Use** of scientific calculator is **allowed**.*
*4) Figures to the **right** indicate **full** marks.*

1. Select correct option for the following :

a) Moment of inertia for the square section is _____

i) $\frac{b^4}{12}$ ii) $\frac{b^3}{24}$ iii) $\frac{b^2}{24}$ iv) None of above

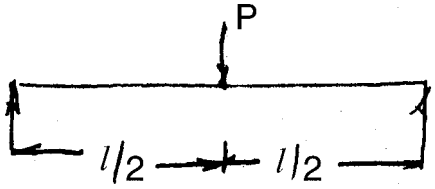
b) The ratio of direct stress to volumetric strain is known as

i) Shear strain ii) Bulk modulus
iii) Modulus of elasticity iv) None of above

c) Moment of inertia is also known as

i) First moment of area ii) Second moment of area
iii) Both iv) None

d) The maximum BM for below figure is



i) $\frac{Pl}{2}$ ii) $\frac{Pl^2}{8}$ iii) $\frac{Pl^2}{2}$ iv) $\frac{Pl}{4}$

e) If force is 100 kN and cross sectional area is 50 mm^2 then stress is

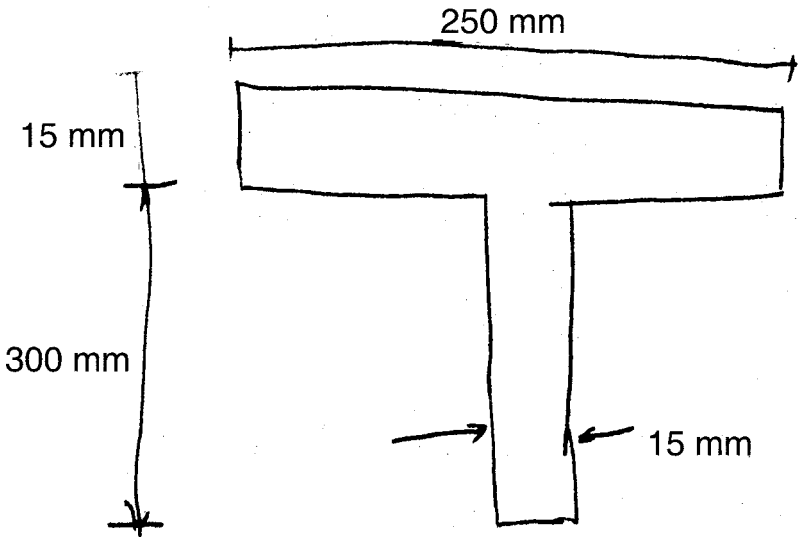
i) 2000 N/mm^2 ii) 2000 N/m^2
iii) 200 N/mm^2 iv) None of above

P.T.O.

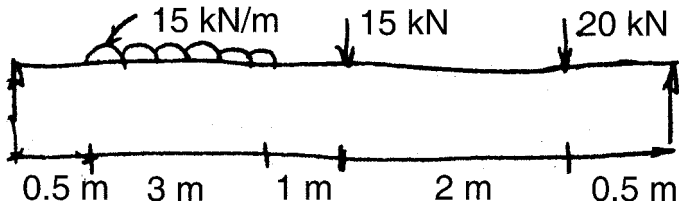
2. What do you mean by stress ? Explain the type of stresses in detail. Also explain stress strain graph. **10**

3. A metal bar 50 mm × 40 mm thick in section is subjected to axial compression of 600 kN. Convection was found to be 0.75 mm for length of 300 mm whereas increase in thickness was 0.05 mm. Find the value of Poisson ration and also find E, K and G. **20**

4. Calculate centroid of the following **20**



5. Draw SFD and BMD for the beam **20**



6. a) Find the polar MI of a circular section of 50 mm ϕ and also find minimum radius and gyration. **12**

   b) What you mean by SFD and BMD ? Explain the SS beam with UDL as a example. **8**

SLR-V – 9

Seat No.	

B.Arch. (Semester – II) Examination, 2014
HISTORY OF ARCHITECTURE – II (New)

Day and Date : Monday, 8-12-2014 Max. Marks : 80
Time : 10.00 a.m. to 1.00 p.m.

Instructions *: 1) Question No.* ***1*** *is* ***compulsory****.*
2) Solve ***any six*** *questions from the remaining.*
3) Draw ***neat*** *sketches* ***wherever*** *necessary.*

1. Fill in the blanks : **8**
   1) Name any one Greek order _____
   2) Hindu temple evolved during _____ period.
   3) Free standing monolith rock cut rathas found in _____
   4) Open court in church is termed as _____
   5) The great church hagia sophia located in the city _____
   6) _____ was the palatical public bath of imperial Rome.
   7) _____ are the symbols of Buddhist Nirwana.
   8) Entablature consists of architrave, _____ and cornice.

2. Draw neat sketch plan, section or elevation and explain St. Peter Rome (Old). **12**

3. Draw neat sketch (Plan and elevation) of Hagia Sophia and write note on the same. **12**

4. Explain "Temple of Parthenon at Athens" with neat sketch (Plan and elevation). **12**

5. Explain with neat sketch any three Roman orders. **12**

6. Explain with the help of sketch "Chaitya hall at Karle" in Buddhist rock cut architecture. **12**

7. Write shorts note on **any three** : **12**
   A) Theatre at epidarus
   B) Draupadi ratha
   C) Vihara No. 1 at Ajantha
   D) Roman cross vault.

8. Write detailed note and draw neat sketch on any one Chalukyan temple at Aihole. **12**

_____