Seat No.

B.Arch. (Semester – I) (CGPA) Examination, 2016
THEORY OF STRUCTURE – I

Day and Date : Monday, 25-4-2016   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) The equation used to evaluate truss is
      a) m = 2j + 3   b) m + 3 = 2j   c) m = 2j – 3   d) m – 2j = 3
   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) Force is nothing but
      a) Mass × Velocity   b) Mass/Velocity
      c) Mass × Acceleration   d) Mass/Acceleration

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

3. a) Write a note on system of forces.   **6**
   b) Find resultant in magnitude and direction of the following forces acting away
      from a point.   **8**
      1) 250 N force acting 35° North of West.
      2) 200 N force acting 45° North of West.
      3) 280 N force towards West.
      4) 400 N force acting 30° towards West of South.

4. a) State and explain different types of supports.   **6**
   b) The resultant of two forces, one of which is double the other is 260 N. If the
      direction of the larger force is reversed and the other remains unaltered, the
      magnitude of the resultant reduces to 180 N. Determine the magnitude of the
      forces and the angle between the force.   **8**

5. a) Explain in detail load bearing structure and framed structure. **6**

   b) Forces of 5, 6, 7, 8 and 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**

6. a) A simply supported beam of 8 m span has udl of 25 KN/m throughout the length and four point loads of 20 KN, 40 KN, 60 KN and 80 kN at 1, 3, 5 and 7m from left hand support. Find end reactions. **10**

   b) State and explain Lami's theorem. **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**

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Seat
No.

B. Arch. (Semester – II) Examination, 2016
THEORY OF STRUCTURE – II (CGPA)

Day and Date : Thursday, 28-4-2016   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 :

   1) In Hooks law, Stress is directly proportional to   **7**
      a) Strain   b) Bending moment
      c) Both   d) None

   2) The moment of inertia for a circular section about its CG is
      a) $Pi \times d^4/64$ b) $Pi \times b^3/12$ c) $b^3d^3/12$ d) $bd^2/12$

   3) The force of resistance offered by a body against the deformation is called as
      a) Strain   b) Elasticity
      c) Stress   d) None of the above

   4) The maximum bending moment at centre with S.S. beam carries point load "w" at Centre is
      a) $wl/4$ b) $wl/2$
      c) $wl^2/4$ d) None of the above

   5) The ratio of direct stress to volumetric strain is known as
      a) Bulk modulus
      b) Shear strain
      c) Modulus of Elasticity
      d) None of the above

   6) The Moment of inertia for a Rectangular section about its CG is
      a) $bd^4/64$ b) $b \times d^3/12$ c) $b^3d^3/12$ d) $bd^2/12$

   7) Bending moment with point load "P" at free end for cantilever beam is
      a) $Pl/4$ b) Pl
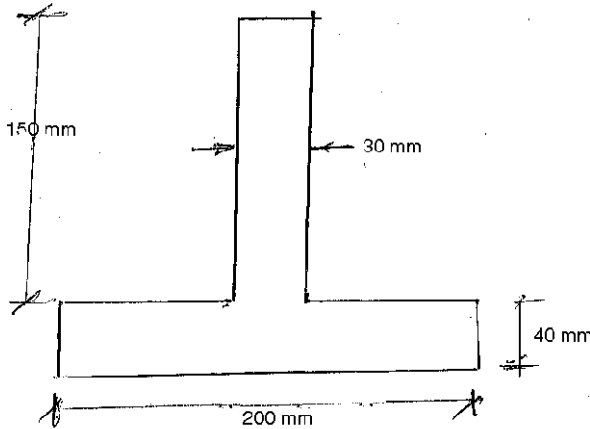   c) Pl^2 d) None of the above

2. Write a short note on : **15**
   a) Point of Contra flexure in SS beam.
   b) Parallel axis theorem.
   c) Poisson's ratio, shear modulus, bulk modulus.

3. A bar shown is sketch subjected to axial tensile force of 100 kN. Calculate total elongation of $\epsilon = 1.5 \times 10^5$ MPa. Also calculate stress in AB, BC, CD. **12**
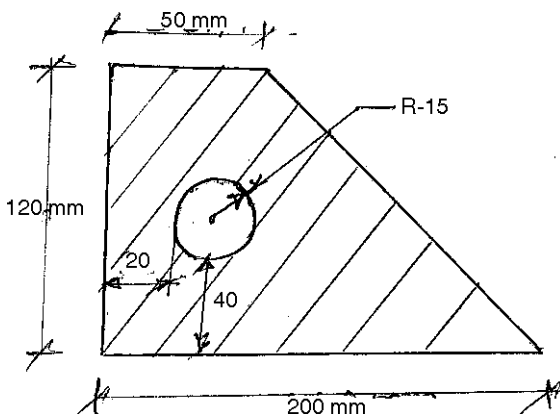
4. Calculate the centroid of following : **12**

5. Draw SFD and BMD for the following beam **12**
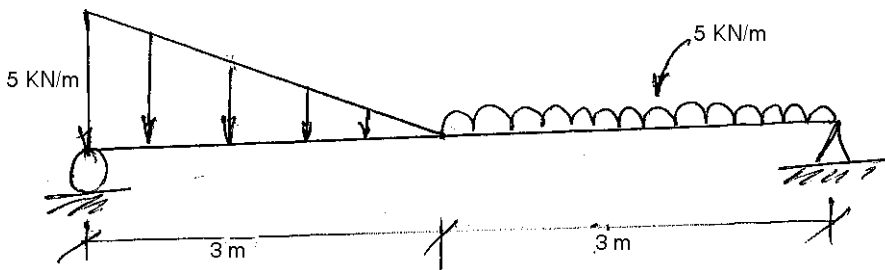
6. Calculate the moment of inertia at its horizontal and vertical axis passing through its C.G. **12**

7. Explain in detail stress – strain curve and Hooks law. **12**

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SLR-A – 7

Seat No.	

B.Arch. (Semester – III) (New – CGPA) Examination, 2016
CLIMATOLOGY AND ENVIRONMENT – I

Day and Date : Wednesday, 27-4-2016 Max. 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** indicate **full** marks.
3) Question **1** and **2** are **compulsory**, answer **any 4** from **remaining**.

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

    1) 21-June on 23.5 N latitude experiences _____ day on earth.

       a) Longest

       b) Shortest

       c) Equinox

       d) None of the above

    2) Wind velocity is measured by _____

       a) Pitot tube

       b) Wind gauge

       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 varies between _____ degC in hot and dry climates.

       a) 32-43   b) upto 27   c) 21-27   d) upto 22

P.T.O.

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) Temperature is measured in _____

   a) Degree Celsius   b) BTU

   c) Watts   d) Celsius

7) DBT is measured in _____

   a) Outdoor

   b) Bottle

   c) Shade

   d) None of the above

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

   1) Micro climate.

   2) Bio Climatic chart.

   3) Temperature.

   4) Psychometric chart.

3. A) Find WBT RH AH when VP-1.5 kN/kg and DBT is 40° C using psychometric chart.   **6**

   B) What is macro climate, explain in short.   **6**

4. Explain hot and dry desert climate.   **12**

5. How to select design strategies for warm and humid climate ?   **12**

6. Explain how huge topography will change wind flow and temperature around the hilly region.   **12**

7. Explain global wind pattern in detail.   **12**

Psychometric chart
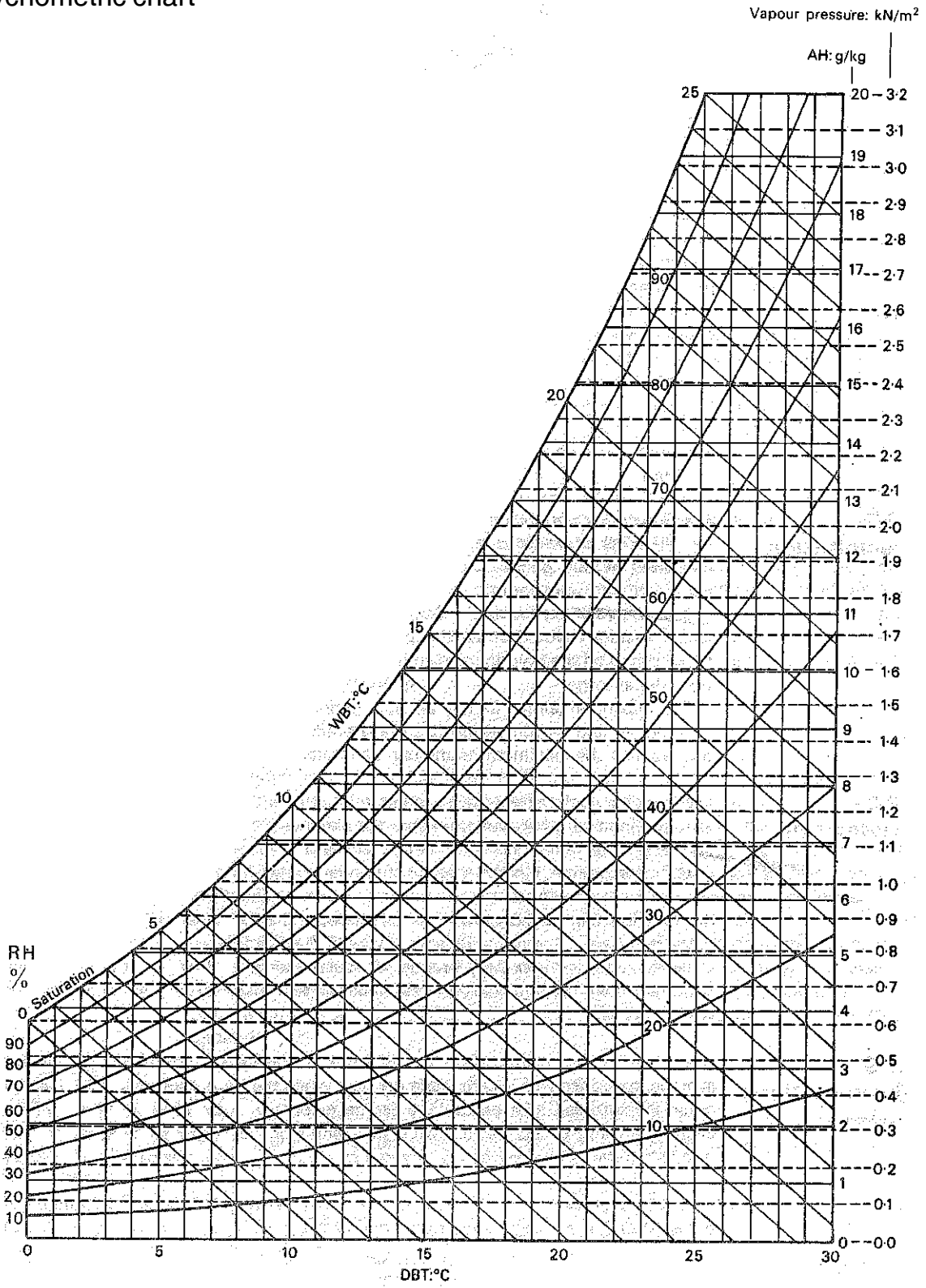
SLR-A – 18

Seat
No.

