Seat No.

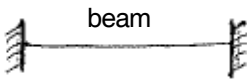### B.Arch. (Semester – I) (New CBCS) Examination, 2017
THEORY OF STRUCTURE – I

Day and Date : Thursday, 4-5-2017　　　　　　　　　　　　Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) *Use of Scientific Calculator is allowed.*

2) *Q. No. **1** and **2** are **compulsory**. From remaining questions solve **any four**.*

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

4) *Assume **suitable** data **if** necessary.*

1. Select the **correct** option for the following :　　　　　　　　**8**

　　1) The given type of beam is

beam

　　　　A) Fixed　　　　　　　　　　　　B) Cantilever
　　　　C) Overhanging　　　　　　　　D) Simply supported

　　2) 1 GN force is equal to _____ N.
　　　　A) 10^9　　　　B) 10^4　　　　C) 10^6　　　　D) 10^3

　　3) When line of action of two or more forces on same plane they are _____
　　　　A) Collinear force　　　　　　　B) Non-Collinear force
　　　　C) Non-Concurrent force　　　　D) Coplanar force

　　4) Force is nothing but
　　　　A) Mass × Velocity　　　　　　B) Mass/velocity
　　　　C) Mass × Acceleration　　　　D) Mass/acceleration

2. Write a note on System of forces.　　　　　　　　　　　　**6**
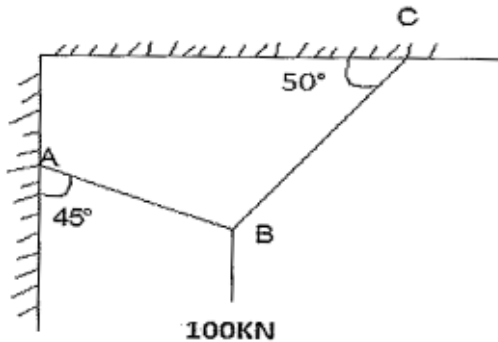
3. a) Write a note on law of Parallelogram of Forces.　　　　　**6**

b) Find forces developed in wires, supporting electric fixtures.　　　　　**8**

4. a) State and explain different types of Supports.　　　　　**6**

   b) Forces of 5, 6, 7, 8 & 9 N respectively are acting at one of the angular points of regular hexagon towards other five angular points taken in order. Find resultant of the system.　　　　　**8**

5. a) Explain in detail load bearing structure and framed structure.　　　　　**6**
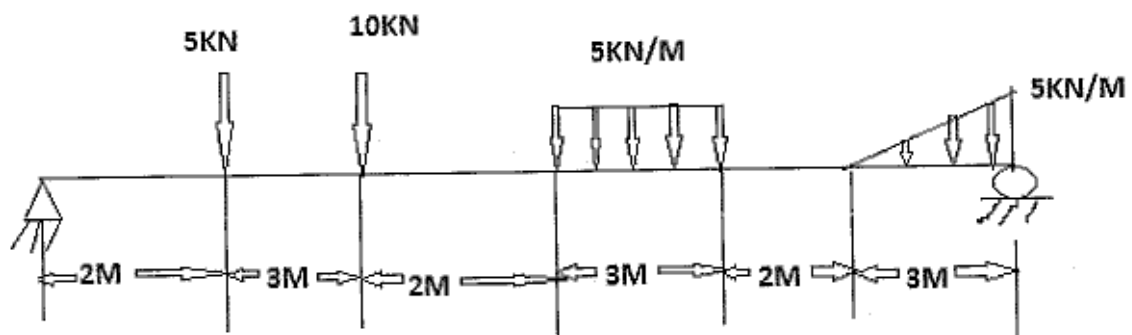
   b) Five forces 100, 200, 300, 400 and 600 N are acting at angles of $35°, 120°, 210°, 280°$ and $340°$ in anticlockwise direction from X-axis at a point, all are acting away from the point. Find resultant force.　　　　　**8**

6. a) Calculate Support Reactions.　　　　　**10**

   b) State and explain different types of beams.　　　　　**4**

7. a) What do you mean by perfect, imperfect and redundant frame ? Explain with example.　　　　　**6**

   b) State and explain different types of loads considered in analysis of structure.　　　　　**8**

————————————

Seat No.

B.Arch. (Semester – I) (CBCS Pattern) Examination, 2017
HISTORY OF ARCHITECTURE – I (New)

Day and Date : Saturday, 6-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

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

1. Fill in the blanks :   **7**

   A) The first metal to be used by man was _____

   B) Mohenjodaro was located on the bank of river _____

   C) In which language vedas were written _____

   D) The cradle of civilization was _____

   E) Name any one type of tomb structure in Egypt _____

   F) Name any one settlement in prehistoric period _____

   G) Mysterious sculptures in Egypt _____

2. Write short notes on **any three** :   **15**

   1) Oval hut.

   2) Great bath at Mohenjodaro.

   3) Kings chamber.

   4) Mouryan architecture.

P.T.O.

3. What is Stone Henge ? Explain with neat sketch. **12**

4. Sketch typical Vedic Village, vedic huts and houses, cow gate and explain the same. **12**

5. Sketch and explain architectural features of palace of persepolis. **12**

6. Explain with neat sketch the city of Babylon along with the architectural characters of West Asiatic period. **12**

7. Sketch and explain temple of Juno Sospito. **12**

_____

Seat
No.

B.Arch. (Semester – I) (Old-CGPA) Examination, 2017
THEORY OF STRUCTURE – I

Day and Date : Thursday, 4-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) **Use** of scientific calculator is **allowed**.

2) Q.No. **1** and **2** are **compulsory**. From remaining questions solve **any four**.

3) Figures to the **right** indicate **full** marks.

4) Assume **suitable** data **if** necessary.

1. Select the **correct** option for the following :   **8**

   1) Lamis theorem can be applied when the body is in

   A) Motion   B) Equilibrium

   C) No such limitation   D) None

   2) 1 GN force is equal to _____ N.

   A) 10^9 B) 10^4

   C) 10^6 D) 10^3

   3) When line of action of two or more forces on same line they are _____

   A) Collinear force   B) Non-Collinear force

   C) Non-concurrent force   D) Coplanar force

   4) Wind load is considered in case of _____

   A) Small structures   B) Tall structures

   C) All structures   D) None

2. Explain in detail law of parallelogram of forces.   **6**

3. a) What do you mean by resolution of forces ? Explain methods of resolution.   **6**

   b) Find resultant in magnitude and direction of the following forces acting away
      from a point.   **8**
      1) 250 N force acting 45° North of East.
      2) 200 N force acting 35° North of West.
      3) 200 N force towards West.
      4) 400 N force acting 30° towards West of South.

4. a) Two force of equal magnitude 'P' are acting at a point with angle.
      Calculate if R = P.   **6**

   b) Three forces A, B, C keeps body in equilibrium, angle between A and B is 80°,
      A and C is 130°. Calculate force A and B if C = 100KN.   **8**

5. Write a short note on (**7** marks **each**) :   **14**
   a) Load bearing structure and framed structure.
   b) Types of Loads considered in analysis of structures.

6. a) Evaluate support reactions from the beam shown below-UDL-200KN/M.   **10**
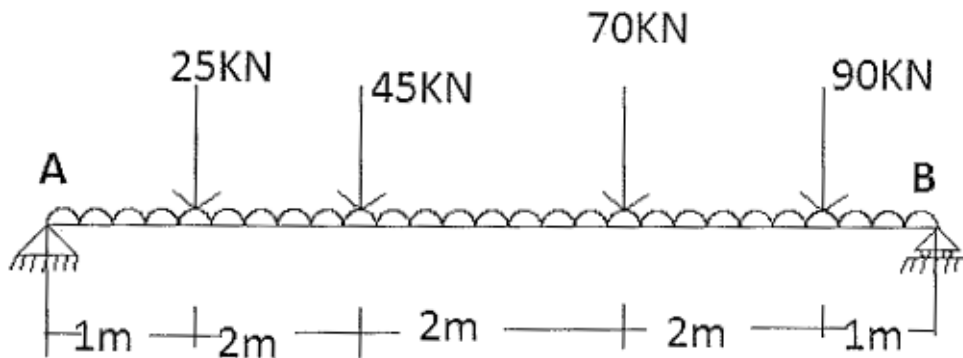
   b) State and explain Lami's therom.   **4**

7. a) What do you mean by perfect, imperfect and redundant frame ? Explain with
      example.   **6**

   b) Find forces developed in wires, supporting electric fixtures.   **8**

_____
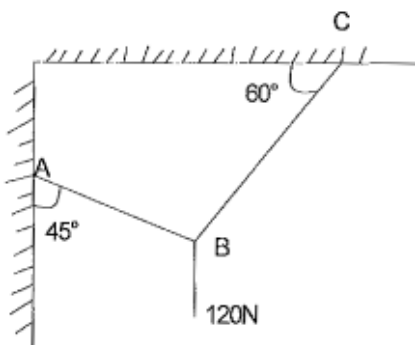
Seat No.

B.Arch (Semester – I) Examination, 2017
(Old CGPA Pattern)
HISTORY OF ARCHITECTURE – I

Day and Date : Saturday, 6-5-2017   Total Marks : 70

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

Instructions : 1) *Figures to **right** indicates **full** marks.*

              2) *Q. No. **1** and Q. No. **2** are **compulsory**.*

              3) *Solve **any four** questions from the remaining.*

              4) *Draw **neat** sketches **wherever** necessary.*

1. Fill in the blanks :   **7**

    1) Name any one important invention in Neolithic period _____

    2) Aryans called their teachers as _____

    3) Entrance gateway of Vedic village is termed as _____

    4) _____ civilization is termed as Queen of all Civilization.

    5) Prime Minister of Mauryan empire was _____

    6) Etruscans were termed as pre _____

    7) The land between river _____ and Euphrates is termed as Mesopotamia.

2. Write short notes on the following **(any 3)** :   **15**

    1) Sphinx

    2) Ziggurat at Ur

    3) Terra Amata.

    4) Apadna hall.

3. Explain influence of river Nile on formation and development of Egyptian Civilization. **12**

4. Explain in detail with neat sketch "Palace of Sargon" at Khorsabad. **12**

5. Describe city of Patliputra in Mauryan period. **12**

6. What are the architectural characters of Etruscan period ? Explain with suitable example. **12**

7. Mention various factors influencing civilization. **12**

_____

B.Arch. (Semester – II) (New) Examination, 2017
ARCHITECTURAL GRAPHICS – II (CBCS Pattern)

Day and Date : Friday, 5-5-2017   Max. Marks : 70

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

Instructions :   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.

5) **Assume suitable data not provided if any**.

1. A plane cuts the object as shown in fig. A at pp1. Draw plan and sectional elevation (front side) of the cut object (scale 1 : 1).   **25**

2. Draw true cut portion or development of surface of the cut object from Q. No. 1 of Fig. A (scale 1 : 1).   **10**

3. Draw the development of surfaces of the following objects in Fig. B (scale 1 : 1).   **10**

4. Draw the isometric view of the object shown in Fig. C.   **15**

5. Mention the number of surface of the following object as shown in Fig. D.   **5**

Note : All dimensions are in cm. only.

CUTTING PLANE

4.00

5.00 cms

45°

6.L.

ELEVATION

6.00 cms

PLAN

Fig. A, Q. 1 and Q. 2

AXIS 7.00
cms

5.5 cm dia

AXIS 8 cm

Fig. B, Q. 3

2.00

4.00 cms

2.00

6 ROUND LINE

2.00   4.00 cms   2.00

ELEVATION

2.00

PLAN   Fig. C, Q. 4
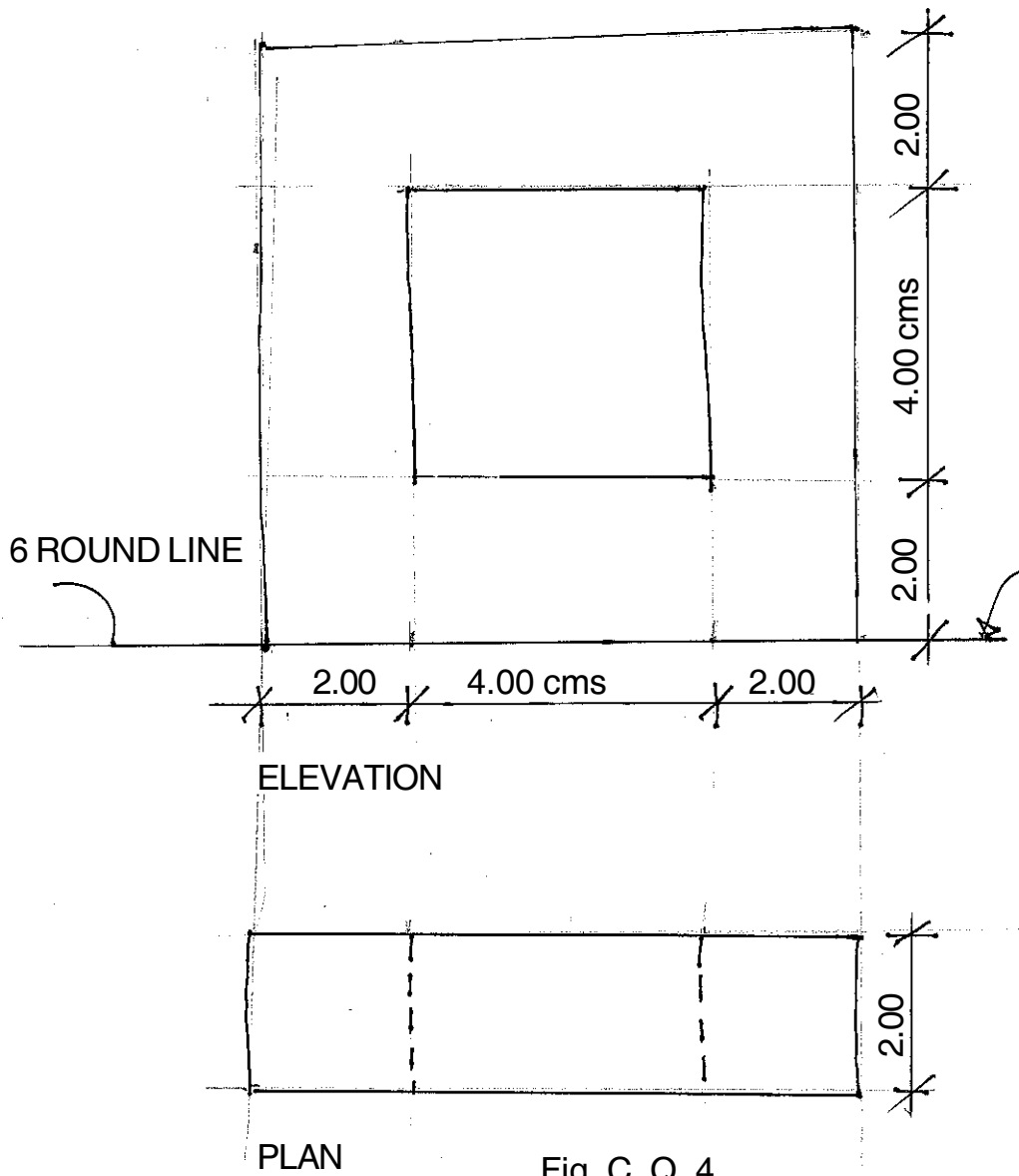
1)