B.Arch. (Semester – IV) (New – CGPA) Examination, 2016
BUILDING SERVICES – II

Day and Date : Tuesday, 26-4-2016   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) Desirable temperature of potable water is _____ °C
   b) Turbidity is carried out to examine _____ test of water.
   c) _____ device that regulates the flow of water.
   d) Hardness of water is examined to carried out a _____ test of water.
   e) Sand filters are used _____ method of water treatment process.
   f) Wells are the form of _____ source of water.
   g) _____ are the device to measure the quantity of water.

2. Short notes (**any 3**) :   **15**
   a) Solar water heater
   b) Water softening
   c) Bib cock
   d) Stand pipes.

3. Explain any two method of systems of supply of water.   **12**

4. Explain different types of valves used for water supply.   **12**

5. Which are the methods of distribution of water ? Explain any two.   **12**

6. Calculate size of o/H water tank for 50 persons with neat sketch.   **12**

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

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B. Arch. (Semester – V) Examination, 2016
THEORY OF STRUCTURE – V (New)

Day and Date : Wednesday, 27-4-2016　　　　　　　　　　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) The equation used to evaluate truss is

      A) $m = 2j + 3$　　B) $m + 3 = 2j$　　C) $m = 2j - 3$　　D) $m - 2j = 3$

   2) The difference between gross diameter and nominal diameter for the rivets upto 25 mm diameter is

      A) 1.0 mm　　　　B) 1.5 mm　　　　C) 2.0 mm　　　　D) 2.5 mm

   3) The effective length of compression member effectively held in position at both ends but Restrained against rotation at one end

      A) 0.8 L　　　　B) L　　　　　　C) 1.2 L　　　　D) 1.5 L

   4) Minimum pitch of the rivets shall not be less than

      A) 1.5 d　　　　B) 2.0 d　　　　C) 2.5 d　　　　D) 3.0 d

2. Explain in detail all rolled steel sections.　　　　　　　　　　　　**6**

3. a) What are the advantages and disadvantages of riveted joints ?　　　**4**

   b) Determine strength and efficiency of joint when 16 mm diameters power driven rivets connecting 16 mm plates joined by double cover butt joints using 10 mm thick cover plate. Consider permissible tensile strength of 150 MPa.　　**10**
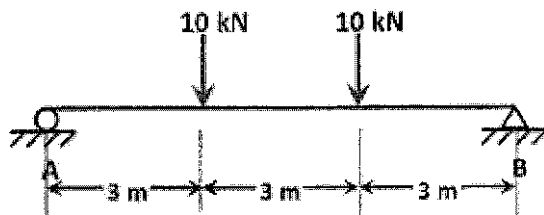
P.T.O.

4. a) Write a short note on tension members and various forms. **4**

   b) Design a tension member using two angle sections to carry 180 kN when both angle are connected one side of gusset plate. **10**

5. Analyze and design a compression member "AB". **14**
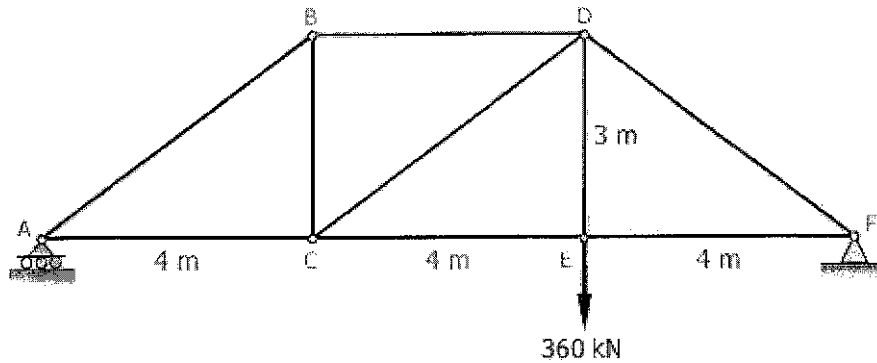
6. Design a suitable section for following beam which is laterally supported. **14**

7. a) What are different types of trusses and loads acting on trusses ? **8**

   b) Explain all components of trusses with examples and sketch. **6**

_____

Seat No.

B.Arch. (Semester – VI) (New) Examination, 2016
ACOUSTICS

Day and Date : Thursday, 28-4-2016
Time : 10.00 a.m. to 1.00 p.m.

Max. Marks : 70

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

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

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

    2) Echo is produced due to _____ phenomenon.
    a) transmission b) diffraction c) reflection d) none of above

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

    4) The time taken by sound to diminish is called
    a) reverberation time b) dead time
    c) flutter d) none of the above

    5) Thin wall barrier is _____ scale strategy.
    a) site b) component c) building d) none of the above

    6) 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) Sound produced by _____ is structure born sound.
    a) bell ring b) railway
    c) ac duct d) none of the above **7**

   B) Calculate total absorption required and design a theatre for capacity of 900 people, consider volume 5 m³/person and Rt = 1.2; 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) Explain sound reflection and sound diffraction. **12**

OR

   B) Give design guidelines for open air theatre. **12**

3. A) Explain with sketches optical model test. **5**

   B) Explain with sketches two acoustical material with installation for ceiling
   and wall. **7**

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

   1) Airborn sound and its control.
   2) Sabines formula.
   3) Propagation of sound.
   4) Eco and flutter.

_____

Seat No.

B.Arch. (Semester – VI) (Old) Examination, 2016
BUILDING SERVICES – IV

Day and Date : Tuesday, 26-4-2016   Total 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.
4) Figures to the **right** indicate **full** marks.

1. Fill in the blanks :   **8**
   1) When decomposition of organic matter takes place in absence of oxygen it is known as _____ process.
   2) Non putrescible waste termed as _____
   3) C.O.D. indicates _____
   4) Grit is removed in _____ chambers in sewage treatment plant.
   5) Name any one sewage disposal method.
   6) Two pit latrines termed as _____
   7) In sewage treatment plant grease and fats is removed in _____ tanks.
   8) Waste water from bathroom and kitchens termed as _____.

2. Write short notes on (**any 3**) :   **12**
   1) Aerobic process.
   2) Incinerators.
   3) Analysis of sewage.
   4) Utilization of farm refuse.

3. Enlist the method of disposal of solid waste. Explain any one method in detail.   **12**

4. What is meant by waste water ? Describe in brief treatment of waste water.   **12**

5. What is meant by aqua privy ? Draw neat sketch and explain its working in detail.   **12**

6. Explain the importance of vermiculture in detail.   **12**

7. Explain why garbage disposal chutes are installed in highrise buildings. Draw neat sketch and explain its component parts.   **12**

8. What are the characteristics of industrial waste ? What care should be taken while its disposal ?   **12**

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Seat No.

B.Arch. (Semester – VI) (Old) Examination, 2016
URBAN AND REGIONAL PLANNING – I

Day and Date : Tuesday, 3-5-2016　　　　　　　　　　　　Total Marks : 80

Time :　10.00 a.m. to 1.00 p.m.

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

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

　　a) _____ prepared the town plan for Radburn city in New-Jersey.

　　b) _____ is situated on the banks of the river Sabramati.

　　c) The length of the cul-de-sac is _____

　　d) At road junction, for the safety of pedestrian _____ are provided for crossing the road.

　　e) HUDCO stands for _____

　　f) _____ roads are actually by-pass roads.

　　g) T.D.R. is a tool used for _____

　　h) Le-Corbuisier was the town planner for _____ city.

II. Answer **any 6** from following questions.　　　　　　　　　　**(6×12=72)**

　　1) Explain with example the scattered type growth of town.

　　2) Explain the concept of "Linear city" laid by Soria. Y. Mata.

　　3) Explain in detail how the growth of town is influenced by topography.

　　4) Explain the different types of zoning.

　　5) "Slum is an social evil" explain.

　　6) What are the causes of road accidents ? Explain with neat sketches.

　　7) Write short notes on (**any 3**) :

　　　　1) Horizontal growth.

　　　　2) Garden city.

　　　　3) Apartments and sky scrapers.

　　　　4) Grid iron road pattern.

_____

Seat
No.