2)
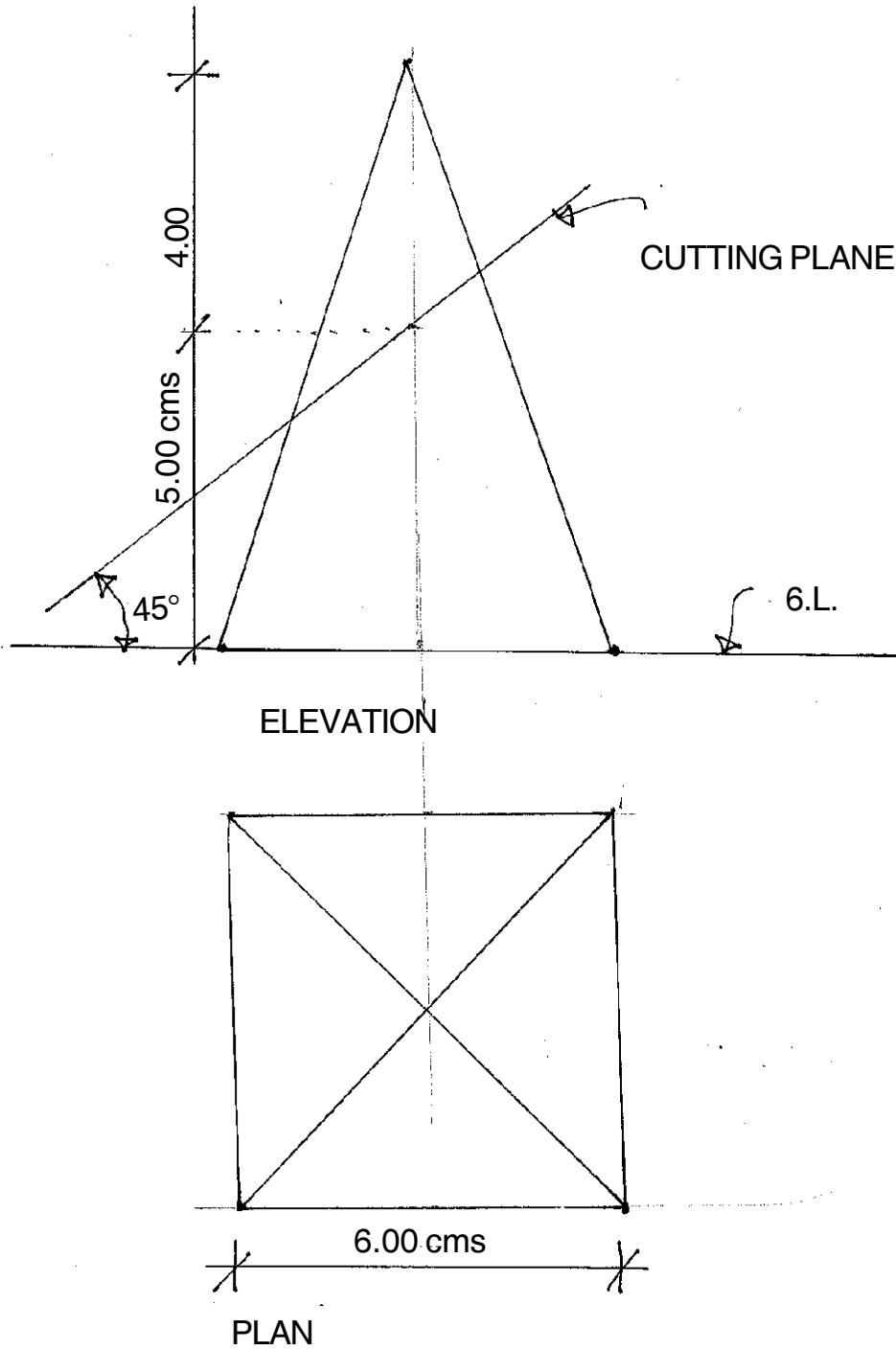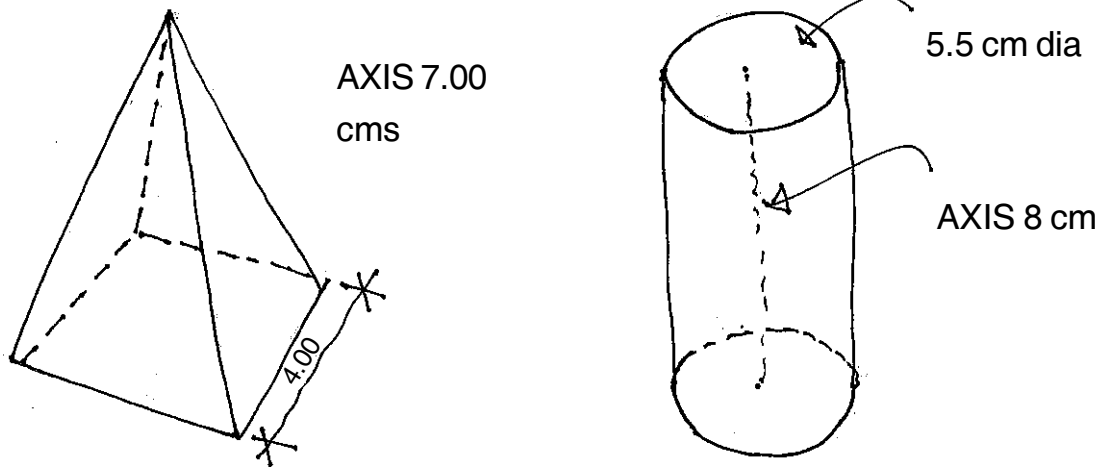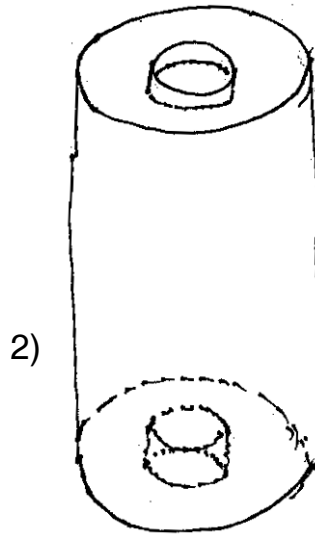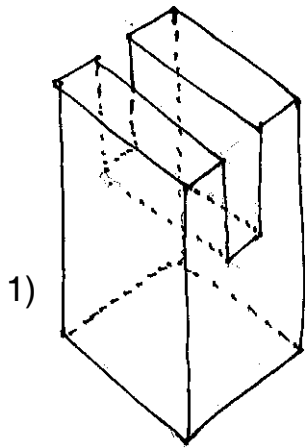
Fig. D, Q. 5

Seat No.

B.Arch. (Semester – II) Examination, 2017
HISTORY OF ARCHITECTURE – II (New – CBCS)

Day and Date : Friday, 12-5-2017   Max. Marks : 70
Time : 10 a.m. to 1.00 p.m.

Instructions : 1) Question no. **1** is **compulsory**.
　　　　　　　2) Draw **neat** sketches **wherever** necessary.

I. Fill in the blanks.   **7**

　　a) Durga Temple is situated in the state of _____

　　b) Rathas are examples of _____ architecture.

　　c) Entablature consists of frieze, architrave and _____

　　d) The style evolved in Constantinople during 5th century A. D. is termed as
　　　_____ architecture.

　　e) Public Bath in Imperial Rome is known as _____

　　f) Market place in Greece is called as _____

　　g) Stupas houses within them _____ of Buddha.

II. Write short notes on (**any 3**) :   **15**

　　1) Draupadi Ratha

　　2) Basilica at Rome

　　3) Theatre at Epiduras

　　4) Ashoka Pillar.

III. Answer in brief with neat sketches (**any 4**) :   **(12 Marks each)**

　　1) Write in brief about Parthenon temple, Greece.

　　2) Write detailed note and draw a neat sketch of Durga temple during Chalukyan
　　　period.

　　3) Explain any three Rathas at Mahabalipuram.

　　4) Explain Buddhist rock-cut arcitecture with suitable example.

　　5) Explain Hagia Sophia with architectural features.

_____

Seat No.

B.Arch. (Semester – II) (Old CGPA Pattern) Examination, 2017
ARCHITECTURAL GRAPHICS – II

Day and Date : Friday, 5-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) ***All*** questions are ***compulsory***.
2) Retain ***all*** constructions lines.
3) Figures to the ***right*** indicate ***full*** marks.
4) ***Five*** marks are reserved for ***neatness*** and ***good*** drafting.

1. A plane cuts the object as shown in Fig. A at PP[1]. Draw plan and sectional elevation (front side) of the cut object (scale – 1:1).   **25**
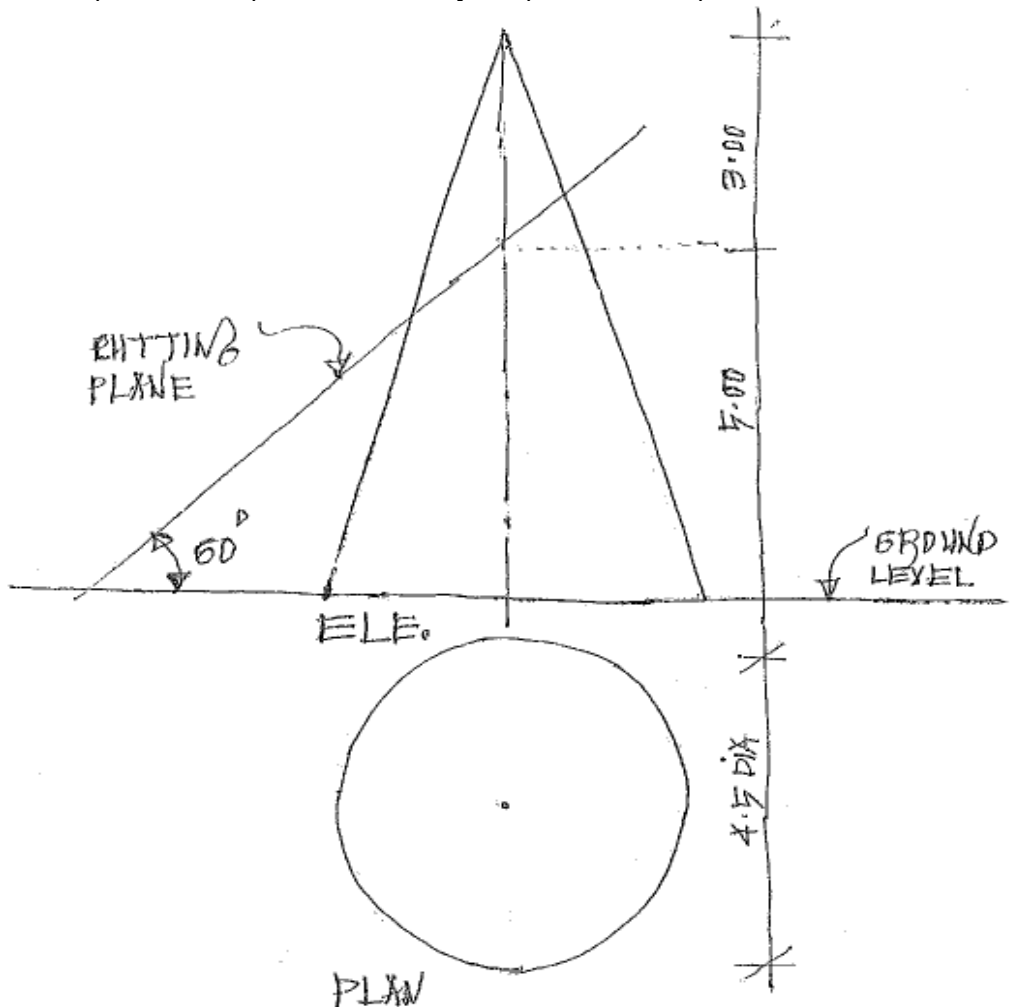
2. Draw true cut portion or development of surface of cut object from Q. No. 1 of Fig. A (Scale – 1:1). **10**

3. Draw the development of surfaces of the following objects in Fig. B (Scale – 1:1). **10**

1)

CUBE   A

EQ EQ EQ

4·50

2)

5·00 DIA
10·00 HT

4. Draw isometric view of the object shown in Fig. C. **15**

6·00 CMS

2·00 2·00

ELEVATION

2·00 CM

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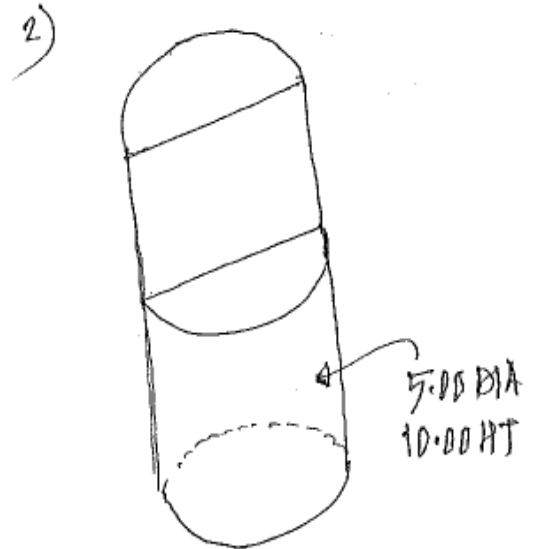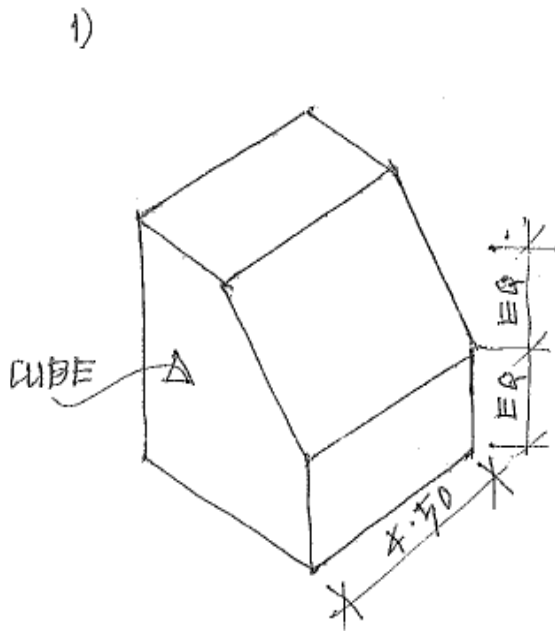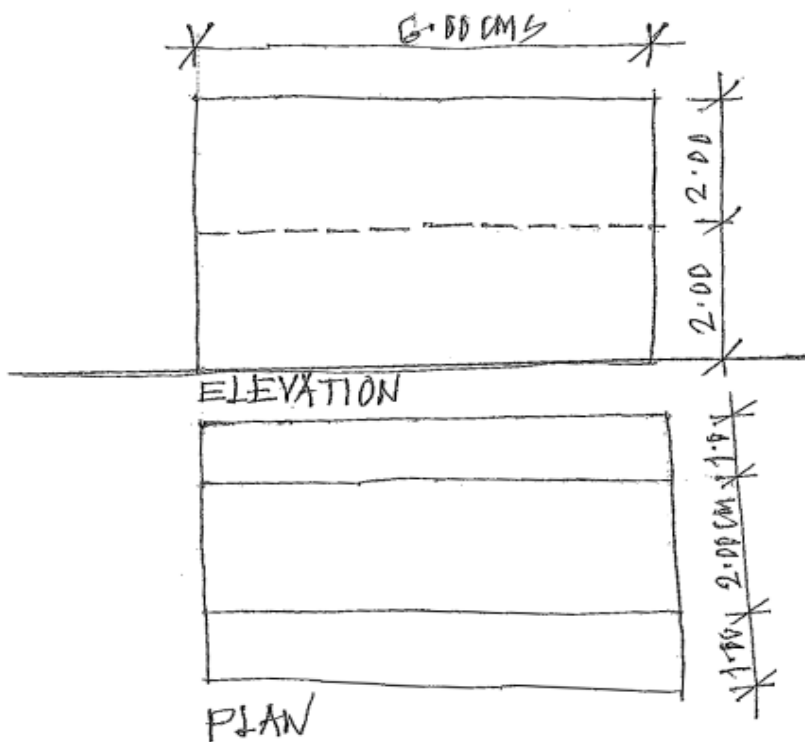
5. Mention the no. of surfaces of the following objects as shown in Fig D.   **5**

①
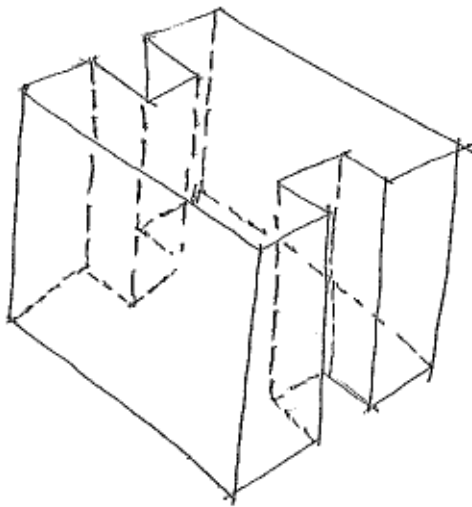
②
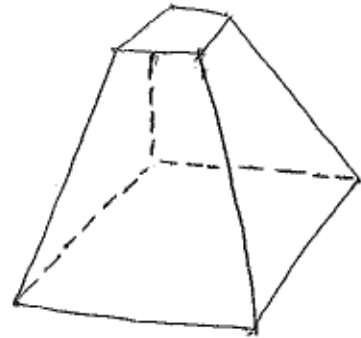
* All Dimensions are in CMS only.

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Seat No.

B.Arch. (Semester – II) (Old) Examination, 2017
THEORY OF STRUCTURE – II (CGPA)

Day and Date : Monday, 8-5-2017

Total Marks : 70

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

Instructions :   1) **Use** of scientific calculator is **allowed.**

2) Q. No. **1** and Q. No. **2** are **compulsory**. From remaining questions solve **any four**.

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

4) Assume suitable data **if** necessary.

1. Select the **correct** option for the following :   **8**

   1) The moment of inertia for a triangular section about its is

   a) $bh^3/36$

   b) $db^2/12$

   c) $bh^3/12$

   d) $bh^3/48$

   2) Moment of inertia is also known as _____

   a) First moment of inertia

   b) Second moment of inertia

   c) Both

   d) None

   3) The property of undergoing deformation without rupture is known as _____

   a) Metability

   b) Ductility

   c) Plasticity

   d) Elasticity

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

   a) Bulk modulus

   b) Shear strain

   c) Modulus of Elasticity

   d) None of above

P.T.O.

2. What do you mean by stress ? Explain different types of stresses. **6**

3. a) Derive formula for Moment of inertia of Rectangular section. **8**

   b) Explain following terms : **6**

      1) Elasticity.