B.Arch. (Semester – VII) Examination, 2016
ENVIRONMENTAL DESIGN

Day and Date : Monday, 25-4-2016   Max. Marks : 100

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

Instructions : 1) *Assume suitable data **wherever** necessary.*
2) *Draw sketches **where** necessary.*
3) *Solve **any 5** questions from the given **7**.*

1. What provisions amenities would you suggest for a neighbourhood of 10000 population ? Explain in detail.   **20**

2. Describe the types of housing that you know.   **20**

3. Sketch a cluster of 4 units of 100 sq. m each for bank officers. Assume other data of your own.   **20**

4. What do you mean by environmental design ? Describe the immediate environment of your college campus.   **20**

5. Explain with sketches any 1 eco- friendly building that you know.   **20**

6. What is F.S.I. ? How is it extremely important as a regulator for growth ?   **20**

7. Suggest a volumetric study for the following site with an F.S.I. of 2 for an office building.   **20**

SLR-A – 56
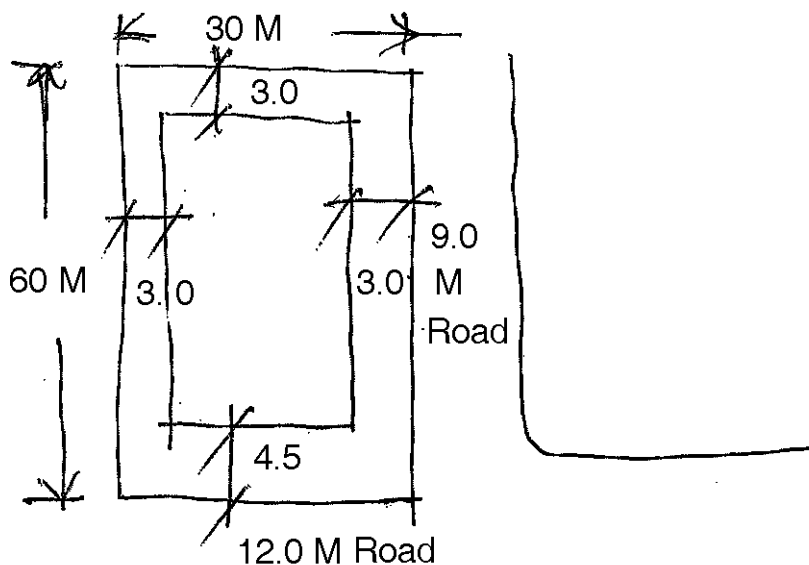
Seat
No.

B. Arch. (Semester – VIII) Examination, 2016
PROFESSIONAL PRACTICE – II

Day and Date : Tuesday, 26-4-2016   Total Marks : 80

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

Instructions : 1) Q. No. **I** and Q. No. **II** are **compulsory**.
2) Answer **any 5** from the remaining questions.

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

1) Architects Act, 1972 is an Act provided for _____ of architects and for matters concerned there with.

2) _____ is an offer in writing.

3) In Limited competition, _____ number of architects can participate.

4) The amount of Earnest amount varies from _____ of the estimated cost of the project.

5) _____ is issued to the contractor after the expiry of defect liability period.

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

1) What are the two types of easement ?

2) What is meant by sole arbitrator ?

3) Define repair.

4) Define contract.

5) Name any one type of tender.

II. Write short notes on (**any 4**) :   **20**

1) Duties of an architect.

2) Lumpsum tender.

3) Duties of arbitral tribunal.

4) Natural rights.

5) Architectural copyright.

P.T.O.

III.   What are the various services rendered or offered by an architect ?   **10**

IV.   What is tender ? Explain in detail the procedure for opening tender.   **10**

V.   Differentiate between Arbitration, Mediation and Conciliation.   **10**

VI.   Explain the necessity of conducting architectural competition and their types.   **10**

VII.   Explain in detail municipal bye laws for residential building in Solapur city ?   **10**

VIII.   Explain the term Easement and its types.   **10**

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Seat
No.

B.Arch. (Semester – III) (Old) Examination, 2016
ARCHITECTURAL DESIGN – III

Day and Date : Wednesday, 11-5-2016　　　　　　　　　　　　Max. Marks : 100
Time : 10.00 a.m. to 4.00 p.m.

Instructions : 1) *Students are asked to submit* **all** *the sheets at the end of the* **first** *day.*
　　　　　　　　2) *Assume suitable data and scale* **wherever** *necessary.*

Art Gallery at Kolhapur

To promote art and culture of the city, the corporation has proposed to construct a art gallery in the heart of the city. As an architect you are asked to design the gallery considering climatic conditions, prevalent in the city.
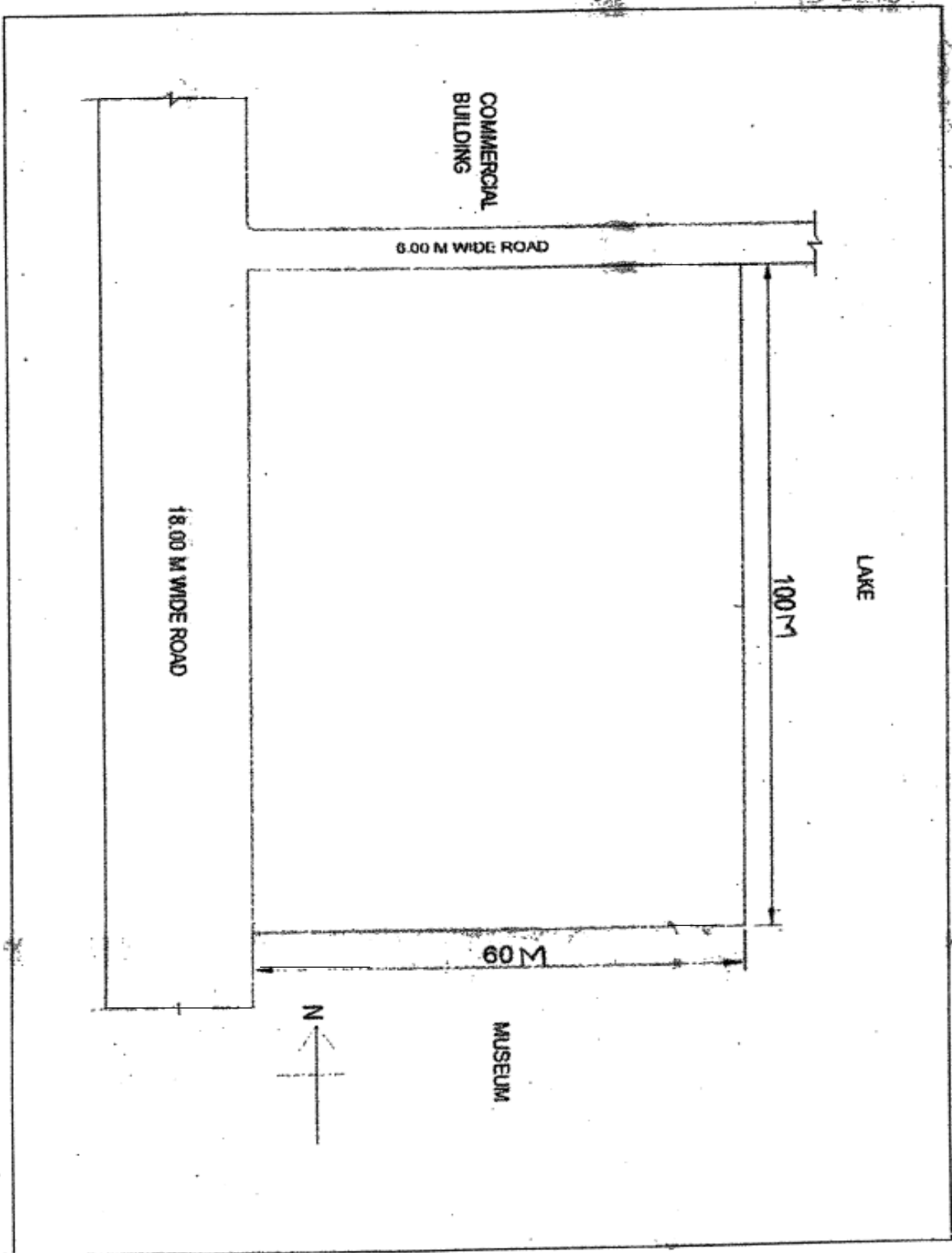
1. Architectural programme :

   a) Entrance lobby and waiting area.　　– As per Design

   b) Display area – 2 no.　　　　　　　– 100.00 sq Mts each

   c) Audio visual room – 1 no.　　　　　– 50.00 sq Mts each

   d) Semi covered and open workshop
      area for 20 persons.　　　　　　– 50.00 sq Mts each

   e) Office.　　　　　　　　　　　　– 15.00 sq Mts

   f) Store.　　　　　　　　　　　　 – 30.00 sq Mts

   g) Toilets　　　　　　　　　　　 – As per Requirement.

2. Site margin (minimum) :

   Front – 6.0 mts, all other sides – 3.0 mts.

3. Drawing requirements :

   a) Concept.　　　　　　　　　　　　　　　　　　　　　　　　**10**

   b) Detailed site plan (1 : 200).　　　　　　　　　　　　　　**20**

   c) All floor plans (1 : 100).　　　　　　　　　　　　　　　**30**

   d) Min 2 Elevations.　　　　　　　　　　　　　　　　　　**15**

   e) Min 2 Sections.　　　　　　　　　　　　　　　　　　　**15**

   f) View.　　　　　　　　　　　　　　　　　　　　　　　　**10**

P.T.O.

COMMERCIAL BUILDING

6.00 M WIDE ROAD

18.00 M WIDE ROAD

100 M

60 M

LAKE

N

MUSEUM

Seat
No.