      2) Young's Modulus.

      3) Poisson's ratio.

4. a) In a tensile test, a piece of 35 mm diameter, 300 mm length stretched to 0.108 mm under pull of 70 kN. If modulus of rigidity is $0.832 \times 10^5 \text{N/mm}^2$. Find E, K and Poisons ratio. **7**

   b) What do you mean by SFD and BMD ? Explain simply supported beam with centre point load as an example. **7**

5. a) Calculate the centroid of following : **10**
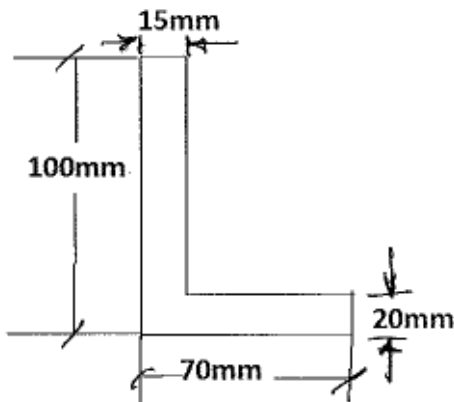
   b) Write a note on Perpendicular axis theorem. **4**

6. A simply supported beam is carrying point loads, as shown in figure. Draw the SFD and BMD for the beam. **14**
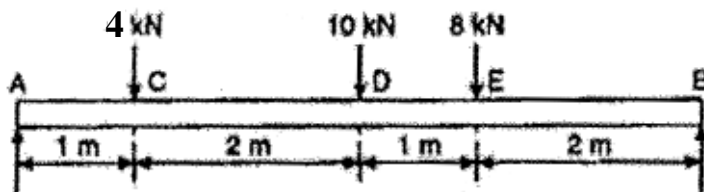
7. a) Explain in detail stress-strain graph. **10**

   b) An equilateral bar of 20 mm side and 3 m long contracts in length by 3 mm. Calculate the push on bar if modulus of elasticity $E = 2 \times 10^5$ Mpa. **4**

_____

Seat
No.

B.Arch. (Semester – II) Examination, 2017
HISTORY OF ARCHITECTURE – II
(Old CGPA Pattern)

Day and Date : Friday, 12-5-2017   Total Marks : 70

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

Instructions : 1) *Question no.***1** *is* **compulsory**.

2) *Draw* **neat** *sketches* **wherever** *necessary.*

I. Fill in the blanks :   **7**

a) _____ is termed as series of arches supported by columns on either side.

b) Entablature consists of frieze, architrave and _____

c) _____ and Draupadi Ratha are situated on the same platform in Mahabalipuram.

d) Market place in Greece is called as _____

e) Apsidal end of the church is termed as _____

f) _____ support central dome in Hagia Sophia.

g) Stupas houses within them _____ of Buddha.

II. Write short notes on (**any 3**) :   **15**

1) Viharas.

2) Theatre at Epiduras.

3) Arjun Ratha.

4) Ashoka Pillar.

III. Answer in brief with neat sketches (**any 4**) :(**12** Marks **each**).   **48**

   1) Explain Hagia Sophia with a neat sketch.

   2) Write detailed note and draw a neat sketch of Ladkhan temple during Chalukyan period.

   3) Explain formation and development of Greek architecture with reference to geographical, geological, climatic and political conditions.

   4) What is Thermae ? Explain its function. Explain in detail the Thermae at Carcalla.

   5) Briefly explain Great Stupa at Sanchi.

_____

Seat
No.

B.Arch. (Semester – III) Examination, 2017
(CGPA Pattern)
ARCHITECTURAL GRAPHICS – III

Day and Date : Thursday, 4-5-2017   Total Marks : 70
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.

(**Note** : **All** Dimensions are in Centimeter)

1. Draw one point perspective view for the object given below by observing following points/conditions (Figure-A). **20**

2. Draw two point perspective view for the object given below by observing following points/conditions (Figure-B). **25**

3. Draw shade and shadow for the object (Figure-C) 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.

(Figure-A)

ELEVATION

PLAN

6.70 CMS

1.50

GROUN LEVEL

1.50   5.00 CMS   1.50

8.00 CMS

PICTURE PLANE

90°

SP

SP. = 12.00
EYE LEVEL = 4.00 CMS

(Figure-B)

ELEVATION

PLAN   PICTURE. PLANE

S.P = 15.00 CMS
EYE LEVEL = 12.00 CMS.
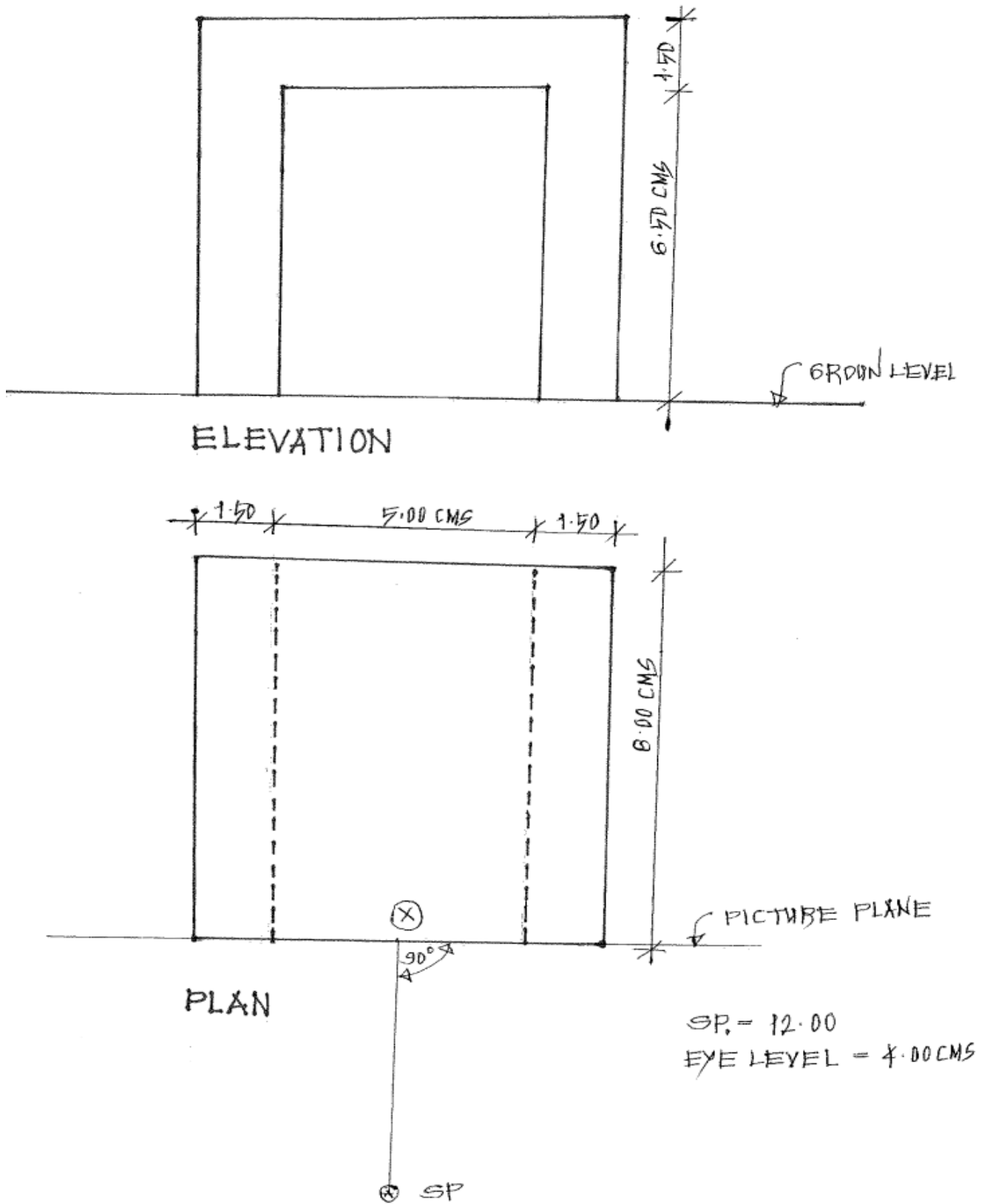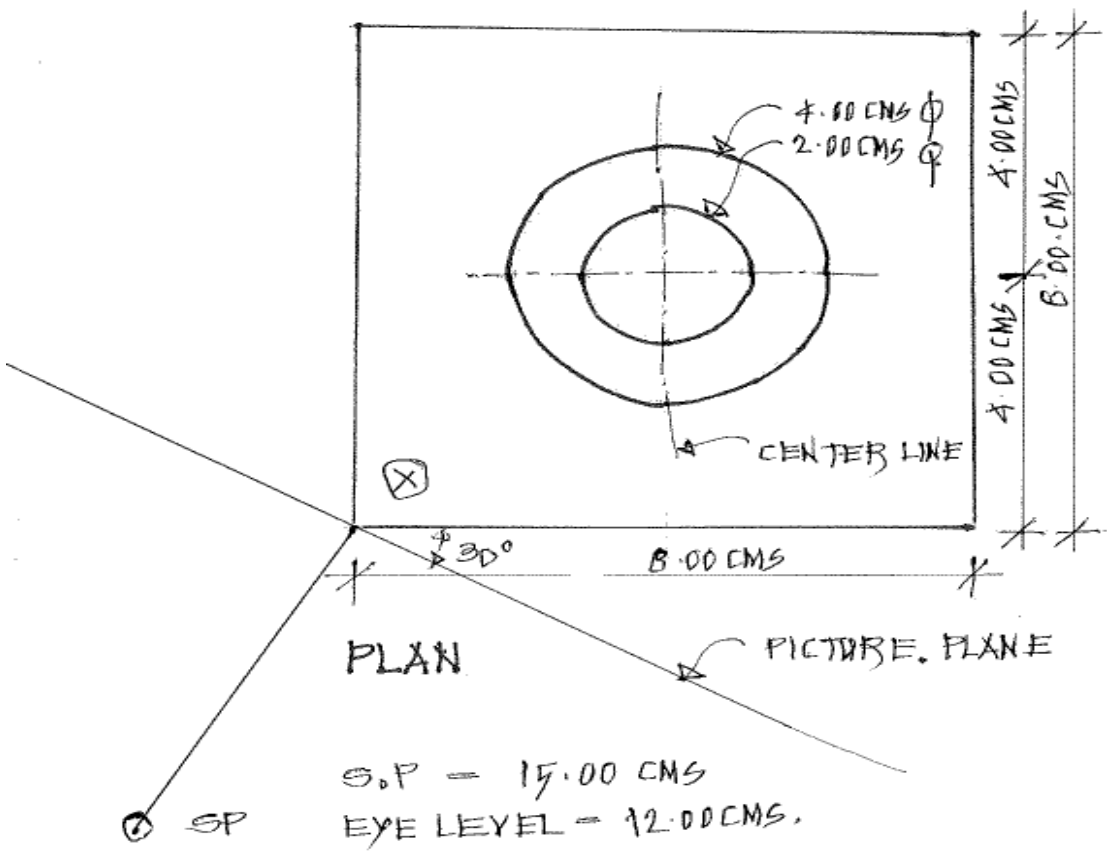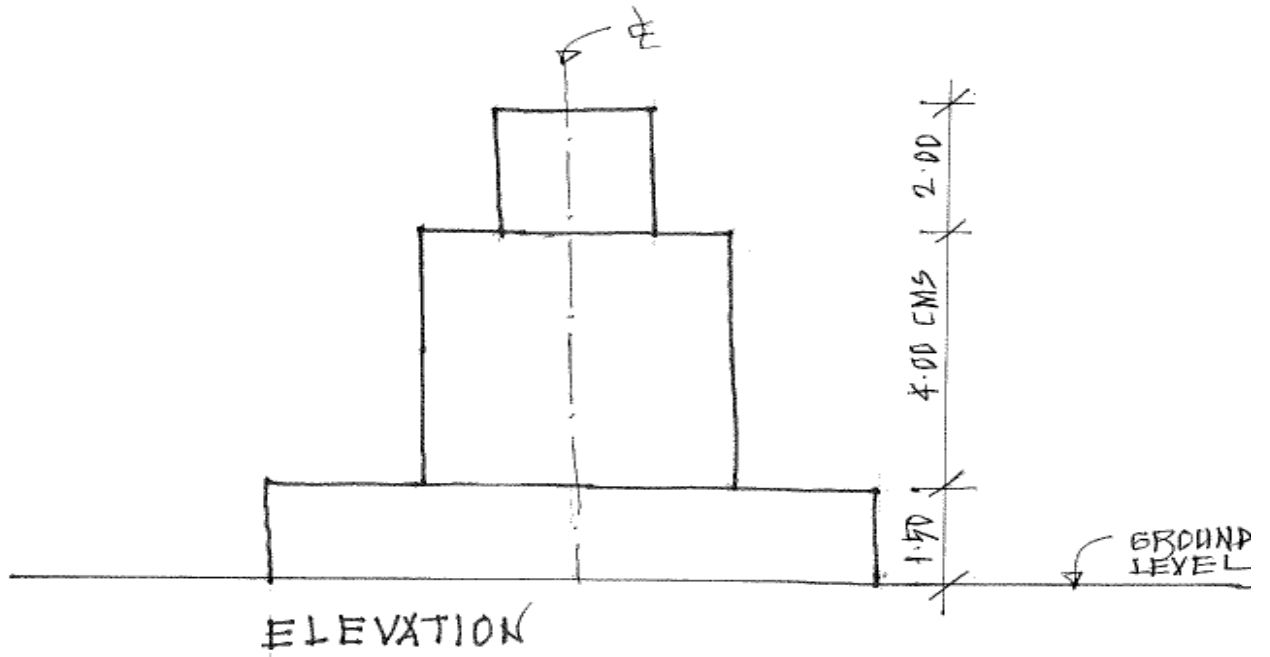
(Figure-C)
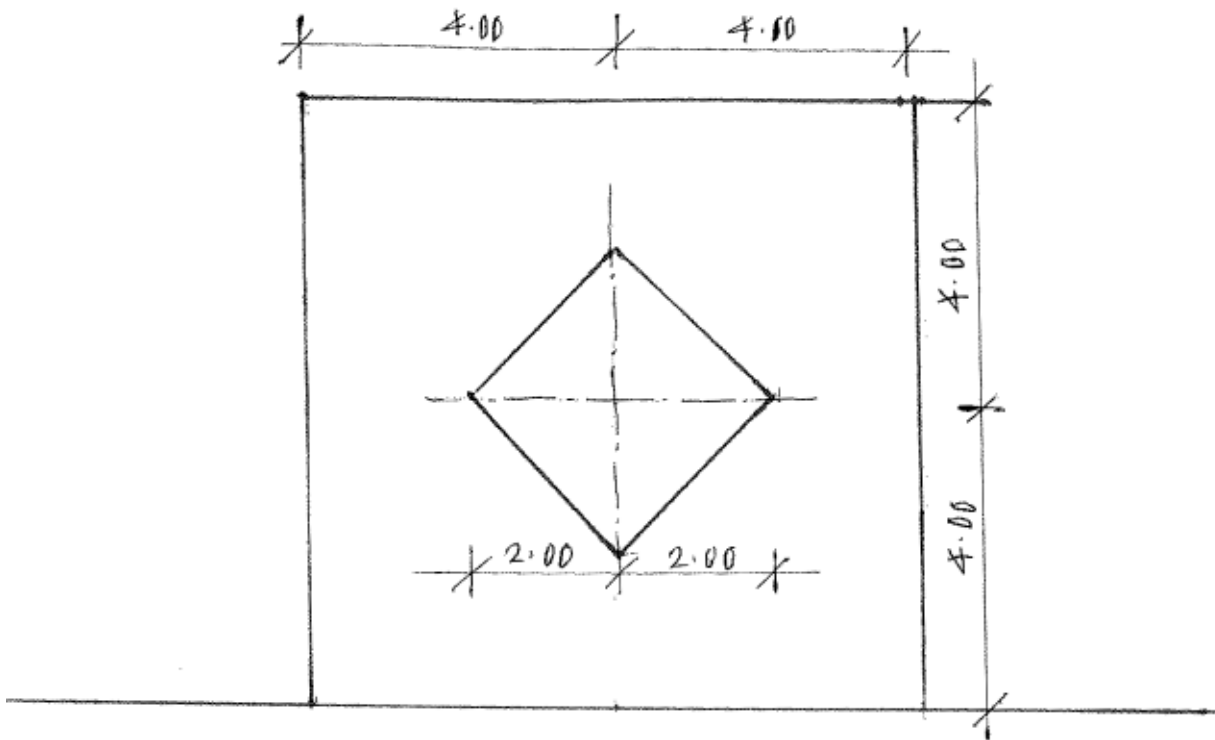
ELEVATION
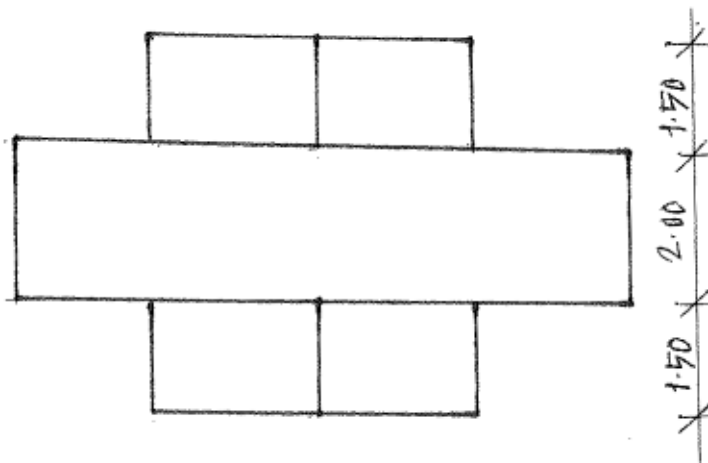
PLAN

Seat
No.

B.Arch. (Semester – III) (CGPA) Examination, 2017
CLIMATOLOGY AND ENVIRONMENT – I

Day and Date : Saturday, 6-5-2017   Total Marks : 70
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 **right** indicate **full** marks.
3) **All** questions are **compulsary**.

1. Fill in the blanks :   **7**

   1) _____ on 23.5 N latitude experienced longest day on earth.
      a) 21-June   b) 21-September   c) 21-May   d) 23-March

   2) SI unit of radiation is _____
      a) w/m^2 b) Btu   c) w/hr   d) none of the above

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

   4) DBT is measured in _____
      a) outdoor   b) bottle   c) shade   d) none of the above

   5) _____ is due to heat transmission from body to air in contact with skin.
      a) Evaporation   b) Reflection   c) Convection   d) None of the above

   6) Radiation is measured in _____
      a) %   b) bottle   c) shade   d) none of the above

   7) _____ on 23.5 N latitude experienced Equinox day on earth.
      a) 21-June   b) 21-September   c) 21-May   d) 23-March

2. Write short note on **any 3** :   **15**
   1) Site Climate   2) Solar Radiation
   3) Urban Climate   4) Thermal balance.

3. A) Explain Micro Climate analysis.   **5**
   B) Find Ah, RH, DBT when VPD 1.8 kWM/m^2 WBT 20 C.   **7**

4. Explain vernacular architecture with reference to climate responsive architecture.   **12**

5. A) Explain wind Scoop diagram.   **6**
   B) Trade wind.   **6**

6. Explain Hot and Dry Climate in detail .   **12**

.16 Fig 12
Psychrometric chart

Fig 12
Psychrometric chart
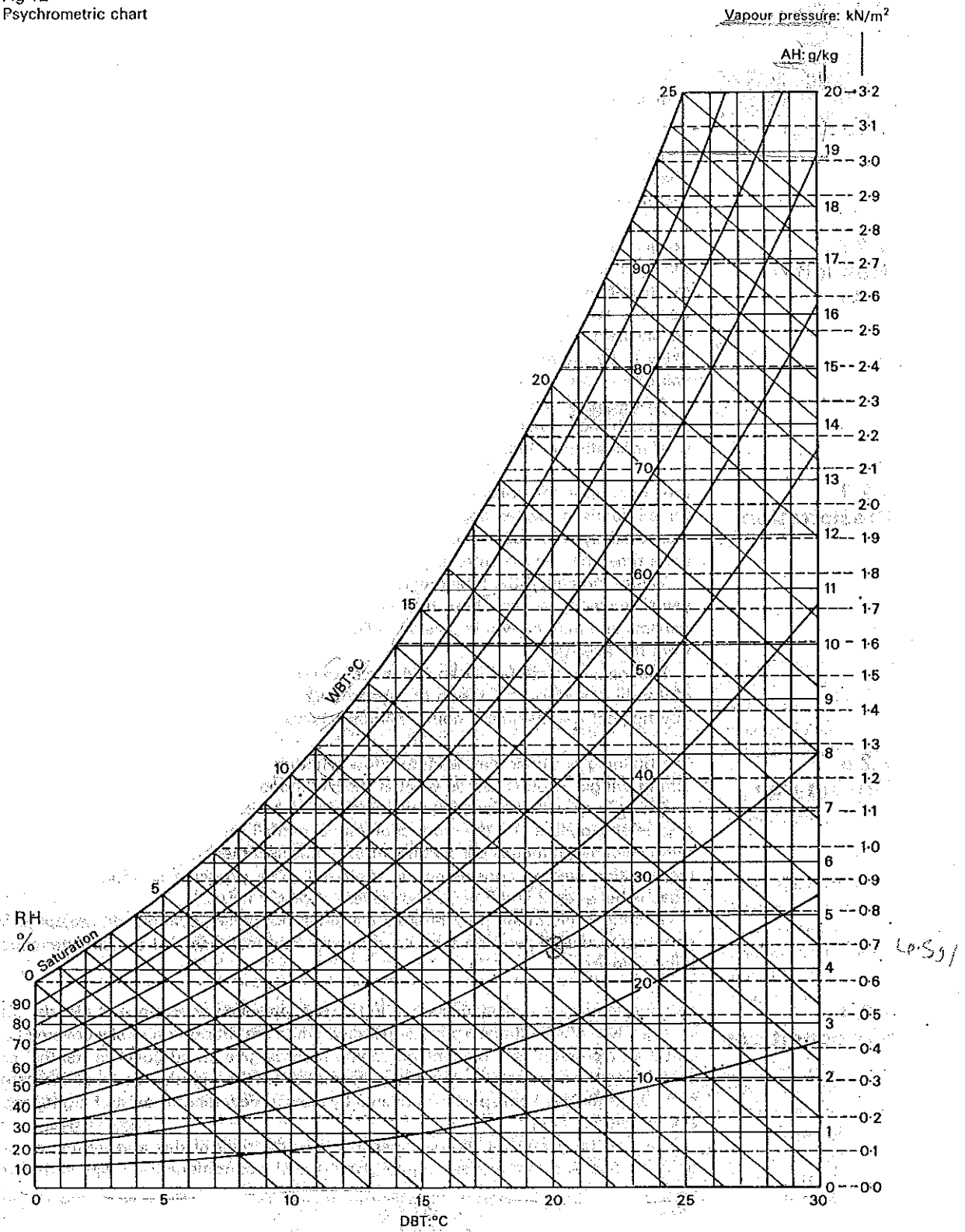
Seat No.

B.Arch. (Semester – III) (CGPA) Examination, 2017
THEORY OF STRUCTURE – III

Day and Date : Monday, 8-5-2017　　　　　　　　　　Total Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

Instructions : 1) **Use** of Scientific Calculator is **allowed**.
　　　　　　　　2) Q. No. **1** and **2** are **compulsory**. From remaining
　　　　　　　　　 questions solve **any four**.
　　　　　　　　3) Figures to the **right** indicate **full** marks.
　　　　　　　　4) Assume suitable data **if** necessary.

1. Select the **correct** option for the following :　　　　　　　　　　**8**

　　1) According to theory of simple bending, Value of E remains _____
　　　　a) Same　　　　　b) Changes　　　c) Both　　　　　d) None

　　2) Maximum bending Moment for Simply Supported beam with UDL over span is
　　　_____
　　　　a) wl　　　　　　b) wl/4　　　　　c) wl/2　　　　　d) WL^2/8

　　3) Unit of Section Modulus is _____
　　　　a) mm　　　　　b) sq mm　　　　c) Cub mm　　　　d) None

　　4) If shear force along section of beam is zero, the bending moment at section is
　　　_____
　　　　a) Zero　　　　　b) Maximum　　　c) Minimum　　　d) None

2. Write down assumptions made in theory of Simple Bending.　　　　　　**6**

3. a) Explain Modulus of Section. Derive formula of section modulus for Hollow
　　　rectangular section.　　　　　　　　　　　　　　　　　　　　　　**6**

　　b) A cantilever beam of 2.5 m span of circular solid crossection of 80 mm diameter
　　　is loaded with u.d.l. of W kN/m. Maximum stress induced is 120 MPa.
　　　Determine u.d.l on beam.　　　　　　　　　　　　　　　　　　　**8**

4. a) Explain Concept of Soil Mechanics and what are different types of soils.　　**4**

   b) Draw the shear stress diagram for 'T' section of flange 200 mm*50 mm & web 50 mm*200 mm when acted by maximum shear force of 100 kN.　　**10**

5. Write a short note on :

   a) Earth Pressure at Rest, Active Earth Pressure, Passive Earth Pressure.　　**7**

   b) Arches and Domes.　　**7**

6. Draw Shear force and Bending Moment diagram for following beam :　　**14**
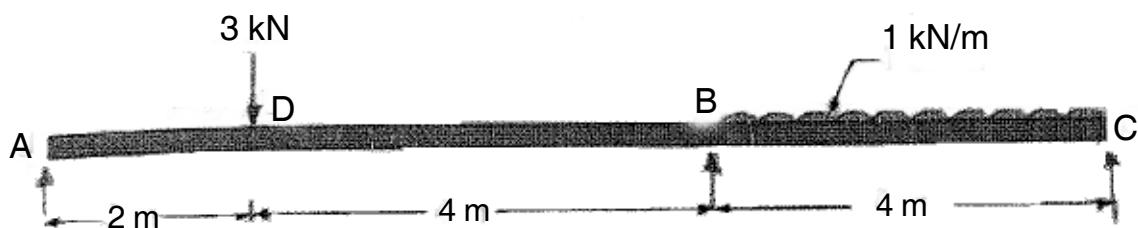
7. a) Derive formula for Normal and Tangential stresses when a member is subjected to Axial Load.　　**7**

   b) The stresses at a point of a machine component are 150 mpa and 50 mpa both tensile. Find intensities of Normal, Shear and Resultant stresses on a plane inclined at an angle of 55° with the axis of major tensile stress. Also find Magnitude of Maximum shear stress in the component.　　**7**

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Seat No.

B.Arch. (Semester – III) Examination, 2017
HISTORY OF ARCHITECTURE – III (CGPA Pattern)

Day and Date : Friday, 12-5-2017   Total Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

Instructions : 1) *Question No.* **1** *is* **compulsory**.
2) *Draw* **neat** *sketches* **wherever** *necessary*.

I. Fill in the blanks :   **7**

   a) The pavilion for assembly in Indian temple architecture is known as _____ mandapa.

   b) _____ style of architecture uses the buttres and vault.

   c) The windows in Gothic architecture were decorated with _____ glass.

   d) Meenakshi Sundaram temple is located in _____

   e) The entrance gateways in a Dravidian temple are known as _____

   f) _____ temple is an example of rock cut architecture located in Ellora.

   g) The _____ temple at Konark is a supreme example of the Orissa style.

II. Write short notes on **(any 3)** :   **15**

   1) The thousand pillared hall of Madurai.

   2) Hoysala temples.

   3) Name the different parts of Khajuraho temple.

   4) Make a comparative analysis of Gothic and Renaissance architectural style.

III. Explain in brief with neat sketches **(any 4) (12 mks each)** :   **48**

   1) Sun temple at Konark.

   2) Vaikuntha Perumal temple at Kanchipuram.

   3) Channakeshawa temple at Bellur.

   4) Describe the salient features of a typical Dravidian temple complex.

   5) West Minster Abbey, London.

_____

Seat No.

B.Arch. (Semester – III) Examination, 2017
BUILDING SERVICES – I (CGPA Pattern)

Day and Date : Monday, 15-5-2017   Total Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

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

1. Fill in the blanks :   **7**
   A) The top of the vent is pipe provided with _____
   B) Sewers should be laid at sufficient slope to develop _____
   C) Open drains are also termed as _____
   D) The _____ levels are to be carefully checked for the proper functioning of sewer lines.
   E) In _____ system of sewerage the sanitary sewage and storm water are carried separately in two set of sewers.
   F) /_____ is the device or a sanitary appliances which is designed to hold some quantity of water.
   G) /_____ pipe carries discharge from sanitary fittings such as bathroom, kitchen.

2. Write short notes on **any three** :   **15**
   1) Wash basin.
   2) Urinals.
   3) Street inlets.
   4) Antisiphonage pipe.

3. Describe with neat sketches the various types of sewers used for sewage disposal.   **12**

4. Draw a neat sketch of a soak pit and explain its function.   **12**

5. Discuss two types of chambers in a drainage system. Explain their function with neat sketch.   **12**

6. Discuss alternative methods of sewage disposal in rural areas.   **12**

7. Sketch a typical arrangement for toilet and a kitchen in a residential building (you can assume the size of toilet block and kitchen) give the details of any two trap and inspection chamber.   **12**

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Seat
No.

B.Arch. (Semester – IV) (CGPA) Examination, 2017
BUILDING SERVICES – II

Day and Date : Friday, 5-5-2017   Total Marks : 70
Time: 3.00 p.m. to 6.00 p.m.

Instructions : 1) Q.No. **1** and Q.No. **2** are **compulsory**.
          2) Solve **any 4** questions from remaining.

1. Fill in the blanks :   **7**

   a) _____ is commonly used as coagulant in water treatment process.

   b) In _____ system water is supplied for 24 hrs. of the day.

   c) _____ device that regulates the flow is the of water.

   d) The pipe extending from the municipal distribution to consumer meter is known
      as _____

   e) _____ device is used for tapping water from fire extinguishing.

   f) When chlorine is added to raw water before any treatment it is known
      as_____

   g) The recommended ph range for treated drinking water is around _____

2. Short notes (any **3**) :   **15**
   a) Ball valve   b) Water softening
   c) Hydrants   d) Stand pipes

3. Explain different factors affecting the water demand.   **12**

4. Explain any three methods of water conveyance.   **12**

5. Explain different types of taps used in water supply.   **12**

6. Calculate size of o/H water tank for 20 tenements with neat sketch.   **12**

7. Explain different impurities present in water and discuss per capita demand of
   water.   **12**

_____

Seat
No.

B.Arch. (Semester – IV) (CGPA) Examination, 2017
ARCHITECTURAL GRAPHICS – IV

Day and Date : Tuesday, 9-5-2017   Total Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

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

1. Draw shades and shadows of the Dia. A-B in plan and elevation considering the source of light is in conventional direction on the vertical and horizontal planes of the object. **20**
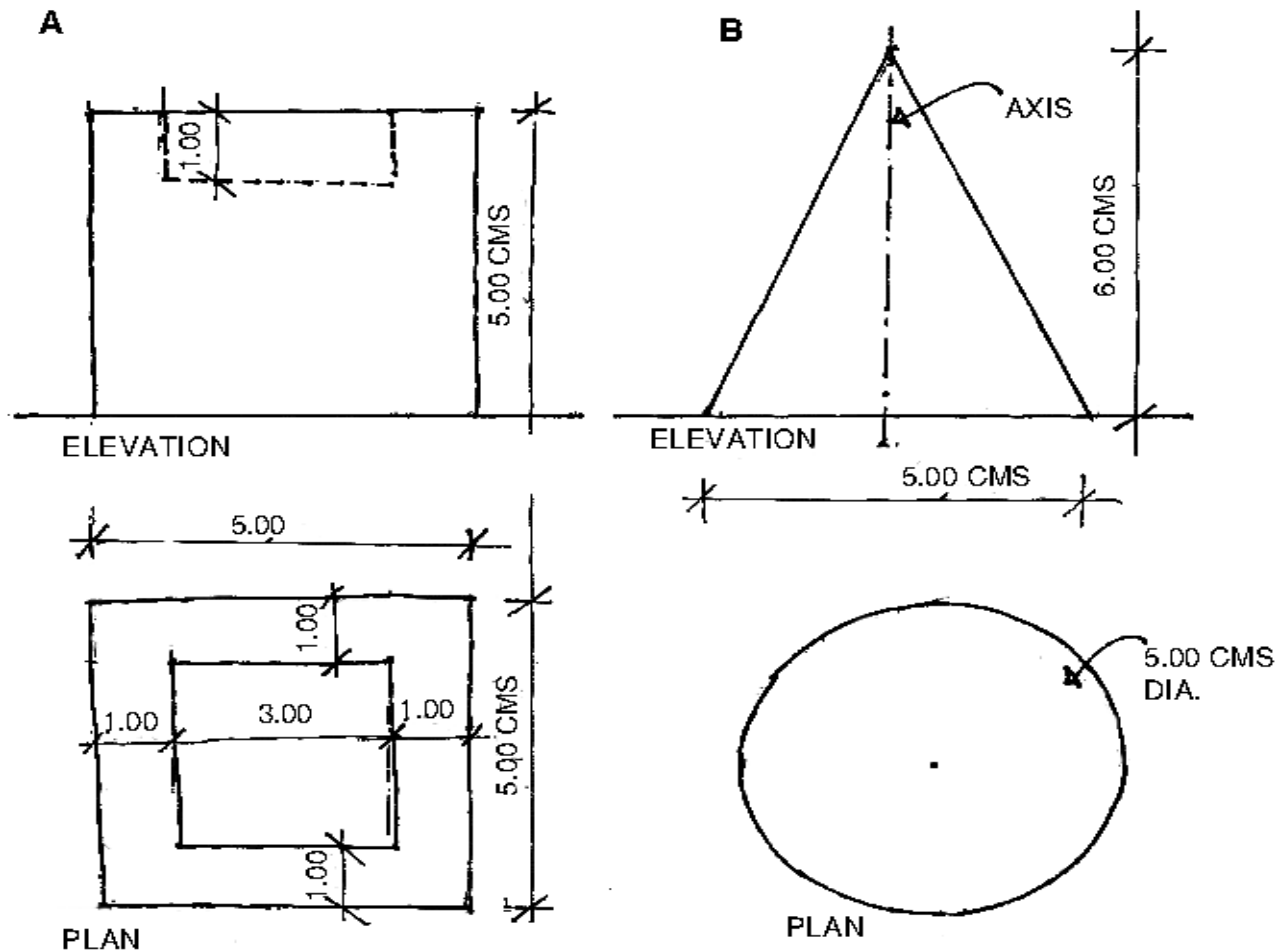
2. Draw perspective view of the given object by observing points in Dia. B. **20**
   a) A plane makes an angle as shown in Figure.
   b) The picture plane touches the object.
   c) Station point is 160 mm away from the 'X'.
   d) The eye level is 130 mm above ground level.