B.Arch. (Semester – IV) (New) (CGPA) Examination, 2016
**ARCHITECTURAL GRAPHICS – IV**

Day and Date : Thursday, 28-4-2016   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 **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**
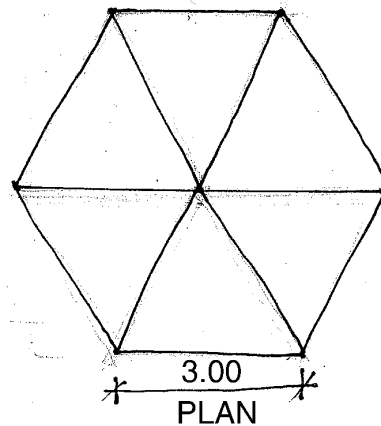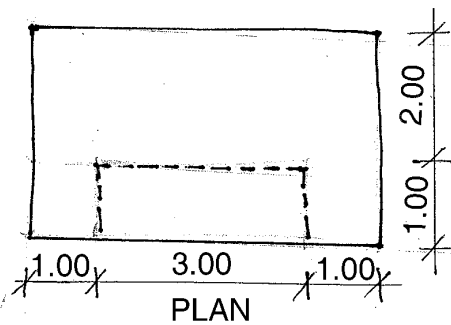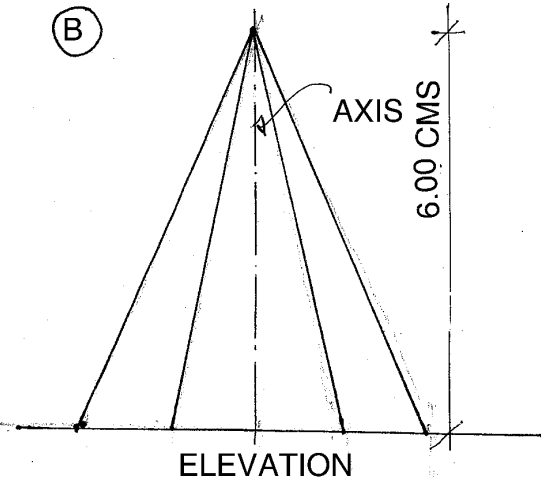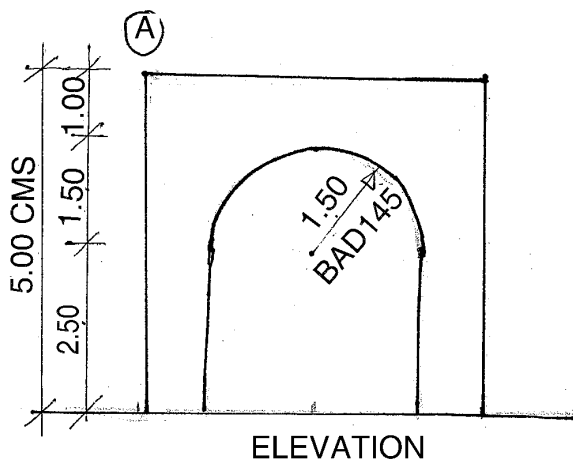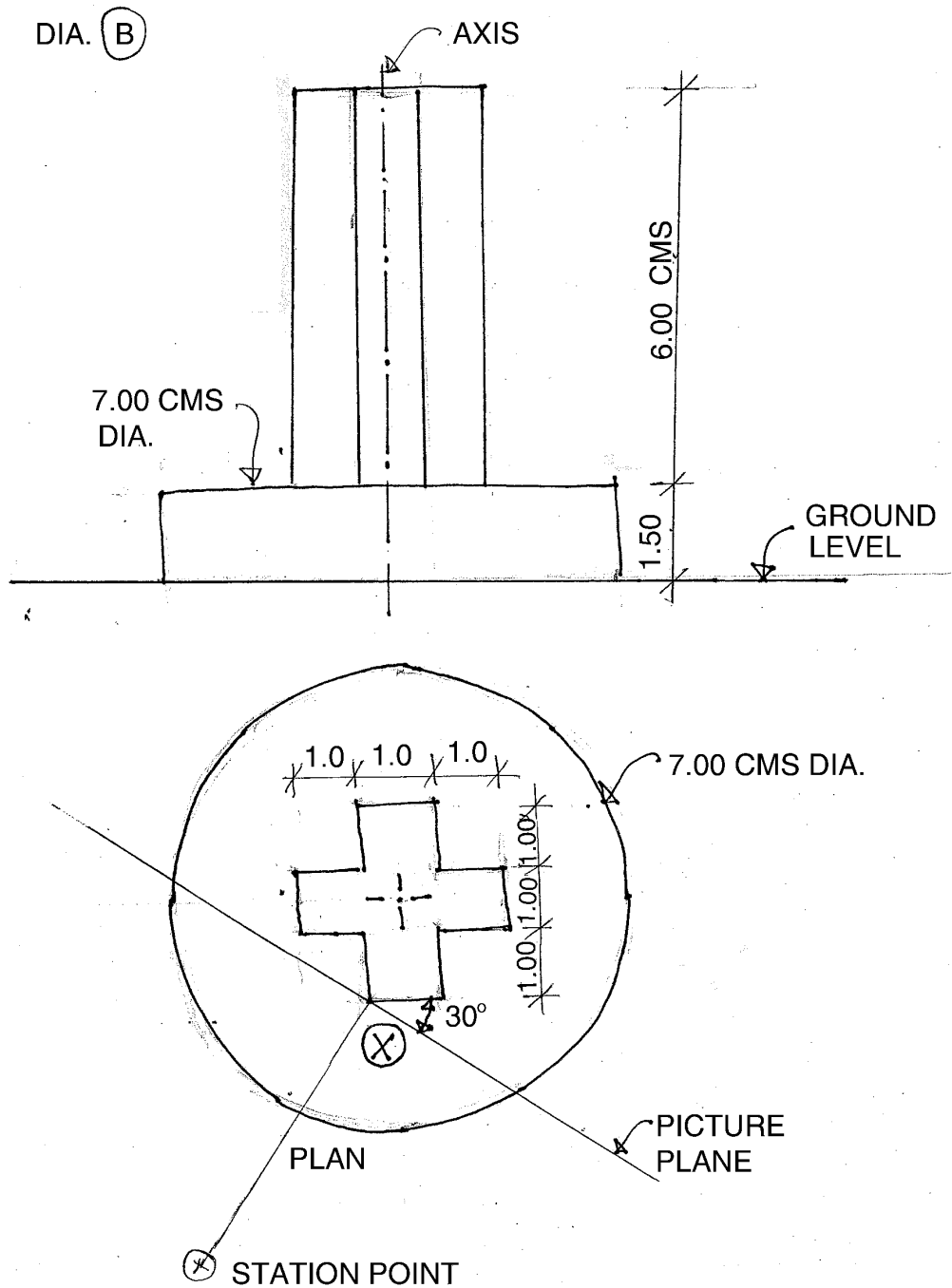
2. Draw perspective view of the given object by observing points in Dia. B. **20**

   a) A plane makes an angle as shown in Figure

   b) The picture plane touches the object

   c) Station point is 150 mm away from the 'X'
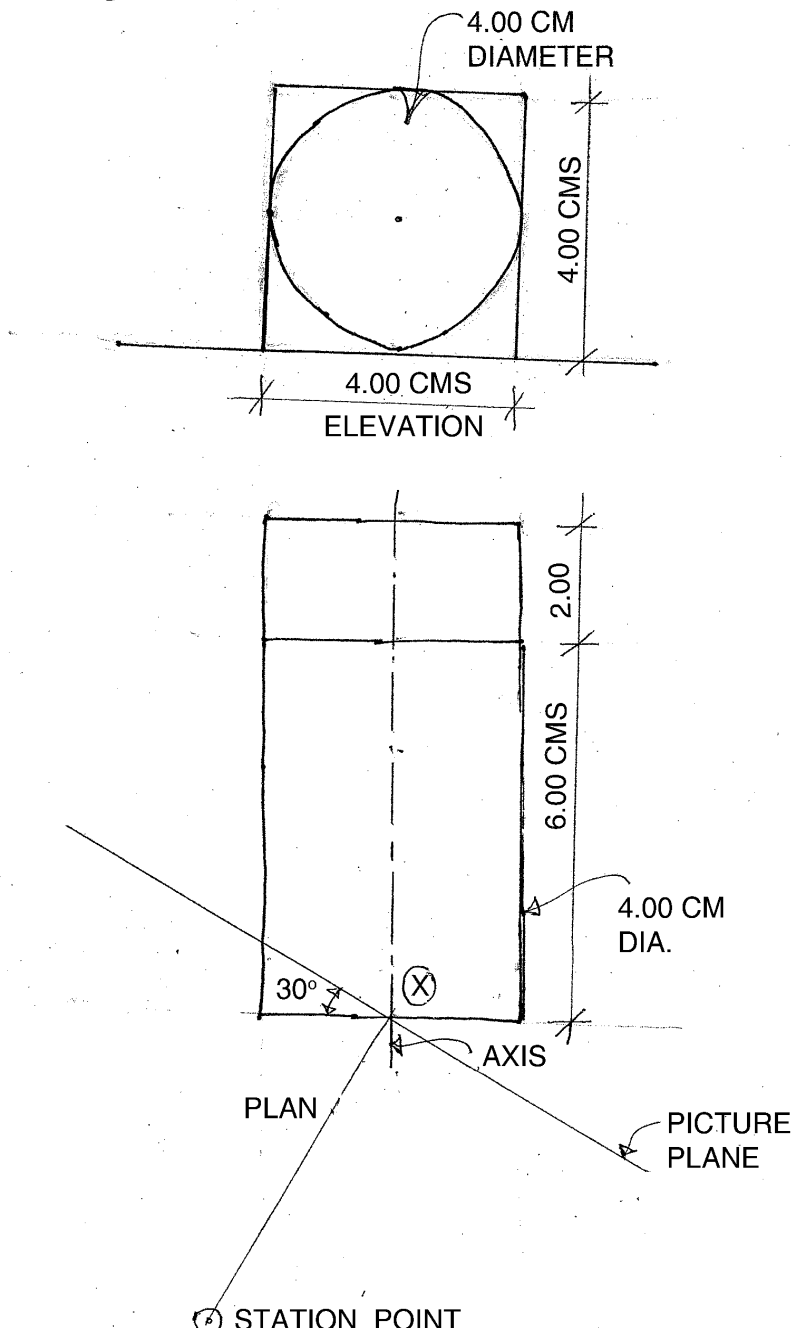
   d) The eye level is 120 mm above ground level.

DIA. (B)

AXIS

6.00 CMS

7.00 CMS DIA.

1.50

GROUND LEVEL

1.0 1.0 1.0

7.00 CMS DIA.

1.00 1.00 1.00

30°

(X)

PICTURE PLANE

PLAN

(X) 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 160 mm away from picture plane
   c) Eye level is 100 mm away and above ground level and draw shades and shadows in perspective view.

DIA. Ⓒ

4.00 CM
DIAMETER

4.00 CMS

4.00 CMS
ELEVATION

2.00

6.00 CMS

4.00 CM
DIA.

30°   Ⓧ

AXIS

PLAN

PICTURE
PLANE

Ⓢ STATION POINT

SLR-A – 2

Seat No.	

B.Arch. (Semester – I) (CGPA) Examination, 2016
HISTORY OF ARCHITECTURE – I

Day and Date : Wednesday, 27-4-2016　　　　　　　　　　Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) Figures to the **right** indicate **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) 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.

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

    1) Egyptian columns.

    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 meant by ziggurat ? Sketch and explain ziggurat in ur. **12**

5. What are characteristic 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**

―――――――――――

Seat No.

B. Arch. (Semester – IV) Examination, 2016
THEORY OF STRUCTURE – IV (NEW-CGPA)

Day and Date : Tuesday, 3-5-2016　　　　　　　　　　　　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) Assumption of the pure bending of beam related material is

　　　　a) homogeneous　　　　　　　　　b) isotropic

　　　　c) both a) and b)　　　　　　　　　d) none

　　2) Bending of beam occurs under

　　　　a) Axial load　　　b) Transverse load　　c) Direct load　　d) None

　　3) Compared to "T" section, "I" sections are _____ in stress resistance.

　　　　a) Weak　　　　　b) Stronger　　　　c) Medium　　　d) None

　　4) In working stress method, material

　　　　a) Elastic　　　　　　　　　　　　b) Plastic

　　　　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) $wL^4/(2EI)$

　　6) For No Tension condition in circular section of diameter D, core is _____ from below.

　　　　a) D/2　　　　　b) D/6　　　　　c) D/3　　　　d) None

　　7) The stresses produced in bending beam is given by

　　　　a) Mxy/E　　　　　　　　　　　　b) Mxy/I

　　　　c) MxI/y　　　　　　　　　　　　d) None of above　　　**P.T.O.**

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

   a) Explain concept of core section of rectangular section.

   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 m long with both ends fixed ? Column is "I" section with flange 250 mm × 20 mm and web 350 mm × 20 mm. Take E = 2 × 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.
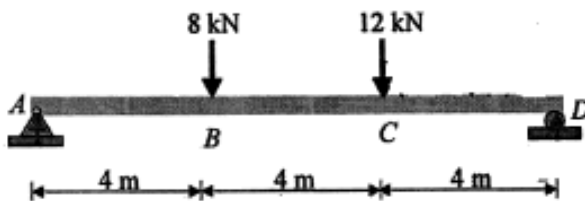
   c) Derive the equation for core of section for circular and rectangular section.

   d) Find the slope and deflection for the following beam if EI = 60 × 10^3 KNm^2.
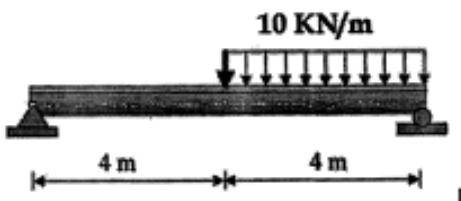
   e) Find the slope at A and deflection at C for the following beam if E = 2 × 10^5 N/mm^2, I = 5.5 × 106 mm^4.

———————————

SLR-A – 22
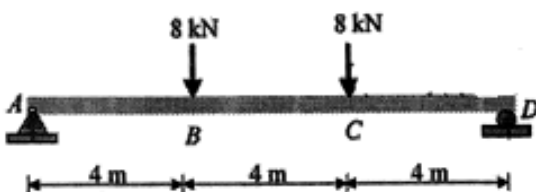
B. Arch. (Semester – IV) (CGPA) Examination, 2016
HISTORY OF ARCHITECTURE – IV (New)

Day and Date : Saturday, 7-5-2016 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**

   1) Prayer in Islam is termed as _____

   2) The founder of Slave dynasty is _____

   3) Ibrahim Rauza was designed by Ar. _____

   4) Mughal dome called as _____ dome.

   5) First Mosque built in India is _____

   6) Muslim religion was founded by _____

   7) Southern Gateway of Jami-Masjid at Fatehpur Sikri _____

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

   1) Minarets 2) Squinch

   3) Kiosks 4) Five pillars of Islam.

3. Explain with neat sketch Qutub Minar. **12**

4. Sketch and explain Panch Mahal in Fatehpur Sikri. **12**

5. Explain with neat sketch "Taj Mahal" at Agra. **12**

6. Explain architectural features of covered mosque at Gulbarga. **12**

7. Explain the architectural characters of colonial architecture in India. Explain with suitable example. **12**

_____

Seat No.

B.Arch. (Semester – IV) (Old) Examination, 2016
BUILDING SERVICES – II

Day and Date : Tuesday, 26-4-2016　　　　　　　　　　　Max. Marks : 80

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

Instructions : 1) *Question No.* **1** *is* **compulsory**. *Solve* **any 6** *questions from* **remaining**.

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

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

　　1) _____ is the most commonly used coagulant in the water treatment process.

　　　　a) Carbon　　　　　b) Alum　　　　　c) Copper oxide

　　2) _____ is the device which is used to tap the water from mains.

　　　　a) Hydrants　　　　b) Ferrule　　　　c) Solar water heater

　　3) In aeration process, the water gets intimate contact with _____.

　　　　a) Air　　　　　　b) Carbon　　　　c) Sand

　　4) To determine quantity of water _____ is used.

　　　　a) meters　　　　　b) filters　　　　c) valves

　b) Explain in **one** sentence :　　　　　　　　　　　　　　　　　　**4**

　　1) Wholesome water.

　　2) Filtration.

　　3) Ferrule.

　　4) Aquifers.

2. Write a short note on **any 3** :   **12**

   1) Stop Cock.

   2) Fire Hydrants.

   3) Sluice Valve.

   4) Solar water heater.

3. Explain in detail what is softening of water and state its advantages.   **12**

4. a) Explain any three parameters of physical test of water.   **6**

   b) Explain any two types of taps used for water supply.   **6**

5. Explain with neat sketches, "Types of water Intakes".   **12**

6. Explain different types of distribution systems of water supply.   **12**

7. Design a overhead water tank for 20 flats. Draw neat sketches with all necessary
   sections.   **12**

8. Explain different types of pipes used for distribution of water.   **12**

_____

Seat
No.

B.Arch. (Semester – II) Examination, 2016
### ARCHITECTURAL GRAPHICS – II (CGPA Pattern)

Day and Date : Tuesday, 26-4-2016   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.

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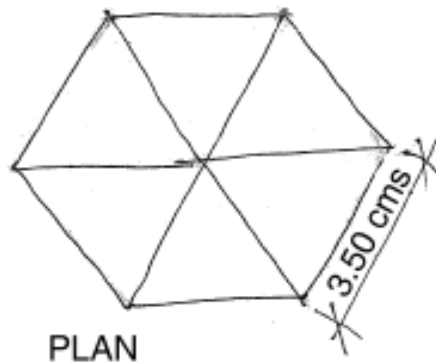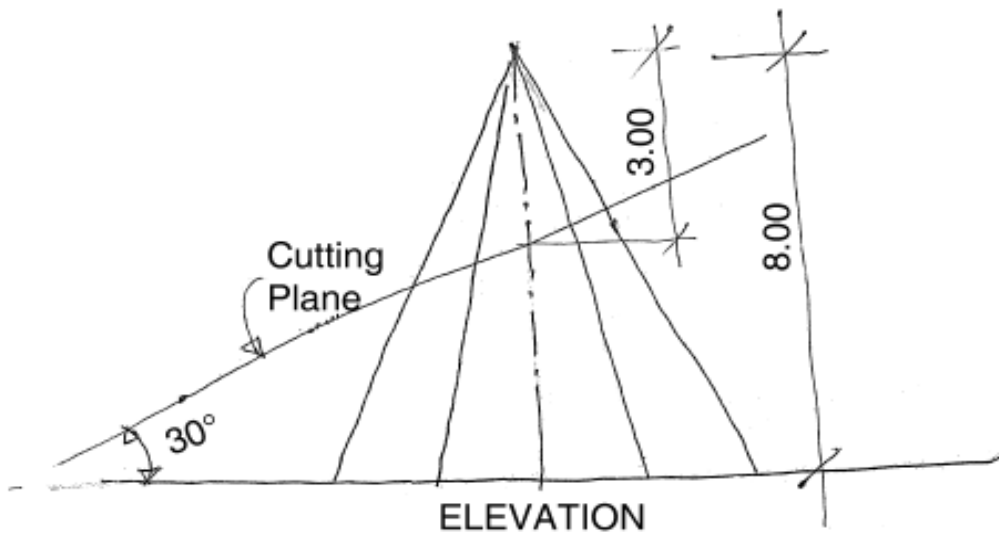
2. Draw true cut portion or development of surface of cut object from Q. No. 1 of Fig. A. (Scale – 1 : 1). **10**

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

1.

9.00 cms

4.00

2.

2.00

Ht. 9.00 cm
Dia. 6.00 cms
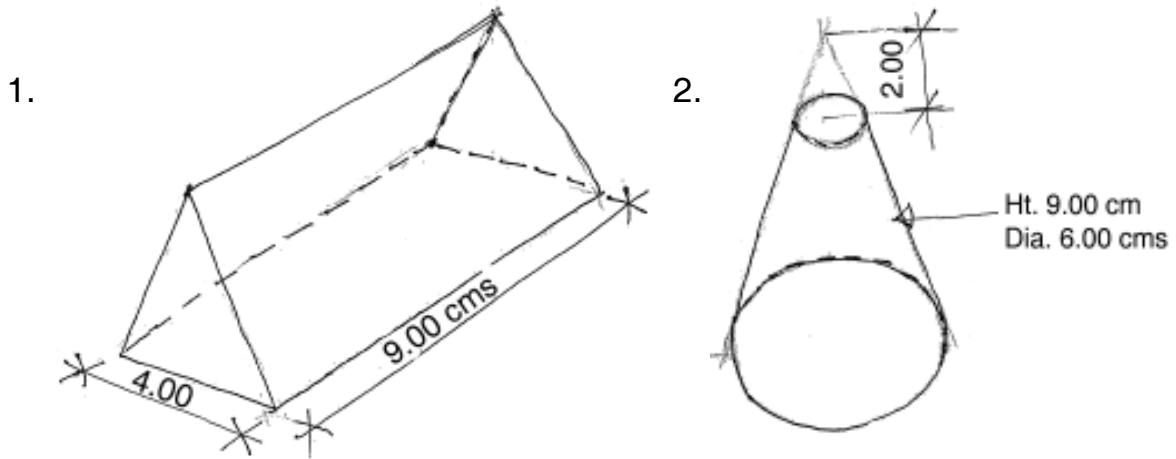
4. Draw isometric view of the object shown in Fig. C. **15**

2.00

4.00

6L.