DIA. B

AXIS

6.00 CMS

1.0 1.0

GROUND LEVEL

ELEVATION

4.00 CMS DIA.

1.50

4.00 CMS

7.00 CMS

1.50

45°

⊗

1.50   4.00 CMS   1.50

PLAN   PICTURE PLANE
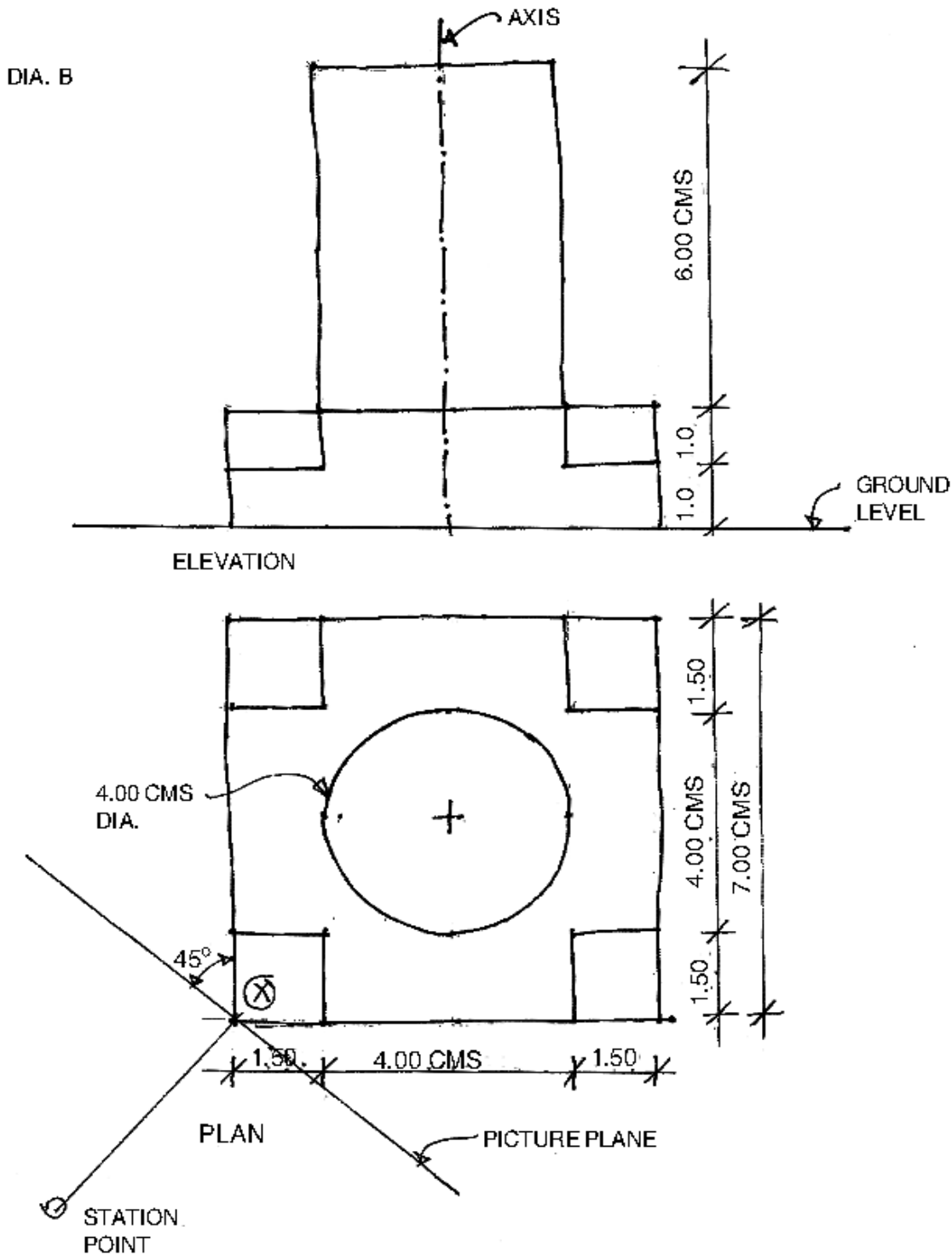
STATION POINT

3. Dia. C shows plan and elevation of the object as shown in figure.
   Draw perspective view observing the following points. **25**
   a) Picture plane passes through 'X'.
   b) Station point is 140 mm away from picture plane.
   c) Eye level is 140 mm away and above ground level and draw shades and
   shadows in perspective view.

DIA. C
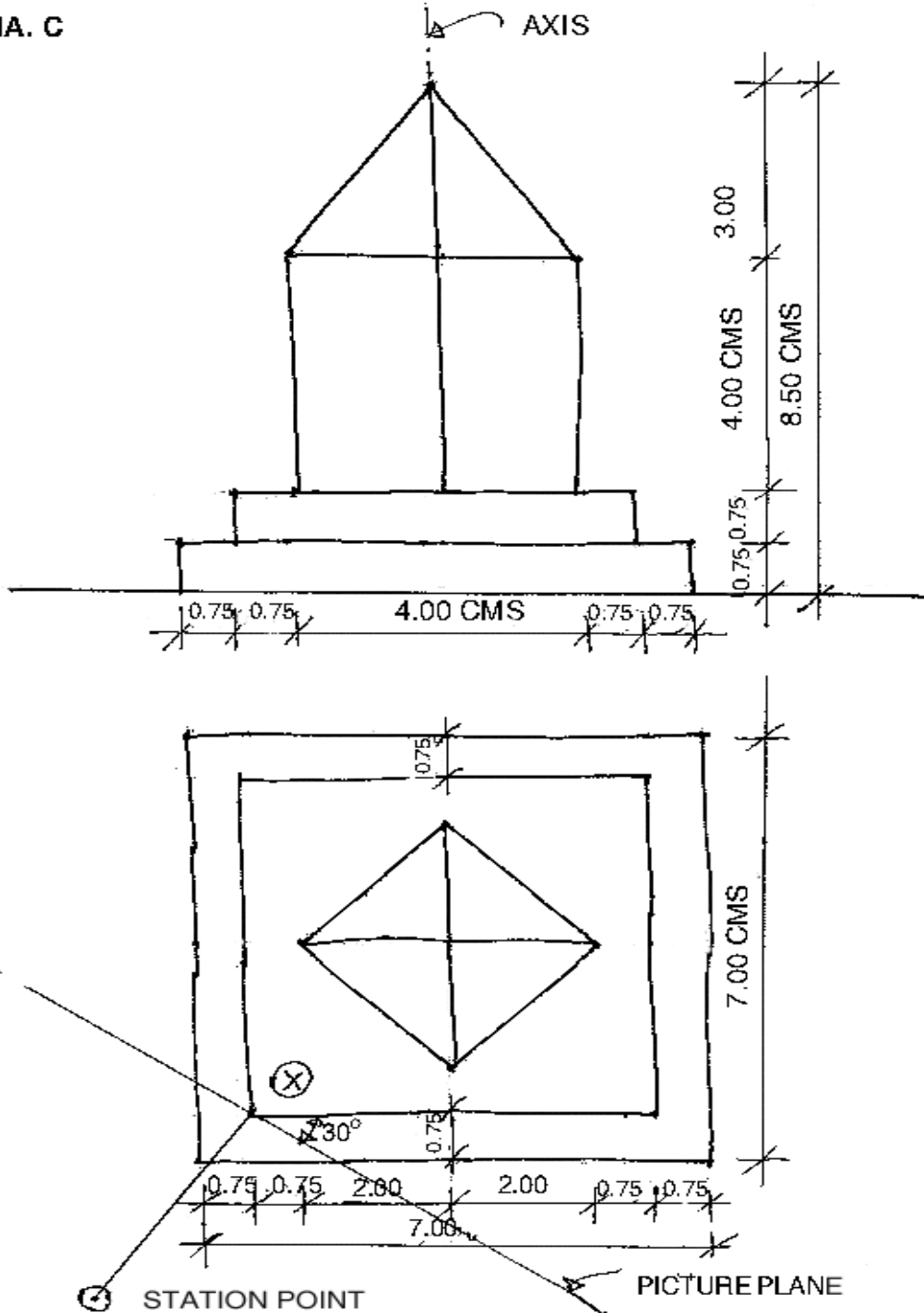
Seat No.

B.Arch. (Semester – IV) (CGPA) Examination, 2017
CLIMATOLOGY AND ENVIRONMENT – II

Day and Date : Saturday, 13-5-2017   Total Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

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

1. Fill in the blanks :

1) _____ city experiences warm and humid climate.
   a) Mumbai   b) Delhi
   c) Pune   d) Lonavala

2) _____ is the only strategy in warm and humid climate.
   a) Ventilation   b) Cooling
   c) Humidifation   d) None of the above

3) Human perception of light ranges between _____ nm.
   a) 380-780   b) 450-1500
   c) 500-1000   d) None of the above

4) Stack effect refers to _____
   a) Cross ventilation   b) Window
   c) Courtyard   d) Duct

5) _____ is due to heat transmission from body to air in contact with skin.
   a) Evaporation   b) Reflection
   c) Convection   d) None of the above

6) Radiation is measured in _____

   a) Watts/sqm   b) k/sqm

   c) lux/sqm   d) lumen/sqm

7) Externall illumination is measured in _____

   a) Watts   b) Lux

   c) Radiation   d) Lumen   **7**

2. Write short note on **any 3**.   **15**

   1) Vertical shading device.

   2) Sources of light in building.

   3) Internal heat gain.

   4) Solarium.

3. A) Find solar altitude and azimuth angle for given chart at 3 pm on 23rd Sept. and 11 a.m. on 30th Aug. for 44° North latitude.   **5**

   B) Find out horizontal and vertical shadow angle for given chart at 4 pm on 15th May and 1 p.m. on 15th April for 44° North latitude and given sketches.   **7**

4. Explain with sketches window designing for daylighting.   **12**

5. A) Explain sun dial and how to use it.   **6**

   B) Explain external heat gain.   **6**

6. Give design considerations with sketches for cold and cloudy climate.   **12**

LATITUDE 44° NORTH

LATITUDE 44° SOUTH
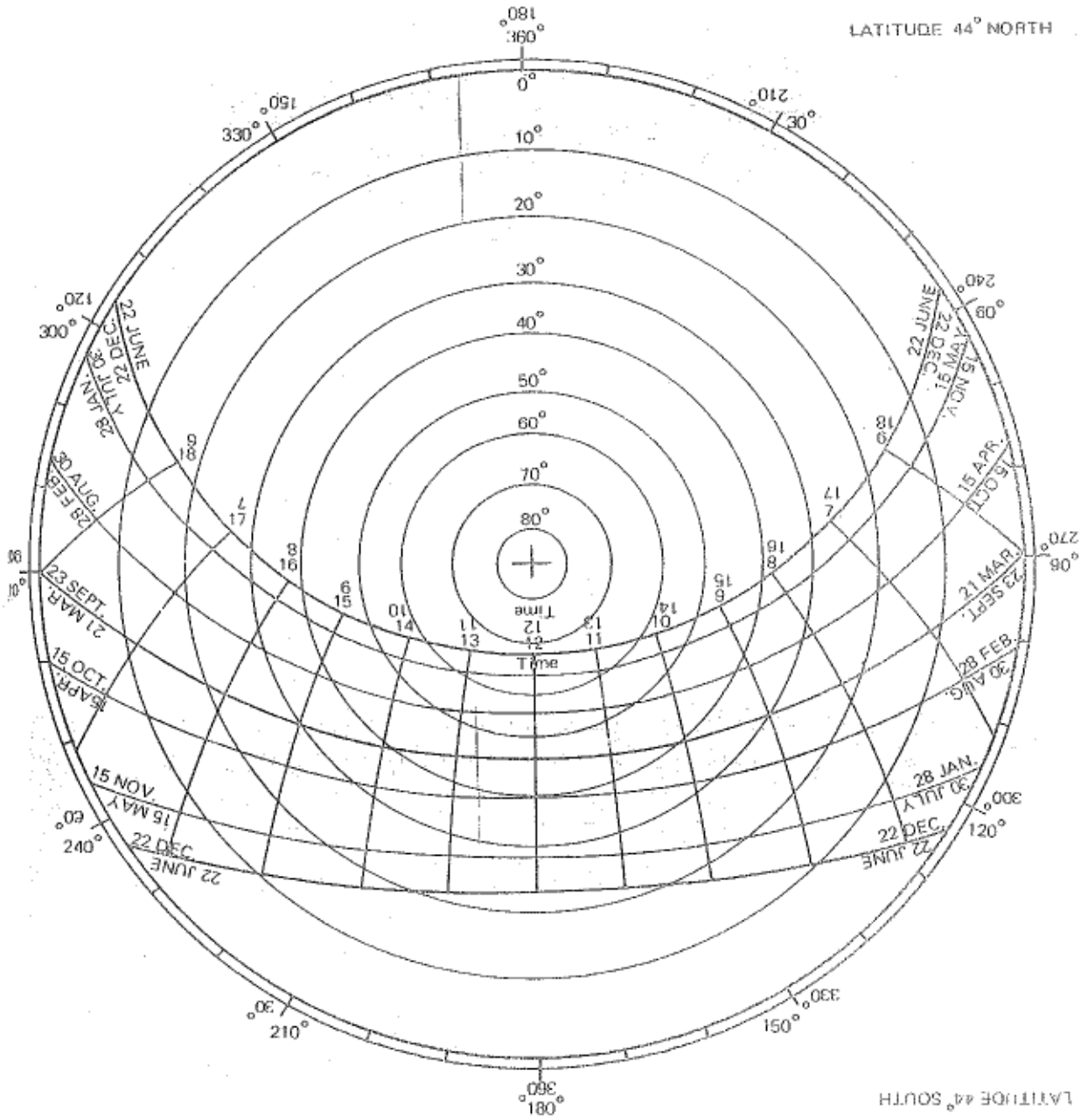
Seat No.

B.Arch. (Semester – IV) Examination, 2017
THEORY OF STRUCTURE – IV (CGPA)

Day and Date :Tuesday, 16-5-2017   Total Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

Instructions : 1) **Use** of Scientific calculator.
2) Q. No. **1** is **compulsory**.
3) Figures to the **right** indicate **full** marks.
4) Assume suitable data **if** necessary.

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

   1) In limit state method, material goes in _____
      a) Elastic State   b) Plastic State
      c) Both a and b   d) None

   2) For UDL acted beam, slope is centre of beam is _____
      a) Zero   b) Maximum
      c) Minimum   d) None

   3) Compared to "T" section, "I" sections are _____ in stress resistance.
      a) Weak   b) Stronger
      c) Medium   d) None

   4) Factor of safety against sliding is _____
      a) 1.2   b) 1.5
      c) Both a and b   d) None

   5) The maximum deflection of cantilever beam with UDL on full length is
      a) $wL^4/(8EI)$ b) $wL^4/(6EI)$
      c) $wL^4/(4EI)$ d) $wL^4/(2EI)$

P.T.O.

6) Equivalent length of column "One end Free and one end fixed" is _____

   a) L   b) 2L

   c) L/2   d) None

7) For Uniaxial acted beam, force are _____

   a) Only P   b) Only P and M_x or M_y

   c) P, M_x and M_y d) None of above

2. Write short note on **any three** of the following :   **15**

a) Explain concept of axial, uniaxial and biaxial bending.

b) Differentiate working stress method and limit state method.

c) Explain concept of retaining wall and its No Tension condition.

d) What are structural properties and allowable stresses in masonry structure ?