ELEVATION

8.0 CM

3.00 CM

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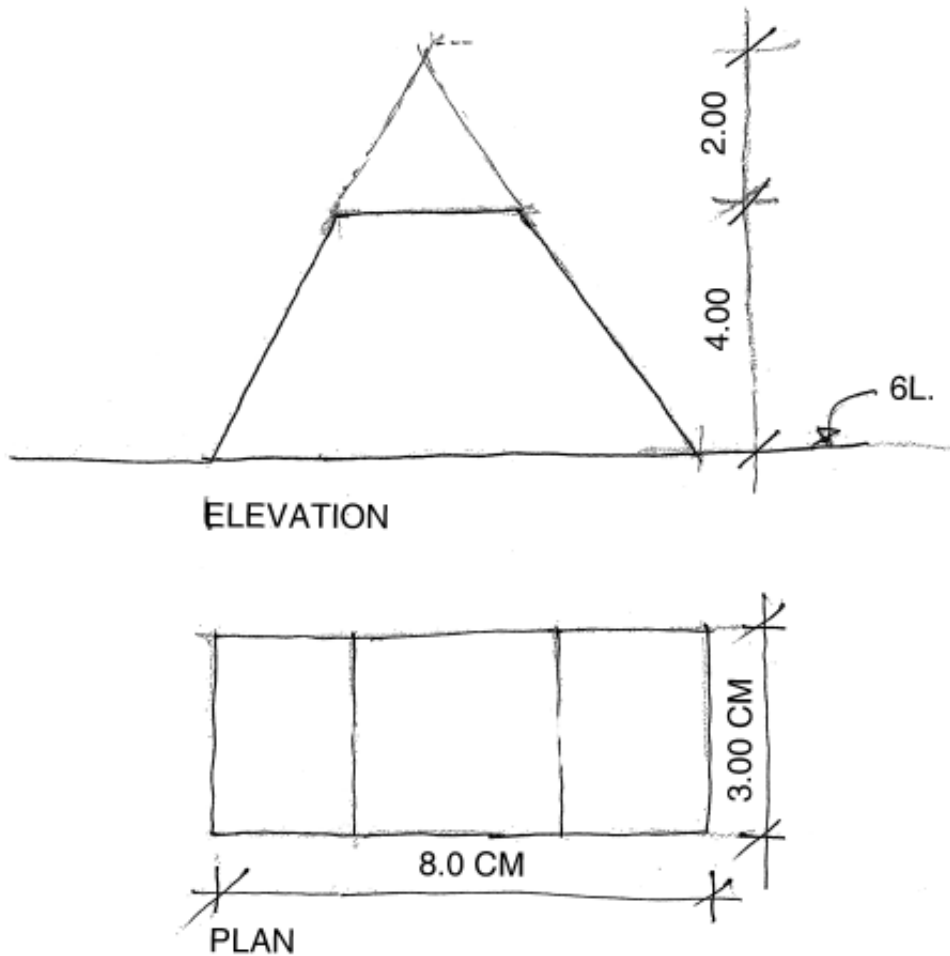
5. Mention the no. of surfaces of the following objects as shown in Fig. D.   **5**

1.   2.

All dimensions are in cms only.

_____

SLR-A – 31

Seat No.	

B.Arch. (Semester – V) (New) Examination, 2016
HISTORY OF ARCHITECTURE – V

Day and Date : Friday, 29-4-2016   Max. Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

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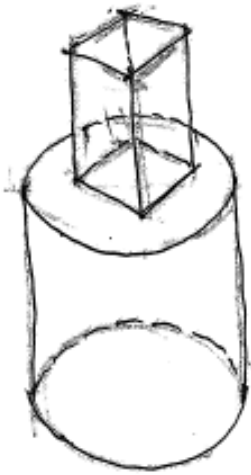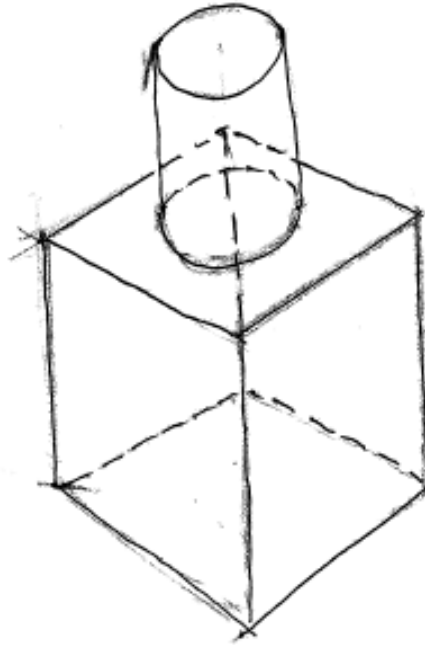   2) **Draw** neat sketches **wherever** necessary.

I. Fill in the blanks :   **7**
   a) La Sagrada Familia is designed by _____
   b) Falling water is designed by _____
   c) Unite d habitation is designed by _____
   d) AT and T building is also known as _____
   e) Kanchanjunga apartment at Mumbai is designed by _____
   f) Franswarth house is designed by _____
   g) Vitra fire station is designed by _____

II. Write short notes on **(any 3)** :   **15**
   1) Art Noveau Movement.
   2) Ronchamp Chapel.
   3) International Style.
   4) Robert Venturi.

III. Answer in brief with neat sketches **(any 4)** :   **(12 marks each)**
   1) Explain how industrial revolution changed society in terms of social and economics. Explain in brief new materials and construction technology from then.
   2) Explain the works and philosophy of Frank O Gehry and two works of his in brief.
   3) Explain the works and philosophy of Walter Gropius.
   4) Explain the works and philosophy of Ar Laurie Baker with the example of C.D.S. in brief.
   5) Explain the works and philosophy of Ar Zaha Hadid and two works of her in brief.

_____

Seat
No.

B.Arch. (Semester – VI)(New) Examination, 2016
BUILDING SERVICES – IV

Day and Date : Tuesday, 26-4-2016   Total Marks : 70
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** indicate **full** marks.*
   3) *Questions **1** and **2** are **compulsory** and solve **any 4** questions*
   from the remaining.

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

   1) _____ means artificial rearing or cultivation of earthworms.

   2) The underground conduits or drains through which sewage is conveyed are
      known as _____ .

   3) The process of settling suspended particles is known as _____.

   4) When decomposition of organic matter takes place in absence of oxygen it is
      known _____.

   5) C.O.D. means _____.

   6) _____ are also known as trickling filters.

   7) _____ is termed as all the solid and the semisolid waste matters of a
      community except night soil.

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

   1) Screening in sewage.

   2) Oxidation pond.

   3) Refuse chute.

   4) Plt privy.

3. A) Discuss in detail natural methods of sewage disposal. **6**

   B) Discuss various types of industrial waste and its treatment. **6**

4. What is Refuse chute ? Explain with the help of neat sketch. **12**

5. Explain Gobar Gas plant with help of neat sketch. **12**

6. A) Explain the process of sludge digetion. **6**

   B) Write a note on trickling filters with the help of neat sketch. **6**

7. What are the main objectives of sewage treatment ? **12**

_____

SLR-A – 40

B.Arch. (Semester – VI) Examination, 2016
THEORY OF STRUCTURE – VI (New)

Day and Date : Saturday, 30-4-2016   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

Instructions : 1) **Use** of **Scientific calculator**, **IS 456** code and **charts 28** to **34** of **SP-16** is **allowed**.
2) Q. No. **1** is **compulsory**.
3) Figures to the **right** indicates **full** marks.
4) Assume suitable data **if necessary**.

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

   1) Minimum number of bars required in square column.

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

   2) In two way action of the footing, the critical section of the shear shall be at

      a) d/4   b) d   c) d/8   d) d/2

   3) Minimum cover to footing is

      a) 20 mm   b) 25 mm

      c) 40 mm   d) None of above

   4) In under reinforced section, _____

      a) Xu < Xmax   b) Xu = Xmax

      c) Xu > Xmax   d) None of above

   5) Minimum % of steel for one way slab for Fe415 is _____

      a) 0.10%   b) 0.15%   c) 0.12%   d) 0.4%

   6) Minimum depth of foundation with medium soil should be _____

      a) 0.5 m   b) 2 m

      c) 1.5 m   d) 1 m

   7) Minimum dimension of width as per IS code for beam should _____

      a) 230 mm   b) 200 mm

      c) 300 mm   d) None of above

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

   a) Write maximum and minimum reinforcement provisions for Beams, slabs, columns and footings with diagram.

   b) Long and short column with support conditions.

   c) Reinforcement details for one way and two way slab.

   d) Different types of links for different shape columns with diagram.

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

   a) Design one way slab of clear span of 2.4 m. Take M20 concrete and Fe415 steel.

   b) Analyze and design following beam. Take M25 concrete and Fe415 steel.
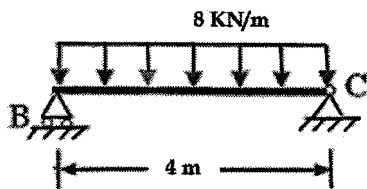
   c) Design a rectangular column of 5 m unsupported length, restrained in position and direction at both ends, to carry an axial load of 1200 kN. Use M25 concrete and Fe500 steel.

   d) Design rectangular footing of column 230 mm × 400 mm for axial load of 800 kN, SBC = 200 kN/m^2 and Use M20 concrete and Fe415 steel.

   e) What are minimum design provisions for beams, columns and slabs ?

_____

Seat
No.

B.Arch. (Semester – VI) (New) Examination, 2016
URBAN PLANNING

Day and Date : Tuesday, 3-5-2016   Total Marks : 70
Time : 10.00 a.m. to 1.00 p.m.

> **Instructions :**   1) Draw **neat** sketches **wherever** necessary.
>   2) Write **neatly** and assume suitable data if necessary.

I. Fill in the blanks :   **(1×7=7)**

    a) _____ proposed the concept of Garden city.

    b) _____ was the town planner for New Delhi City.

    c) _____ of population is population/unit area.

    d) _____ is the boundary between pavement and footpath.

    e) _____ was laid on grid iron pattern.

    f) _____ is the ratio of total built area/plot area.

    g) _____ city is divided in 47 sectors.

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

    1) Horizontal growth.

    2) Road junctions.

    3) Row houses and apartments.

    4) Concentric street system.

III. Answer **any 4** from remaining question : **(4×12=48)**

1) Explain with example the radial spread type growth of town.

2) Describe Sir Pattrick Geddes concept of "Survey Before Plan".

3) Industrial revolution is one of the major factor for the development of settlement. Explain in brief.

4) Explain the different types of zoning.

5) Slum is an social evil. How do you eradicate it ?

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

_____

Seat
No.

B.Arch. (Semester – VI) Examination, 2016
ESTIMATING SPECIFICATION AND COSTING – I (New)

Day and Date : Friday, 6-5-2016   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 following :   **8**

   a) M.S. Grill work

       1) Sq. m.   2) Cum

       3) Rmt   4) No.

   b) Vitrified flooring

       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

       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 masonry 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**

   a) Excavation for foundation

   b) PCC in foundation

   c) Brick masonry 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. 350/cum

   b) PCC in foundation = Rs. 4,250/cum

   c) Brick masonry in superstructure = Rs. 5,500/cum

   d) Vitrified flooring = Rs. 750 / sqm

   e) Windows = Rs. 2,250 / sqm.

Fig. no. 1
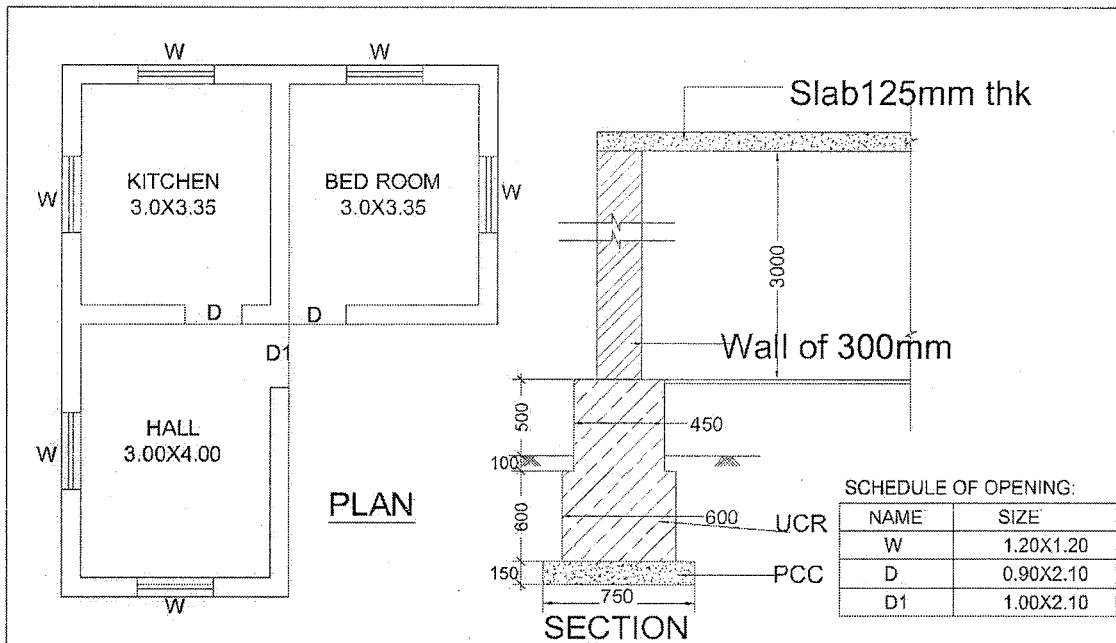
SCHEDULE OF OPENING:	
NAME	SIZE
W	1.20X1.20
D	0.90X2.10
D1	1.00X2.10

SLR-A – 44

B.Arch. (Semester – VI) (Old) Examination, 2016
ACOUSTICS

Day and Date : Thursday, 28-4-2016　　　　　　　　　　Total 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) Acoustical treatment is required to an auditorium of 800 capacity. Work out
　　 the absorption area considering volume of $3.5M^3$/person to be consider and
　　 RT = 1.25 sec. Following are the coefficient of absorption :

　　 Empty seats = 0.18

　　 Occupied seats = 0.42

　　 POP plain = 0.26

　　 Curtain = 0.12

　　 Plaster = 0.004

　　 Glass wool = 0.15.　　　　　　　　　　　　　　　　　　　　　**27**

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

　　 1) Frequency of sound is inversely proportional to _____ of sound.

　　 2) Sound is measured in _____

　　 3) Glass wool is an _____ material.

　　 4) Velocity of sound in air is _____ m/s.

　　 5) Unwanted sound is _____

P.T.O.

    6) The average maximum distance of particle from its mean position is
_____

    7) Sound pressure level is measured in _____

    8) In absorption _____ phenomenon happens.

2. Explain : **15**

    a) Optical model test

    b) Wave model test.

3. Explain any 3 sound absorption materials with sketches. **15**

4. Explain control of air borne noise and structure borne noise with neat sketches. **15**

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

    1) Sound diffraction

    2) Structure borne noise

    3) Sound resonance

    4) Wave front.

_____

Seat
No.

B.Arch. (Semester – VI) (Old) Examination, 2016
THEORY OF STRUCTURE – VI

Day and Date : Saturday, 30-4-2016　　　　　　　　　　Total Marks : 80
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) Minimum number of bars required in square column

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

　　2) In two way action of the footing, the critical section of the shear shall be at

　　　　a) d/4　　　　　　b) d　　　　　　c) d/8　　　　　　d) d/2

　　3) Minimum cover to beam is

　　　　a) 20 mm　　　　　　　　　　b) 25 mm

　　　　c) 40 mm　　　　　　　　　　d) None of above

　　4) In under reinforced section, _____

　　　　a) Xu < Xmax　　　　　　　　　b) Xu = Xmax

　　　　c) Xu > Xmax　　　　　　　　　d) None of above

2. a) Explain the concept of the trusses and their type's.　　　　　　**4**

　　b) Explain the concept limit state method.　　　　　　　　　　**4**

3. Design one way slab of clear span of 3 m. Take floor finish load 1.5 KN/m^2,
　 M20 concrete and Fe415 steel.　　　　　　　　　　　　　　　**16**

4. A simply supported beam of the length 4 m carries UDL of load 12 KN/m. Analyze and design beam. Take M20 concrete and Fe415 steel. **16**

5. Design a rectangular column of 5 m unsupported length, restrained in position and direction at both ends, to carry an axial load of 1000 KN. Use M20 concrete and Fe415 steel. **16**

6. Design footing for axial load of 700 KN, SBC = 200 KN/m^2 and use M20 concrete and Fe415 steel. **16**

7. Write design steps for **16**

   1) One way slab

   2) Rectangular beam.

_____

Seat No.

B.Arch. (Semester – VI) (Old) Examination, 2016
ESTIMATING SPECIFICATION AND COSTING – I

Day and Date : Friday, 6-5-2016
Time : 10.00 a.m. to 1.00 p.m.

Max. Marks : 80

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

1. From the given figure no. 1 calculate the following items for the residential building with no. of rooms (Load bearing type structure) and prepare measurement sheet. **45**
   A) Excavation in foundation.
   B) Masonry work in Plinth.
   C) PCC for foundation.
   D) Flooring work.
   E) Door and window work.

2. Prepare abstract sheet for above residential building with no. of rooms. **15**
   a) Excavation in foundation = Rs. 300 / cum
   b) Masonry work in Plinth = Rs. 3750 / cum
   c) PCC for foundation = Rs. 3300 / cum
   d) Flooring work = Rs. 440 / sqm
   e) Door and window work = Rs. 650 / sqm

3. Prepare Rate analysis the following items **(any two)** : **10**
   1) Stone Masonry work.
   2) External Plaster work.
   3) RCC Slab.