3. Solve **any four** of the following :   **48**

a) What is Eulers crippling load for the column of length 5.5m long with one ends fixed and other end hinged. Column is "T" section with flange 250 mm × 20 mm and web 350 mm× 20 mm.
Take $E = 2 \times 10^5$ N/mm^2

b) The simply supported beam has the cross-sectional area shown. Determine maximum bending stress in tension and also in compression in the beam, and draw the stress distribution over the cross section at the mid-span if section is "T" with flange 400 mm× 40 mm and web 400 mm× 40 mm.
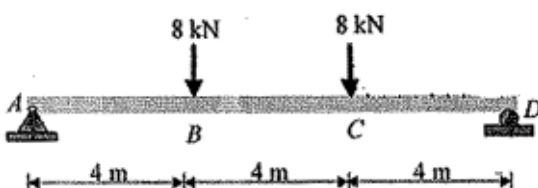
c) Derive the equation for core of section for circular and rectangular section.

d) Find the slope and deflection for the following beam if $EI = 60 \times 10^3$ kNm^2.

10 KN/m

4 m   4 m
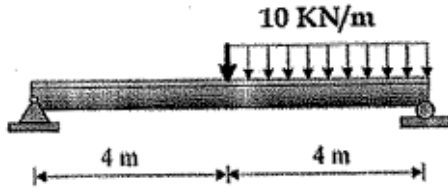
e) Find the maximum slope and deflection for beam with UDL of 10 kN/m and central point load of 7 KN. If $E = 2 \times 10^5$ N/mm^2.The beam is of section "T" with flange 400 mm× 40 mm and web 400 mm× 40 mm.

_____

Seat
No.

B.Arch. (Semester – IV) (CGPA) Examination, 2017
HISTORY OF ARCHITECTURE – IV

Day and Date : Thursday, 18-5-2017   Total Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

Instructions : 1) Question no.**1** and **2** are **compulsory**.

2) Solve **any 4** questions from the remaining.

3) Draw **neat** sketches **wherever** necessary.

1. Fill in the blanks (**7** marks) :

   1) The wholly book of Islam _____

   2) Buland Darwaza built by _____

   3) The founder of Khilji Dynasty was _____

   4) The first Mosque built in India _____

   5) Vertical elements in Islamic architecture _____

   6) The Architect of Rashtrapati Bhawan _____

   7) Calling for prayer in Islam is termed as _____

2. Write short note on **any 3** (**15** marks) :

   A) Liwan.

   B) Squinches and Pendentives.

   C) Rauza.

   D) Domes used in Islamic architecture.

3. Write in detail with neat sketch parts of typical Indian Mosque. **12**

4. Explain in detail with neat sketch-Tomb of Illtutmish. **12**

5. Sketch and explain any two buildings in Fatehpur Sikri. **12**

6. Explain with suitable example Architectural characters of Bijapur province. **12**

7. Draw plan, elevation, section and write a note on Tajmahal. **12**

8. Write detail note on Rashtrapati Bhawan, Delhi. **12**

_____

Seat No.

B.Arch. (Semester – V) Examination, 2017
THEORY OF STRUCTURE – V (New CGPA)

Day and Date : Thursday, 4-5-2017　　　　　　　　　　Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions :　1) **Use** of IS 800, Steel Table and **Scientific** Calculator is allowed.
　　　　　　　　2) Q.No. **1** and **2** are **compulsory**. From remaining questions solve **any four**.
　　　　　　　　3) Figures to the **right** indicates **full** marks.
　　　　　　　　4) Assume suitable data **if** necessary.

1. Select the **correct** option for the following :　　　　　　　　　　　　　**8**

　1) For the steel structures, ISJC stands for
　　A) Indian Standard Joint Channels
　　B) Indian Standard Junction Channels
　　C) Indian Standard Joist/Junior Channels
　　D) None of above

　2) Minimum pitch should not be less than _____ times the nominal diameter of the rivet.
　　A) 1.5　　　　　　　　　　　　　　B) 2
　　C) 2.5　　　　　　　　　　　　　　D) None of these

　3) The effective length of a battened strut effectively held in position at both ends but not restrained in direction is taken as _____
　　A) 1.8L　　　　　　　　　　　　　B) L
　　C) 1.1L　　　　　　　　　　　　　D) 1.5 L

　4) Slenderness ratio of such single angle strut should not exceed _____
　　A) 200　　　　　　　　　　　　　　B) 150
　　C) 180　　　　　　　　　　　　　　D) None of these

P.T.O.

2. Define Gross diameter of rivet, Pitch of rivet, gauge distance of rivets. **6**

3. a) Write a short note on failure of riveted joints. **4**

   b) Explain different types, all the components of roof trusses and methods of analysis of trusses. **10**

4. a) What are different minor and major types of tension members ? **4**

   b) Design a single angle tension member to sustain a tension of 1,30,000 N. Use 18 mm diameter rivets. **10**

5. Design a double angle compression member to carry 150 kN load. The length of member between centre to centre of intersections is 4m. **14**

6. Design a simply supported beam to carry a uniformly distributed load of 44 kN/m. The effective span of beam is 8 meters. The effective length of compression flange of the beam is also 8 m. The ends of beam are not free to rotate at the bearings. **14**

7. a) Write a short note on effective lengths of compression members. **7**

   b) Explain in detail different loads considered for analysis and design of roof truss. **7**

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Seat No.

B.Arch. (Semester – V) (New) Examination, 2017
HISTORY OF ARCHITECTURE – V (CGPA Pattern)

Day and Date : Saturday, 6-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) *Questions No.* **1** *is* **compulsory**.
                  2) *Draw* **neat** *sketches* **wherever** *necessary.*

I. Fill in the blanks :   **7**
   a) Kanchanjunga apartment by Charles Correa Mumbai is located in _____
   b) The author of complexity and contradiction is _____
   c) Casa Mila is an example of _____ movement.
   d) Sony Building is designed by _____
   e) "Less is More" is coined by _____
   f) Villa Savoye is designed by _____
   g) _____ palace is an example of industrial revolution

II. Write short notes on **(any 3)** :   **15**
   1) International Style.
   2) Ronchamp Chapel
   3) Guggenheim museum at New York.
   4) Robert Venturi.

III. Answer in brief with neat sketches **(any 4) (12 marks each)** :   **48**
   1) Explain the works and philosophy of Ar Zaha Hadid and two works of her in brief.
   2) Explain how industrial revolution changed society in terms of social and economics. Explain new materials and construction technology from then on in brief.
   3) Explain the work and philosophy of Laurie Baker with the example of C.D.S. in brief.
   4) Describe the philosophy of Le Corbusier and explain two buildings of his in brief.
   5) Explain Arts and Crafts Movement in brief. Give an example.

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Seat
No.

B.Arch. (Semester – V) Examination, 2017
(New – CGPA)
BUILDING SERVICES – III

Day and Date : Monday, 8-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) Q.No. **1** and Q. No. **2** are **compulsory**.
2) Solve **any 4** questions from remaining.

1. Fill in the blanks.   **7**

   a) _____ is stated as opposition to flow of current.

   b) _____ filament is used in incandescent bulb.

   c) _____ volts is obtained from single phase supply.

   d) _____ are nothing but moving staircase.

   e) _____ is provided in lift to balance load being carried.

   f) Choke and starter are required in _____ type of lamps.

   g) _____ are used in air-conditioning to keep air free from dust, bacteria etc.

2. Write short notes.   **15**
   a) Neon lamps
   b) Cooling towers
   c) Counter weight of lift

3. Explain methods of mechanical ventilation in common use.   **12**

4. Explain electrical wiring in small 1bhk residence with sketch.   **12**

5. Explain working of escalators with sketch.   **12**

6. Give general consideration and rules for natural ventilation.   **12**

7. Explain with sketch Split air-conditioning system.   **12**

_____

Seat
No.

B.Arch. (Semester – V) (New-CGPA) Examination, 2017
ACOUSTICS

Day and Date : Friday, 12-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Note : 1) **All** questions are **compulsory**.
       2) Make suitable assumptions **wherever** necessary.

1. A) Fill in the blanks :   **7**

     1) Velocity of sound in air is _____ m/s.
        a) 344   b) 650   c) 297,600,000   d) 0

     2) Flutter is produced due to _____ phenomenon.
        a) Transmission   b) Diffraction
        c) Reflection   d) None of the above

     3) Wavelength is _____ proportional to Frequency.
        a) Directly   b) None of above
        c) Inversely   d) Equal

     4) Echo is produced due to _____ phenomenon.
        a) Transmission   b) Diffraction
        c) Reflection   d) None of the above

     5) _____ is used in optical model test to study sound behaviour.
        a) Sound source   b) Light source
        c) Liquid source   d) None of the above

     6) If human ear can not differentiate sound difference of ——————— dB.
        a) 50   b) 5   c) 25   d) None of the above

     7) If human ear exposed to _____ dB or more for longer duration can cause.
        a) 10   b) 80
        c) 45   d) None of the above

B) Calculate total absorption required using sabines formula and design a lecture hall for capacity of 300 people consider volume 4.5 m3/persons and Rt=0.8; use following absorption coefficient; give conceptual section and plan. **27**

1) Pop – 0.26

2) Plaster – 0.004

3) Glass wool – 0.15

4) Occupied seat – 0.42

5) Unoccupied seat – 0.18

6) Curtain – 0.12.

2. A) Optical model test and ripple tank method to study behaviour of sound. **12**

                    OR

B) Give Noise Control in mechanical system along with sketches. **12**

3. A) Explain with sketches two acoustical treatment at building scale. **5**

B) Explain attenuation of sound source due to distance for point and line source. **7**

4. Write short note on **any 3** : **12**

1) Transmission of structure born sound.

2) Ceiling profile design for direct sound.

3) Acoustical treatments for ac ducts.

4) Behaviour of sound in domical structure.

_____

SLR-F – 29

B.Arch. (Semester – V) (CGPA) Examination, 2017
Self Learning (HSS Course)
BUILDING BYELAWS (New)

Day and Date : Monday, 15-5-2017   Total Marks : 50
Time : 10.00 a.m. to 12.00 Noon

Note : 1) *Question No. **1, 2** are **compulsory**.*
       2) *Solve **any 2** questions from the remaining.*

1. Fill in the blanks.   **5**

    1) Minimum area for any habitable room is _____ sqm.

    2) _____ of the room means the vertical distance measured from the finished floor surface to the finished slab surface.

    3) _____ to be provided for the building exceeding 16m in height

    4) Minimum width of any bathroom is _____ m.

    5) Refuse area shall have minimum area of _____ sq m.

2. Short notes (**any 3**) :   **15**

    1) Floor space index.

    2) Off street parking.

    3) Habitable room.

    4) Fire protection.

3. Discuss the amenities and facilities to be provided in subdivision layout.   **15**

4. A) Write a note on minimum plot areas permissible for following row house, semidetached and detached housing.   **8**

    B) Write a note on transfer of development rights.   **7**

                OR

5. Explain the concept of F.S.I. and how is it important as a regulator for growth.   **15**

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Seat No.

B.Arch. (Semester – VI) (New-CGPA) Examination, 2017
BUILDING SERVICES – IV

Day and Date : Friday, 5-5-2017   Max. Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Note : 1) Q. No. **1** and Q. No. **2** are **compulsory**.
2) Solve **any four** questions from the remaining.
3) Draw **neat** sketches **wherever** necessary.

1. Fill in the blanks.   **7**
   1) Waste which does not rot termed as _____
   2) In sewage treatment plant grit removed in _____ chambers.
   3) _____ means artificial rearings or cultivation of earthworms.
   4) Trickling filters also known as _____
   5) Two pit latrines also termed as _____
   6) Name any one hazardous waste _____
   7) S.T.P. stands for _____

2. Write short notes on **any three.**   **15**
   1) Imhoff Tank.
   2) Utilisation of farm refuse.
   3) Biogas plant.
   4) Sewerage system.

3. What are the objectives of sewage treatment plant ?   **12**

4. Explain sewage diposal in unsewered areas ?   **12**

5. Describe the process of
   A) Composting   B) Incineration   **12**

6. Describe refuse disposal in multistory building.   **12**

7. Discuss collection of garbage at township level.   **12**

_____

SLR-F – 36

Seat No.	

B.Arch. (Semester – VI) (New-CGPA) Examination, 2017
SELF LEARNING (Technical Course)
Sustainable Building Materials

Day and Date : Tuesday, 9-5-2017 Max. Marks : 50
Time : 10.00 a.m. to 1.00 p.m.

Instructions *: 1) Make suitable assumptions **wherever necessary** and mention in your answer book.*
*2) Figures to **right** indicates **full** marks.*
*3) Question No. **1** is **compulsory** and solve **any 3** from **remaining**.*

1. A) Write short note on **any 3** : **15**

    1) Biodegradable building material

    2) Compressed stabilized earth block

    3) Solar passive building design

    4) Stabilizers.

    B) Explain field test for soil. **5**

2. Explain ferrocrete and sketch any three building component in ferrocrete. **10**

3. a) Explain use of lime in construction. **5**
    b) Explian composition of soil and their proportion. **5**

4. What is recycled material ? Explain with example. **10**

5. Give selection criteria for building material in sustainable building design approach. **10**

———————————

Seat
No.

B.Arch. (Semester – VI) (CGPA) Examination, 2017
THEORY OF STRUCTURE – VI (New)

Day and Date : Saturday, 13-5-2017   Max. Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) *Use of Scientific Calculator is **allowed**.*
               2) *Q. No. **1** and Q. No. **2** are **compulsory**. From remaining*
                  *questions solve **any four**.*
               3) *Figures to the **right** indicates **full** marks.*
               4) *Assume **suitable** data if necessary.*

1. Select the correct option for the following :   **8**

    1) Minimum spacing in reinforcement of Slab is

       a) 100 mm   b) 300 mm
       c) 450 mm   d) None

    2) In under reinforced section

       a) $X_u < X_{umax}$ b) $X_u = X_{umax}$
       c) $X_u > X_{umax}$ d) None

    3) Minimum numbers of bars required in square column

       a) 4   b) 6
       c) 8   d) None

    4) In working stress method, material

       a) Elastic   b) Plastic
       c) Brittle   d) None

2. Explain working stress method and limit state method.   **6**

3. Design simply supported RCC Slab for a hall 3 m × 8 m (inner dimension) with 230 mm thick wall. Assume live load of 4kN/m^2 and floor finish 1kN/m^2 use M 20 grade of concrete and Fe 415 steel.   **14**

4. A simply supported beam of length 5 m unsupported carries UDL of 10 kN/m. Analyse and design beam. Take M 20 grade of Concrete and Fe 415 Steel. **14**

5. Design a rectangular column of 5 m unsupported length, restrained in position and direction at both ends, to carry axial load of 1000 kN. Use M 20 grade concrete and Fe 415 Steel. **14**

6. Design Footing for axial load of 900 kN. SBC = 200 kN/m^2. Use M 20 grade of Concrete and Fe 415 Steel. **14**

7. Write down design steps for : **14**

   1) Two way slab

   2) Doubly reinforced beams.

_____

Seat No.

B.Arch. (Semester – VI) (New CGPA) Examination, 2017
URBAN PLANNING

Day and Date : Tuesday, 16-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

I. Fill in the blanks :   **(7×1=7)**

   1) _____ gave the concept of garden city.

   2) The capital city of Gandhi Nagar was planned by two Indian planners _____ and Prakash.M.Apte.

   3) Under use zoning, the percentage of area allocated for residential zone varies from _____

   4) Separate black and white strips provided at the road junction for pedestrians is known as _____

   5) The ratio of height of building to width of road will be _____ in case of 63 1/2 degree airplane under height zoning.

   6) FSI is the ratio of _____

   7) A narrow street or approach road with a dead end is known as _____

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

   1) Height zoning.

   2) Rectangular (grid iron) street system.

   3) Satellite town.

   4) Differentiate between detached and semidetached houses.

III. Answer the following (**any 4**) :   **(4×12=48)**

   1) Explain how the growth of town is influenced by the topography of the land.

   2) Explain in brief, the urban planning of Chandigarh city.

   3) Write in detail, the principles advocated by Patrick Geddes.

   4) Explain land use planning.

   5) Mention the disadvantages of traffic congestion and state the measures adopted to avoid traffic congestion.

   6) Describe the contribution of Laurie Baker in the rural housing.

_____

Seat No.

B.Arch. (Semester – VI) (CGPA) Examination, 2017
ESTIMATING SPECIFICATION AND COSTING – I (New)

Day and Date : Thursday, 18-5-2017   Max. Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

N.B. : 1) **All** questions are **compulsory**.
        2) Non programmable calculator is **allowed**.

1. Solve **any four** of the following :   **8**

   a) M.S. grill work

      1) Sq.m.   2) Cum   3) Rmt   4) No.

   b) Vitrified skirting work

      1) Sq.m.   2) Cum   3) Rmt   4) No.

   c) How many bricks required in 10 cum volume (Brick size = $20 \times 10 \times 10$ cm) ?

      1) 4500   2) 5000

      3) 5500   4) None of above

   d) How many cement bag required in 10 cum volume M10 concrete ?

      1) 78.96 bags   2) 62.04 bags

      3) 43.42 bags   4) None of above

   e) Half brick work in cement mortar 1 : 4

      1) Sq.m.   2) Cum   3) Rmt   4) No.

2. Prepare rate analysis for following **any two** activity.   **12**

   1) M15 cement concrete.

   2) Brick masonary in 1 : 5 cement mortar.

   3) Internal plaster in 1 : 4 cement mortar.

3. Calculate quantity of following item of work and enter the same in standard format of measurement sheet with brief description of item (Refer Fig. 1). **35**
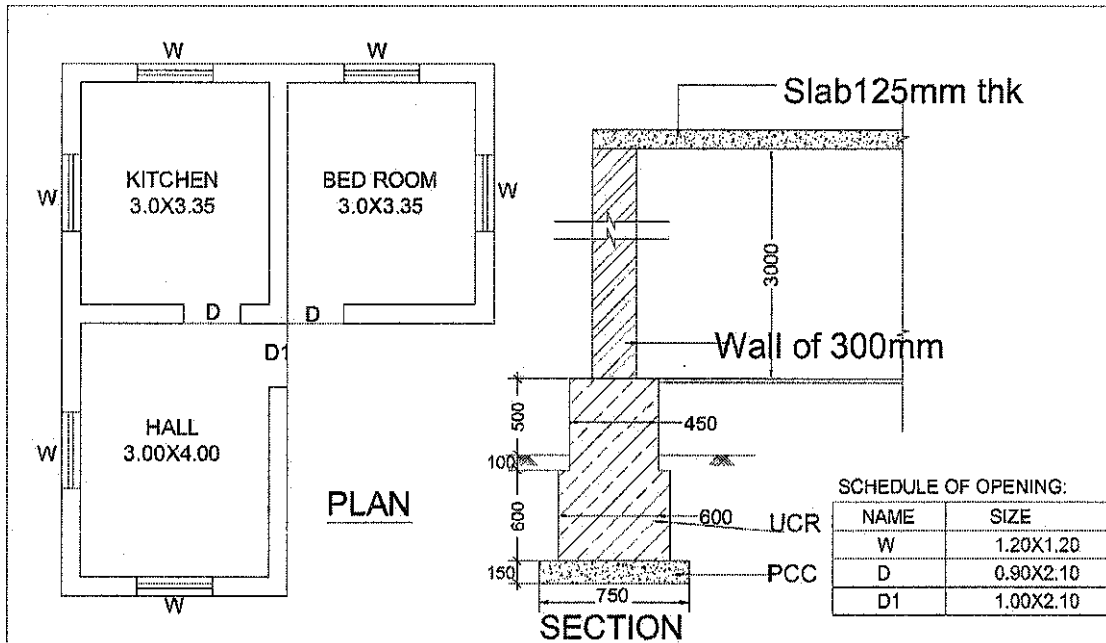
Fig. 1

a) Excavation for foundation in hard rock.

b) Backfilling in murum.

c) Brick masonary in superstructure.

d) Vitrified flooring.

e) Windows.

4. Prepare abstract sheet for above residential building with following given rate. **15**

a) Excavation for foundation = Rs. 750/cum

b) Backfilling in murum = Rs. 750/cum

c) Brick masonary in superstructure = Rs. 5300/cum

d) Vitrified flooring = Rs. 1250/sqm

e) Windows = Rs. 2250/sqm

SLR-F – 40

Seat No.	

B. Arch (Semester – VI) (Old) Examination, 2017
BUILDING SERVICES – IV

Day and Date : Friday, 5-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

> **Note** : 1) Make suitable assumptions **wherever** necessary and mention in your answer book.
>
> 2) Figures to **right** indicates **full** marks.
>
> 3) Questions **1** and **2** are **compulsory** and solve **any 4** questions from the remaining.

1. Fill in the blanks :   **7**

   1) When decomposition of organic matter takes place in presence of oxygen it is known _____

   2) In _____ two sets of sewer is laid and it caries both sewage and storm water.

   3) _____ are constructed to dispose off human exert a without water carriage system.

   4) _____ is an aerobic biological sewage treatment process.

   5) The process of settling suspended particles is known as _____

   6) Non putrescible solid waste constituents either combustible or non combustible waste known as _____

   7) _____ is defined as amount of oxygen required to oxidize the organic matter by strong oxidising agent under aerobic condition.

2. Write short note on **any 3** : **15**

    1) Aqua-privy.

    2) Chlorination of sewage.

    3) Sewerage system.

    4) Grit chambers.

3. A) Draw a neat sketch of septic tank and explain its working. **6**

    B) What is meant by activated sludge process in sewage treatment ? **6**

4. Write short note on self purification of stream and sewage sickness. **12**

5. Discuss rural sanitation in detail. **12**

6. Discuss the method of disposal of septic tank effluent. **12**

7. Draw with a neat sketch showing layout of sewage treatment plant. **12**

_____

Seat
No.

B.Arch. (Semester – VI) (Old) Examination, 2017
ACOUSTICS

Day and Date : Tuesday, 9-5-2017   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) **All** questions are **compulsory**.
                   2) Make suitable assumptions **wherever** necessary.

1. A) Fill in the blanks :

   1) Velocity of sound in air is _____ m/s.
      a) 344   b) 650
      c) 297,600,000   d) 0

   2) Flutter is produced due to _____phenomenon.
      a) Transmission   b) diffraction
      c) Reflection   d) None of above

   3) For line source sound attenuates by _____ dB at every doubling.
      a) 3   b) 6
      c) 9   d) 0

   4) Echo is produced due to _____phenomenon.
      a) Transmission   b) Diffraction
      c) Reflection   d) None of above

   5) _____is used in optical model test to study sound behaviour.
      a) Sound source   b) Light source
      c) Liquid source   d) None of above

   6) If human ear cannot differentiate sound difference of _____dB.
      a) 50   b) 5
      c) 25   d) None of the above

7) If human ear exposed to_____dB or more for longer duration can cause mental fatigue.

a) 10　　　　　　　　　　　　b) 80

c) 45　　　　　　　　　　　　d) None of the above　　　　**7**

B) Calculate total absorption required using sabines formula and design a lecturehall for capacity of 150 people consider volume 4 m^3/person and Rt=0.8; use following absorption coefficient ; give conceptual section and

1) Pop-0.26

2) Plaster-0.004

3) Glass wool-0.15

4) Occupied seat-0.42

5) Unoccupied seat-0.18

6) Curtain-0.12.　　　　　　　　　　　　　　　　**27**

2. A) Optical model test and ripple tank methods to study behaviour of sound.　　**12**

OR

B) Give acoustical design consideration for multiplex design.　　**12**

3. A) Explain with sketches two acoustical treatment at component scale.　　**5**

B) Explain attenuation of sound source due to distance for point and line source.　　**7**

4. Write short notes on **any 3** :　　**12**

1) Structure born sound and its control.

2) Ceiling profile design for direct sound.

3) Diffraction phenomenon.

4) Behaviour of sound in domical structure.

_____

B.Arch. (Semester – VII) (New) Examination, 2017
ADVANCE ESTIMATING SPECIFICATION AND COSTING – II

Day and Date : Monday, 8-5-2017   Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

N.B. : 1) Question No. **1, 2** and **3 compulsory**, and attempt **any two** of Question No. **4, 5** and **6**.
2) Non programmable calculator is **allowed**.
3) Assume suitable data, if **needed**.

1. Prepare detail estimate of following building items of attached drawing   **35**

    i) RCC Footing

    ii) RCC Slab and Slab Beam

    iii) Brick work in superstructure

    iv) Internal Plastering

    v) Internal Flooring.

2. Prepare abstract sheet of following building items of attached drawing   **10**

    i) RCC Footing, Rate = Rs. 6,500/- per cum

    ii) RCC Slab and Slab Beam, Rate = Rs. 7,500/- per cum

    iii) Brick work in superstructure, Rate = Rs. 5,500/- per cum

    iv) Internal Plastering, Rate = Rs. 250/- per sqm

    v) Internal Flooring, Rate = Rs. 850/- per sqm.

3. Write a short note of following **(any two)** :   **15**

    A) Plinth Are method

    B) Cubic Content method

    C) Unit base method.

4. Write a short note of following **(any two)** :   **10**

    A) Revised Estimate

    B) Work charge Establishment

    C) Detail specification.

5. What are the different types of specifications ? Elaborate any one types of specifications with example. **10**

6. Distinguish between Earnest money deposit and security Deposit. **10**

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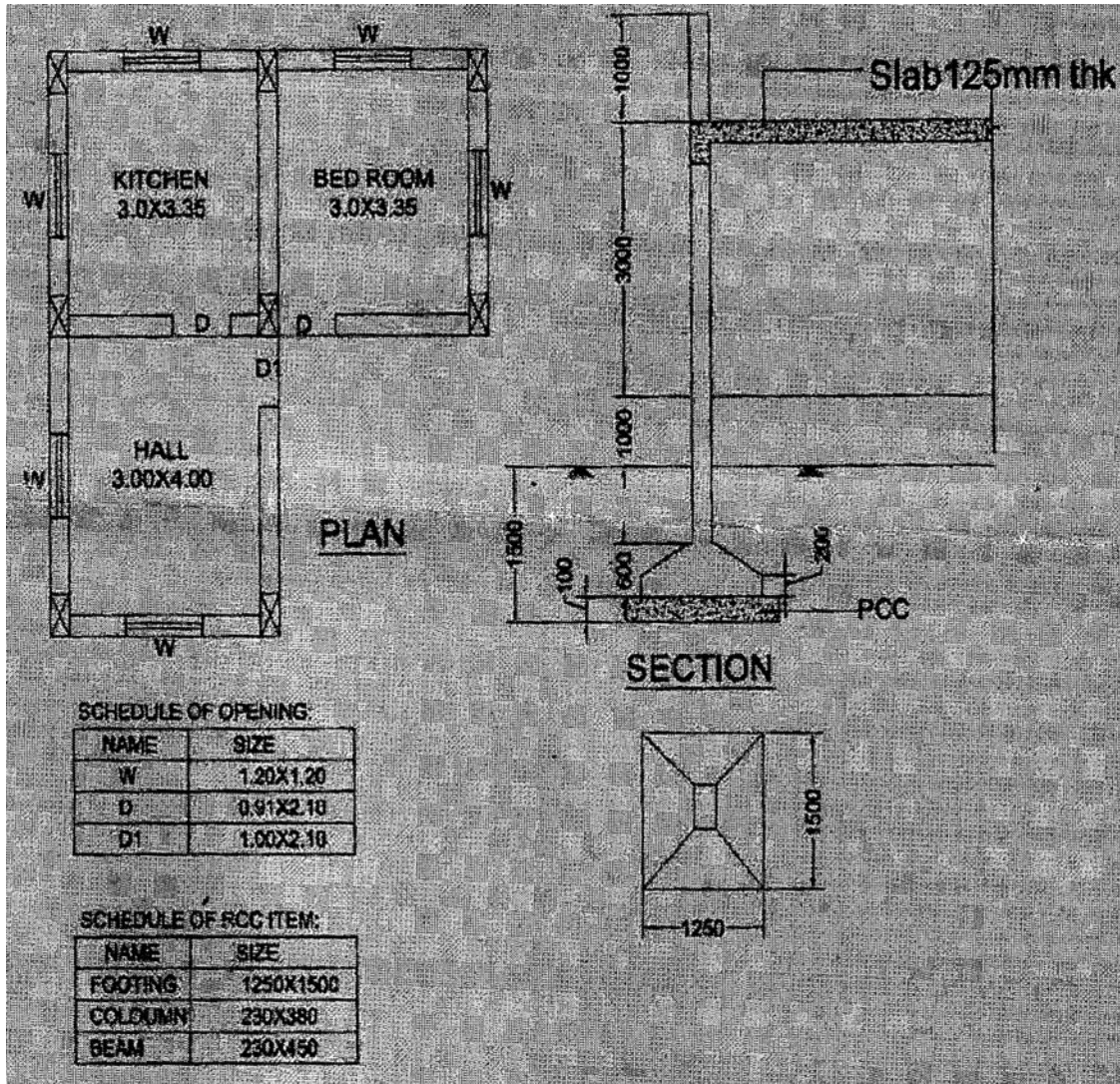
Seat No.	

B.Arch. (Semester – VII) Examination, 2017
THEORY OF STRUCTURE – VII (New)

Day and Date : Friday, 12-5-2017   Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

Instructions : 1) **Use** of **IS 456** and Scientific Calculator is **allowed**.
          2) Q. No. **1** and **2** are **compulsory**. From remaining questions solve
           any four.
          3) Figures to the **right** indicate **full** marks.
          4) Assume suitable data if **necessary**.

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

   1) _____ piles are used where the loads are not very heavy.

     a) Friction   b) Undereamed

     c) Sheet   d) Wooden

   2) Grid Slab is economical for the span _____

     a) 5 m – 8 m   b) 8 m – 15 m

     c) 10 m – 25 m   d) None

   3) Minimum number of bars for circular piles are _____

     a) 4   b) 6

     c) 8   d) 10

   4) Pre-stress means that the stress is introduced in structural member _____

     a) before   b) after

     c) in continuous   d) none

   5) Raft foundation has reinforcement _____

     a) Only top   b) Only bottom

     c) Top and bottom   d) None

2. A) Write a note on Waffle slab.   **5**

   B) What are the advantages of prestressing ?   **5**

3. Explain in detail design steps for the circular water tank with flexible base. The tank is open on top. Use M20 grade concrete and Fe 415 steel. **15**

4. Explain in detail :

   a) Design concept of pile foundation.

   b) Folded plates.

   c) Gantries and cranes.

5. A) What are the precautions should be taken while planning a structure in earthquake prone area ? **8**

   B) Describe advantages of framed structure over a load bearing structure. **7**

6. Calculate the stresses at top and bottom fibres for beam as shown in figure. A prestressing force of 1800 KN applied at e = 150 mm. The beam loaded 50 KN/m. **15**
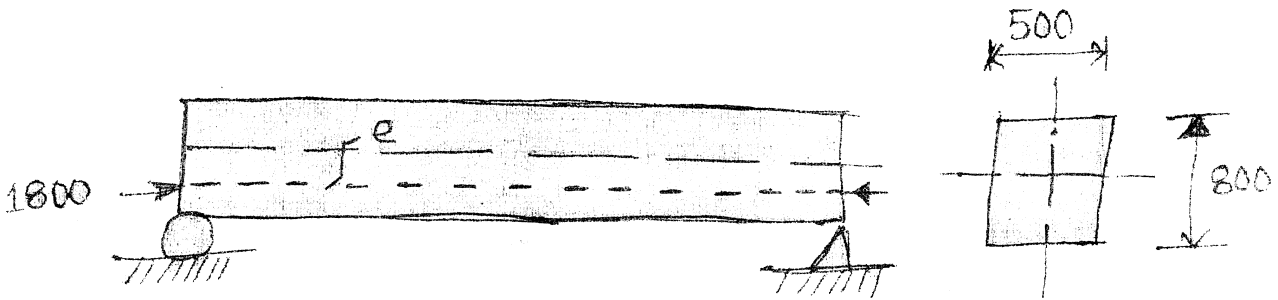
7. Write a note on : **15**

   a) Folded plates

   b) Plate girders

   c) Shells.

_____

SLR-F – 52

Seat
No.

B.Arch. (Semester – VII) (Old) Examination, 2017
ADVANCE ESTIMATING SPECIFICATION AND COSTING – II

Day and Date : Monday, 8-5-2017　　　　　　　　　　Max. Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

N.B. : 1) *All* questions are *compulsory*.
　　　　 2) *Non programmable calculator is **allowed***.
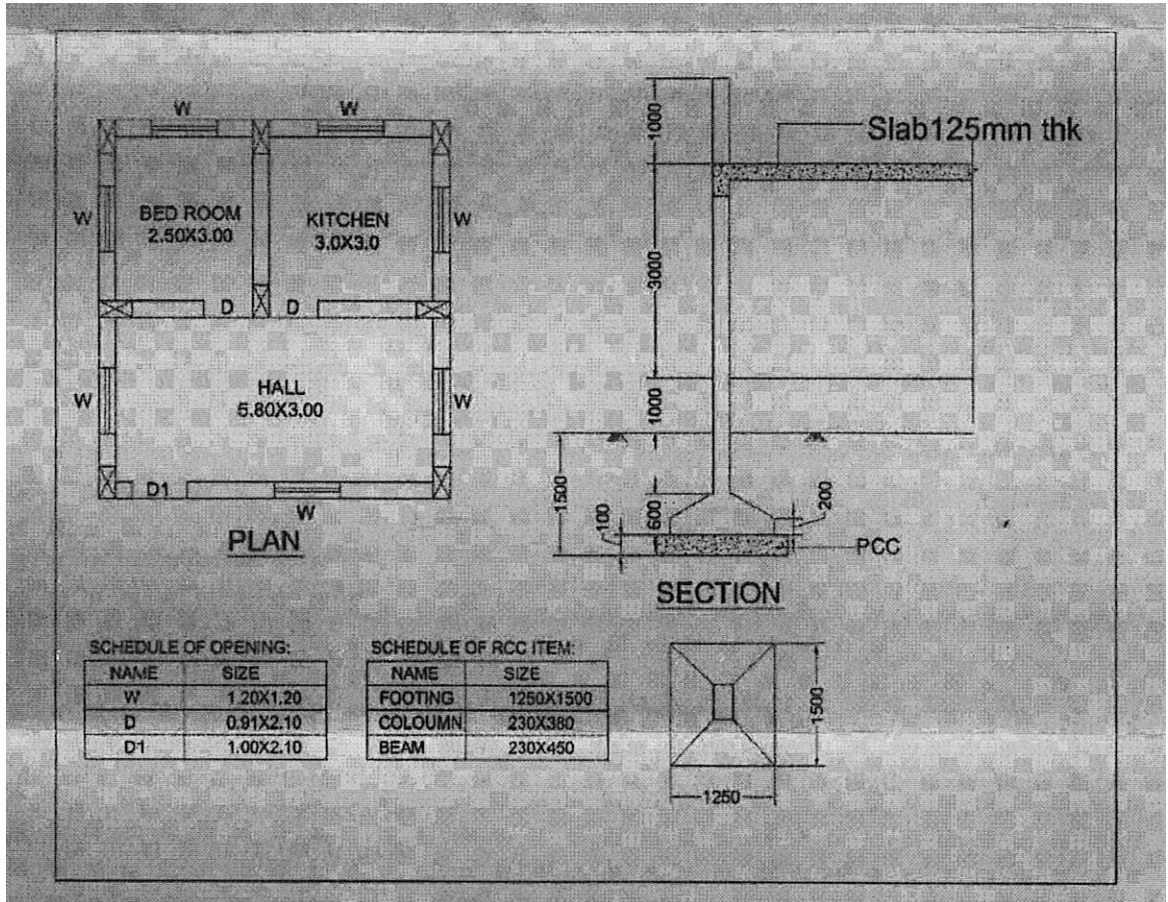　　　　 3) ***Assume** suitable data, if **required***.

1. Write the answer of following **any two** :　　　　　　　　　　**12**

   a) Explain Cubical Content estimate.

   b) Which is the most reliable estimate, explain with min. 3 points ?

   c) Which are the factors that plays important role in calculating in estimate, explain how ?

2. Write in brief specifications on workmanship (**any three**) :　　　　　**18**

   a) M20 RCC slab.

   b) Half Brick work CM 1 : 6.

   c) Internal cement plaster CM 1 : 5.

   d) Colour wash.

3. Prepare the rough estimate for a proposed commercial complex for a municipal corporation for the following data.　　　　　　　　　　**30**

   A) Plinth Area = 500 m^2/floor.

   B) Ht of each storey = 3.5 m.

   C) No. of storeys = G + 2.

   D) Cubical content rate = Rs. 1000/m^3.

E) Provided for a following as a percentage of structured cost.
   a) Water supply and sanitary arrangement – 8%
   b) Electrification – 6%
   c) Fluctuation of rates – 5%
   d) Contractors profit – 10%
   e) Petty supervision and contingencies – 3%.

<div align="center">OR</div>

3. Prepare detail estimate of following building items of attached drawing. **30**

   1) RCC Footing.

   2) RCC Slab and Slab Beam.

   3) Brick work in superstructure.

   4) Internal Flooring.

4. Distinguish between earnest money deposit and security deposit. **10**

5. Write a short note of the following (**any two**) : **10**

   A) Revise Estimate.

   B) Supplementary Estimate.

   C) Work Charge establishment.

   D) Schedule "A" and Schedule "B".

PLAN

- BED ROOM 2.50X3.00
- KITCHEN 3.0X3.0
- HALL 5.80X3.00

SECTION

Slab125mm thk

PCC

SCHEDULE OF OPENING:

NAME	SIZE
W	1.20X1.20
D	0.91X2.10
D1	1.00X2.10

SCHEDULE OF RCC ITEM:

NAME	SIZE
FOOTING	1250X1500
COLOUMN	230X380
BEAM	230X450

Seat
No.

B.Arch. (Semester – VII) (Old) Examination, 2017
THEORY OF STRUCTURE – VII

Day and Date : Friday, 12-5-2017   Total 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** are **compulsory** from the remaining question solve (**any 2**) from section **I** and **II**.

3) Figures to the **right** indicate **full** marks.

SECTION – I

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

   1) Stresses developed in the member at the time of transportation or erection are known as

      a) Handling stress   b) Bending stress   c) Shear stress

   2) Trapezoidal footing is adopted when _____ is restricted.

      a) Height of the footing   b) Width of footing   c) Load of the footing

   3) Code of practice for the RCC structure is _____

      a) IS 3370   b) IS 800   c) IS 456

   4) The minimum grade of concrete for water storage structure as per IS code is _____

      a) M 25   b) M 20   c) M15

   5) As per IS 456 the no. of bar in column for the circular section is _____

      a) 4   b) 6   c) 8

2. a) Write a note on flat slabs with sketch in detail.   **8**

   b) Write a note on raft foundation in detail.   **7**

3. Design a rectangular water tank with flexible base for a capacity of 1,50,000 lit. the tank rest on a firm level ground the height of the tank including free board of 180mm should not exceed 2.5m. The tank is open at top. Use M25 and Fe 415 steel. **15**

4. a) Write a note on floded plates. **7**

   b) Write down the design steps for under reamed pile foundation. **8**

SECTION – II

5. Calculate the stresses at tops bottom fibres for beam shown in fig. **16**

Elevation

Section
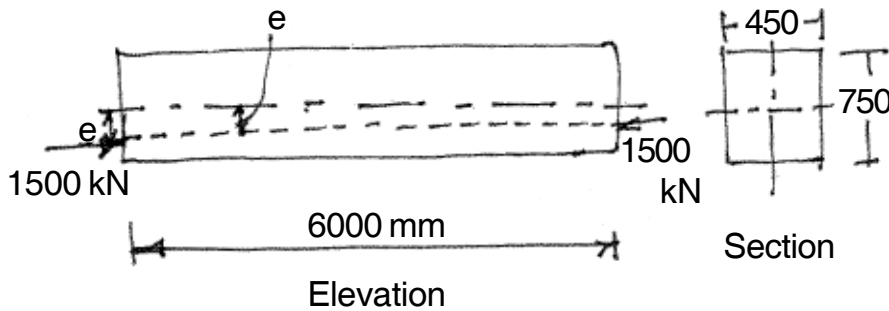
A prestressing force 1500 kN applied at e = 140 mm. The beam is loaded with 50 kN/m.

6. Write in detail design of rigid frames and portal frames for RCC and steel structures. **12**

7. a) Explain in detail earthquakes forces on the different structure. **6**

   b) State and explain the gantries and cranes. **6**

8. Write a note on : **12**
   a) Shells.
   b) Losses in prestressing.

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Seat No.

B.Arch. (Semester – VII) (Old) Examination, 2017
ADVANCED ARCHITECTURAL DESIGN – VII

Day and Date : Monday, 22-5-2017   Total Marks : 150
                Tuesday, 23-5-2017
                Wednesday, 24-5-2017
Time : 10.00 a.m. to 4.00 p.m.

Instructions : 1) *The candidates are allowed to go to visit lavatory otherwise all are required to remain in the Examination Hall continuously for* ***six*** *hours of Examination.*

2) *The supervisors should make arrangement to supply eatables, ordered by the candidate from outside allow the candidates to consume eatables and have cold or* ***hot*** *drinks in the Examination Hall.*

3) *The candidate should be allowed to do coloring work up to the* ***last minute*** *and paper should be collected after they are dried. While students may leave the Examination Hall after time is over.*

4) *The candidate can* ***leave*** *the Examination Hall after completion of paper with proper information to supervisors.*

5) ***All*** *students shall submit only their basic plans and design scheme drawn on tracing paper at the end of first day.*

6) *The above submitted drawing shall not be* ***returned*** *to them next day.*

7) ***Any*** *serious deviation from original scheme is not permitted.*

8) ***All*** *other rough sketches shall be given back to the candidate along with the paper, next day.*
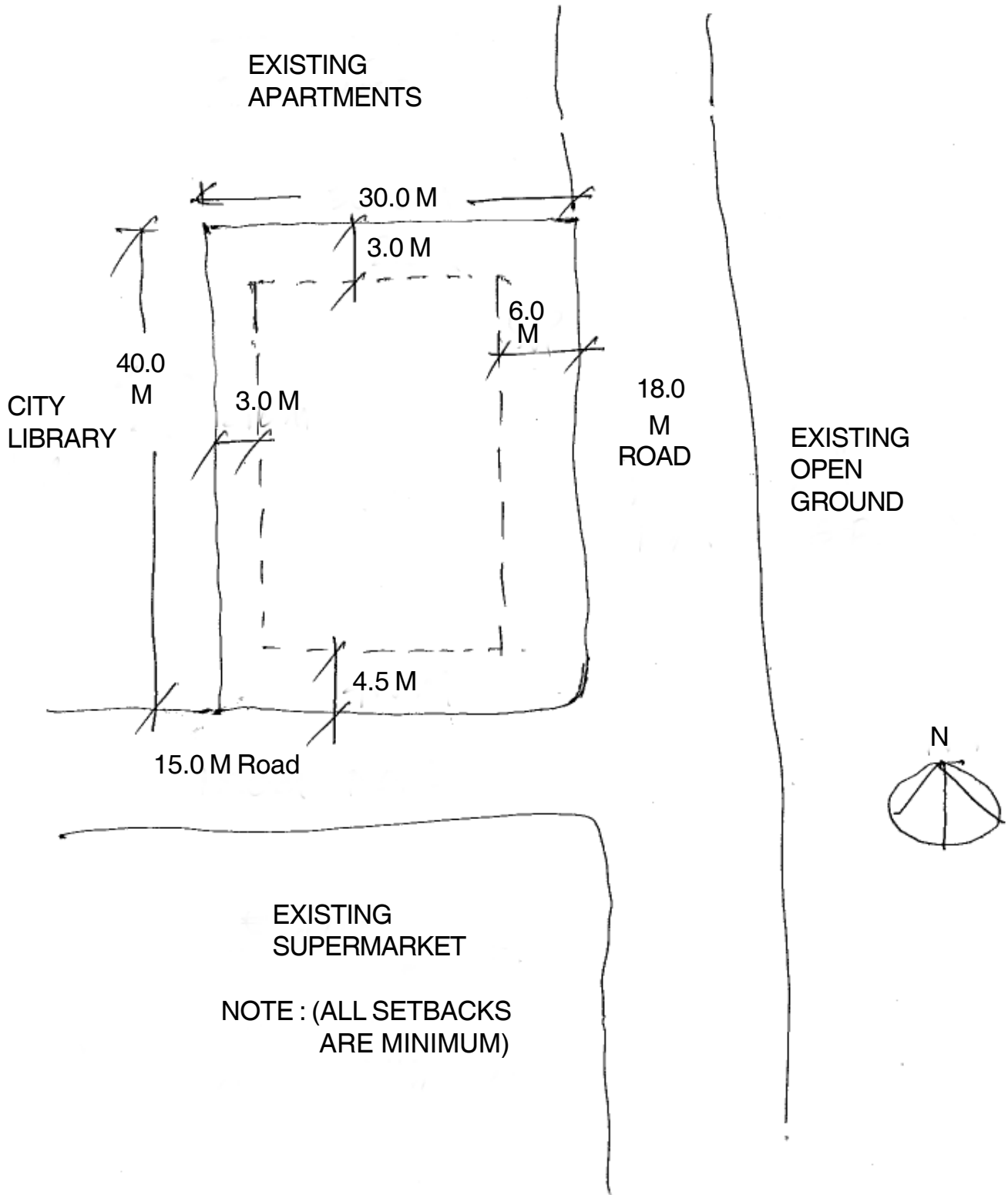
Club House at Latur.

Latur a District Place having a population of not less than 10 lakhs, having industrial area, agricultural produce market place and business place requires to have club house for higher income group.

Design Programme.

1. Porch, Entrance, Waiting, reception adequately provided.

2. Administration office – 65 sqm.

3. Chairman's Cabin – 45 sqm with attached toilet and anteroom.

4. Director Conference hall – 50 sqm with pantry waiting.

5. Vice Chairman's cabin – 25 sqm with attached toilet.

6. Pool Table hall – 4 tables – 50 sqm.

7. Carrom hall – 6 tables – 60 sqm.

8. Gym hall – 60 sqm.

9. Spa & massage – 35 sqm.

10. Table Tennis hall – 4 tables – 70 sqm.

11. Badminton hall with seatings – 300 sqm.

12. Outdoor lawn tennis Court.

13. Adequate toilets for both the sexes.

14. Cards hall – 50 sqm.

15. Restaurant with kitchen, Pantry, Store, Utility – 60 seats.

Drawing Requirements :

A) 1) Site Plan with parking landscape – 1 : 300   **30**

  2) All floor plans – 1:100   **50**

  3) Two sections – 1:100   **20**

  4) Two road side Elevations – 1:100   **20**

  5) Sketch View   **15**

  6) Concept   **15**

EXISTING
APARTMENTS

30.0 M

3.0 M

6.0
M

40.0
M

CITY
LIBRARY

3.0 M

18.0
M
ROAD

EXISTING
OPEN
GROUND

N

4.5 M

15.0 M Road

EXISTING
SUPERMARKET

NOTE : (ALL SETBACKS
ARE MINIMUM)

Seat No.

B.Arch. (Sem. – VIII) (New) Examination, 2017
PROFESSIONAL PRACTICE – II

Day and Date : Friday, 5-5-2017   Total Marks : 80
Time : 3.00 p.m. to 6.00 p.m.

I. Fill in the blanks :   **(1×8=8)**

   i) Architects Act was enacted in the year _____

   ii) _____ is an offer made by one party to another for execution of specified work at a specified cost.

   iii) IIA stands for _____

   iv) _____ is the person to whom the dispute and differences are referred for necessary adjudication.

   v) In limited competition, approximately _____ architects are invited to participate.

   vi) The Land for the beneficial enjoyment of which the right of easement exists is called the _____

   vii) The Land Acquisition Act was enacted in _____

   viii) FSI is the ratio of _____

II. Write short notes on (**any 3**) :   **(3×4=12)**

   i) Earnest money

   ii) Continuous and discontinuous easement

   iii) Arbitral tribunal

   iv) Limited competition.

III. Answer the following (**any 5**) :   **(5×12=60)**

   i) Explain in detail the duties of an architect towards client and society.

   ii) Differentiate between item rate and lumpsum tender.

   iii) What is arbitration ? Explain the advantages and disadvantages of setting the disputes by this method.

   iv) Explain the role of council of architecture in architectural competitions.

   v) Explain the term easement and its characteristics.

   vi) Write in brief, municipal bye laws regulated for a residential building in Solapur.

_____

B.Arch. – IV (Semester – VIII) (Old) Examination, 2017
PROFESSIONAL PRACTICE – II

Day and Date : Friday, 5-5-2017   Total Marks : 80
Time: 3.00 p.m. to 6.00 p.m.

1. Fill in the blanks :   **(8×1=8)**

   i) _____ is an offer to do a particular work specified time and amount.

   ii) IIA stands for_____

   iii) The amount of earnest money varies from _____ of the estimated cost of the building.

   iv) Floor area ratio is the ratio of _____

   v) Under Land Acquisition Act 1984, solatium allowance is raised up to.

   vi) Arbitrator is the person to whom the disputes and differences are referred for _____

   vii) In _____ type of competition 5-10 number of architects can participate.

   viii) _____ heritage is benefitted by the provision of the Easement Act.

2. Write short notes on (**any 3**) :   **(3×4=12)**

   i) Duties of an Architect

   ii) Lumpsum tender

   iii) Duties of Arbitrary Tribunal

   iv) Architectural copyright

   v) Advantages of Architectural Competition.

3. Write in brief (**any 5**) **(5×12=60)**

    a) Explain Professional Conduct (code of conduct) Regulations, 1989 for Architects.

    b) Explain in brief the method of assessment and declaring the award in Architectural Competitions.

    c) Explain in detail the bye-laws enacted by Solapur Municipal Corporation for a residential building.

    d) What is meant by Arbitration ? Explain the advantages and disadvantages of settling the disputes by the above method.

    e) Explain in detail Tender documents.

    f) Explain Easement right with an example. Write in detail the different types of easement.

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Seat No.

B.Arch. (Semester – VII) (New) Examination, 2017
ENVIRONMENTAL DESIGN

Day and Date : Thursday, 4-5-2017

Total Marks : 100

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

Instructions : 1) **Draw** sketches **wherever** necessary.
2) Solve **any 5** questions from the given.
3) **Assume** suitable data **wherever** necessary.

1. City has a beautiful lake suggest and design surrounding for various users. **20**

2. Describe different types of housing types with the help of neat sketches. **20**

3. Explain with help of sketches any famous building/location in our city. **20**

4. Design a new interactive space with different elements for a kindergarten. **20**

5. Explain with an volumetric study an example of site with F.S.I. 1.5 for a office. **20**

6. Explain importance transportation in city development. **20**

7. Write a note on subdivision layout and factors considered in planning. **20**

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