4. Mention the units for the following items. **10**
   a) Railing work with specified height.
   b) Granite flooring.
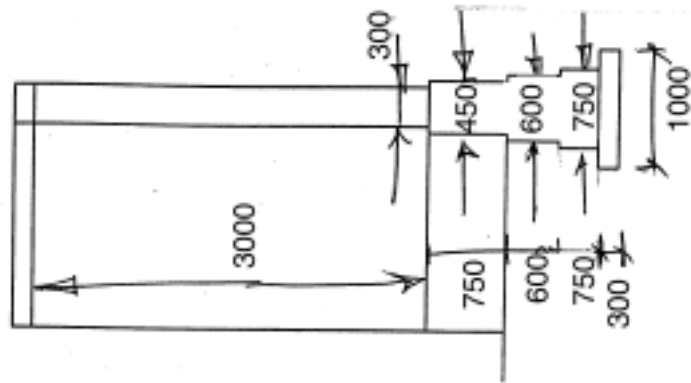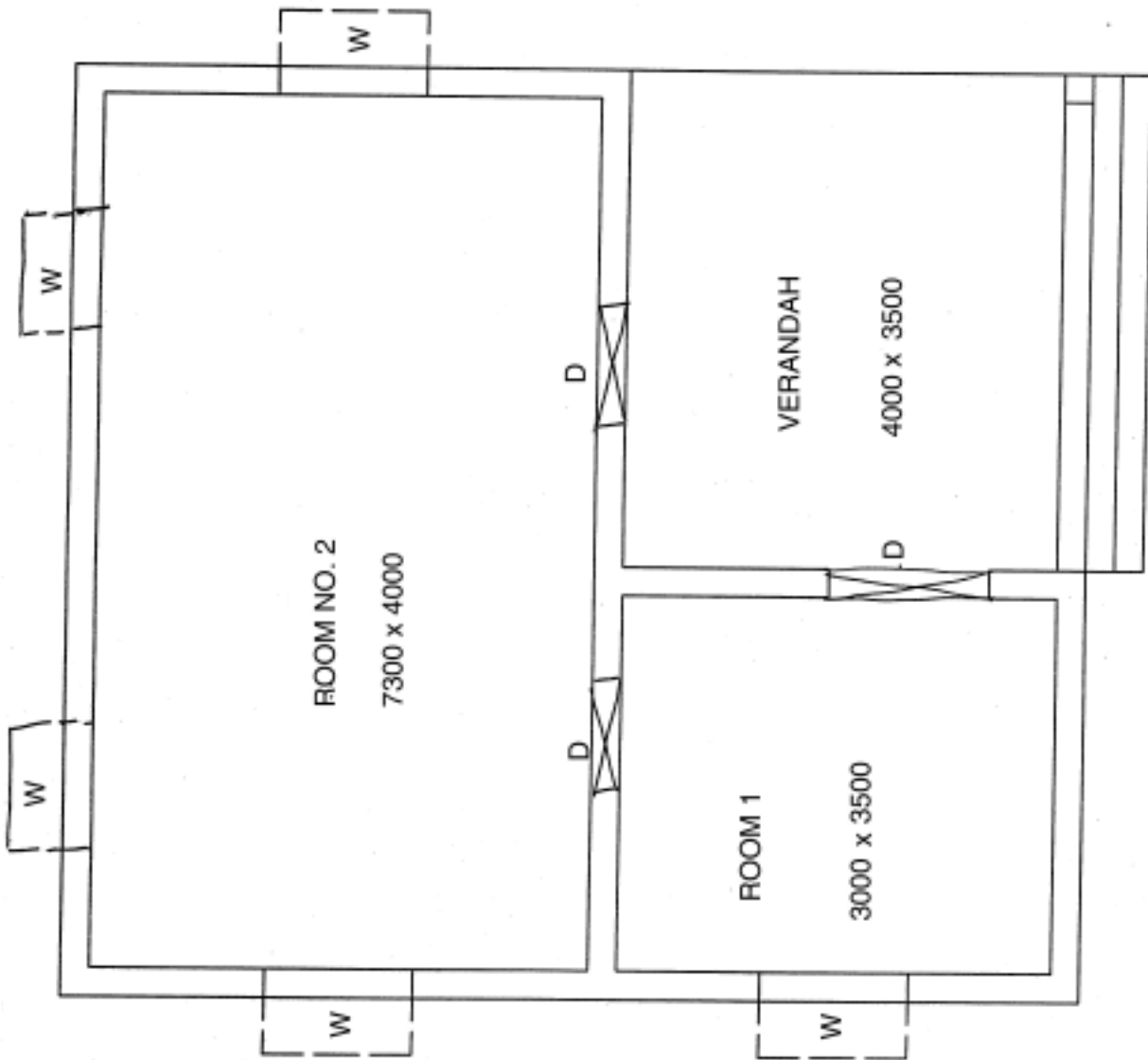   c) Plastering for pointing.
   d) Damp proof course.
   e) M. S. Grill.

Fig. 1

Seat No.

B.Arch. (Semester – VI) (Old) Examination, 2016
BUILDING CONSTRUCTION AND MATERIALS – VI

Day and Date : Monday, 9-5-2016   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** indicate **full** marks.

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

   a) _____ pipes are free from corrosion.

   b) _____ is used as an alternative joinery to welding in steel structures.

   c) Fibre Glass Reinforced plastic is abbreviated as _____

   d) _____ is used for external painting of building.

   e) _____ coats are required to paint a new wood normally.

2. Suggest an appropriate waterproofing treatment for an existing basement in a building measuring 6m×4m and 3m in Height. Draw plan, elevation, section and 2 details. **15**

3. Write short notes (**any 3**). **15**

   a) White washing.

   b) Characteristics of Ideal paint.

   c) P.V.C. in construction.

   d) Ferro cement.

4. Explain uses of plastic in construction Industry. **15**

_____

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

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

   a) Greek orders are Doric, ionic and _____

   b) Durga Temple situated in the State of _____

   c) _____ are small shrines carved out of monolithic rock during Pallava period.

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

   e) Entablature consists of architrave, frieze and _____

   f) Residences of Buddhist monks _____

   g) _____ houses the symbol or idol of God.

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

   1) Buddhist torana   2) Draupadi Ratha

   3) Agora at Greece   4) Pendentives.

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

   1) Briefly discuss the significance of Ladkhan Temple at Aihole with the help of a neat sketch.

   2) Write in brief about Parthenon Temple, Greece.

   3) Describe the salient features of Buddhist architecture with an example of Great Stupa at Sanchi.

   4) Briefly mention the background for the development of Early Christian architecture.

   5) Sketch and explain any three Roman orders.

_____

Seat No.	

B.Arch. (Semester – VII) Examination, 2016
BUILDING CONSTRUCTION AND MATERIAL – VII

Day and Date : Wednesday, 27-4-2016　　　　　　　　Total Marks : 50
Time : 3.00 p.m. to 6.00 p.m.

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

　　a)　The recommended size of hospital lift is _____

　　b)　Pitched roof should be removed by _____ demolition.

　　c)　_____ is one example of fire resisting material.

　　d)　_____ is one example of sound insulating material.

　　e)　The pitch varies from _____ in precast portal frame.

II.　Design and specify the type of lift for a apartment building of G + 6 upper floor. Draw plan, section and enlarged details of machine room, lift car and lift pit.　　**15**

III.　a)　Explain the properties and application of thermal and sound insulating material.　**15**

　　　　　　　　　OR

　　b)　Explain the properties and application of mastic sealants and adhesives.　**15**

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

　　a)　Epoxy material.

　　b)　Fire proofing material

　　c)　Space frame

　　d)　Pre stressing of beams

　　e)　Strutting.

_____

Seat No.

B.Arch. (Semester – VII) Examination, 2016
ADVANCE ESTIMATING SPECIFICATION AND COSTING – II

Day and Date : Friday, 29-4-2016　　　　　　　　　　　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.

1. Write a short note of following (**any three**) :　　　　　　　　　**15**

   A) Supplementary Estimate.

   B) Revised Estimate.

   C) Contingencies.

   D) Work charge Establishment.

   E) Detail specification.

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

   A) Earnest money deposit.

   B) Security Deposit.

   C) Schedule "A" & Schedule "B".

3. The plinth area of an apartment is 500 sqm. Determine the total cost of building from the following data.　　　　　　　　　　　　　　　　　**25**

   I) Rate of construction = Rs. 1,230/- per m3.

   II) The height of apartment = 16.25 m.

   III) Water Supply, Sanitary and Electrical installations each at 6% of building cost.

   IV) Architectural appearance @ 1% of building cost.

   V) Unforeseen item @ 2% of Building cost.

   VI) P.S. and contingencies @ 4% of building.

4. What is the role of specification in quality control of construction ? Explain by giving example of at least one item of construction. **10**

5. Write in brief specifications on workmanship (**any two**). **10**

   a) Plain cement concrete in foundation.

   b) Half Brick Masonry work.

   c) Polished Shahabad flooring work.

   d) White wash.

6. Differentiate between item rate contract and lump sum contract. **10**

_____

Seat No.	

B.Arch. (Semester – VII) Examination, 2016
ADVANCED ARCHITECTURAL DESIGN – VII

Day and Date : 18 Hours (6 Hours per day)   Total Marks : 150
                Tuesday, 10-5-2016
                Wednesday, 11-5-2016
                Thursday, 12-5-2016
Time : 10.00 a.m. to 4.00 p.m.
       10.00 a.m. to 4.00 p.m.
       10.00 a.m. to 4.00 p.m.

Instructions : 1) Candidates must **submit** the design concept at the end of first day, which will not be **returned**. (They must retain a copy of it, for further work) This concept sheet shall be stapled with total portfolio at the end of third day by supervisors.

2) Eatables and soft drinks are **allowed** to be consumed by candidates during exam. The supervisors shall arrange to provide them on **request**.

3) The portfolio must be **clean, neat** and **properly stapled**. Water colors if used must be **completely** dry before submission.

4) **No** electronic devices are **allowed** inside exam hall.

Drg. requirements and Scheme of marking.

Concept		15 marks
Site plan showing site development, landscape and parking details	1:200	15 marks
All floor plans, with structure and furniture details	1:100	50 marks
Sections min 2, with labeling of materials and construction details	1:100	25 marks
Elevations min 2	1:100	25 marks
Perspective / bird's eye sketch view		20 marks

Multiplex

A Business family in Solapur has decided to build a multiplex in jule Solapur area, to tap the commercial potential of fast developing twin Solapur area. The design should address the need of an attractive design, to create an image of the business house. It should also act as the public hub of the area.

The design program

1. Cinema Hall for 650   approx. 700 sq.m.

2. Cinema Hall for 450   approx. 500 sq.m.

3. Cinema Hall for 150   approx. 200 sq.m.

4. Common gathering lobbies with food and beverage counters and wash rooms.

5. Adequate staircases, lifts or escalators for easy and quick public movement.

6. Restaurant for 60 seats each with kitchen, store and utility.

   Approx. 100 sq.m.

7. Shops – 4 nos. – 80 sq.m. each.

8. Ticket booths at ground level with covered space for ticket ques.

9. Security cabins at every entry, preferably semi covered parking for 100 2 wheelers and 25 cars.

The FSI is 1.5, the ground coverage is 0.33% of plot area

Set backs 6 m on all sides.

Any other technical data if not mentioned may be assumed by the candidates and mentioned as such.

bharati vidyapith
pharmacy college

bharti vidyapith road 15 m wide

100.00 proposed site

60.00

takalikar mangal karyalay road 24 m wide

9°

MULTIPLEX
SITE PLAN

SLR-A – 6

B.Arch. (Semester – III) Examination, 2016
(CGPA Pattern) (New)
ARCHITECTURAL GRAPHICS – III

Day and Date : Monday, 25-4-2016   Max. 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.

1. a) Draw the one point perspective view of the object by observing following
points/conditions (Figure - A).   **15**

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

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

   d) The station point is <u>12.00</u> away from 'x'.

   e) The eye level is <u>11.00</u> above ground level.

2. Draw the two point perspective view of the object by observing following
points/conditions (Figure - B) :   **30**

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

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

   h) The station point is <u>15.00 C.M.S.</u> away from 'x'.

   i) The eye level is <u>12.00 C.M.S.</u> above ground level.

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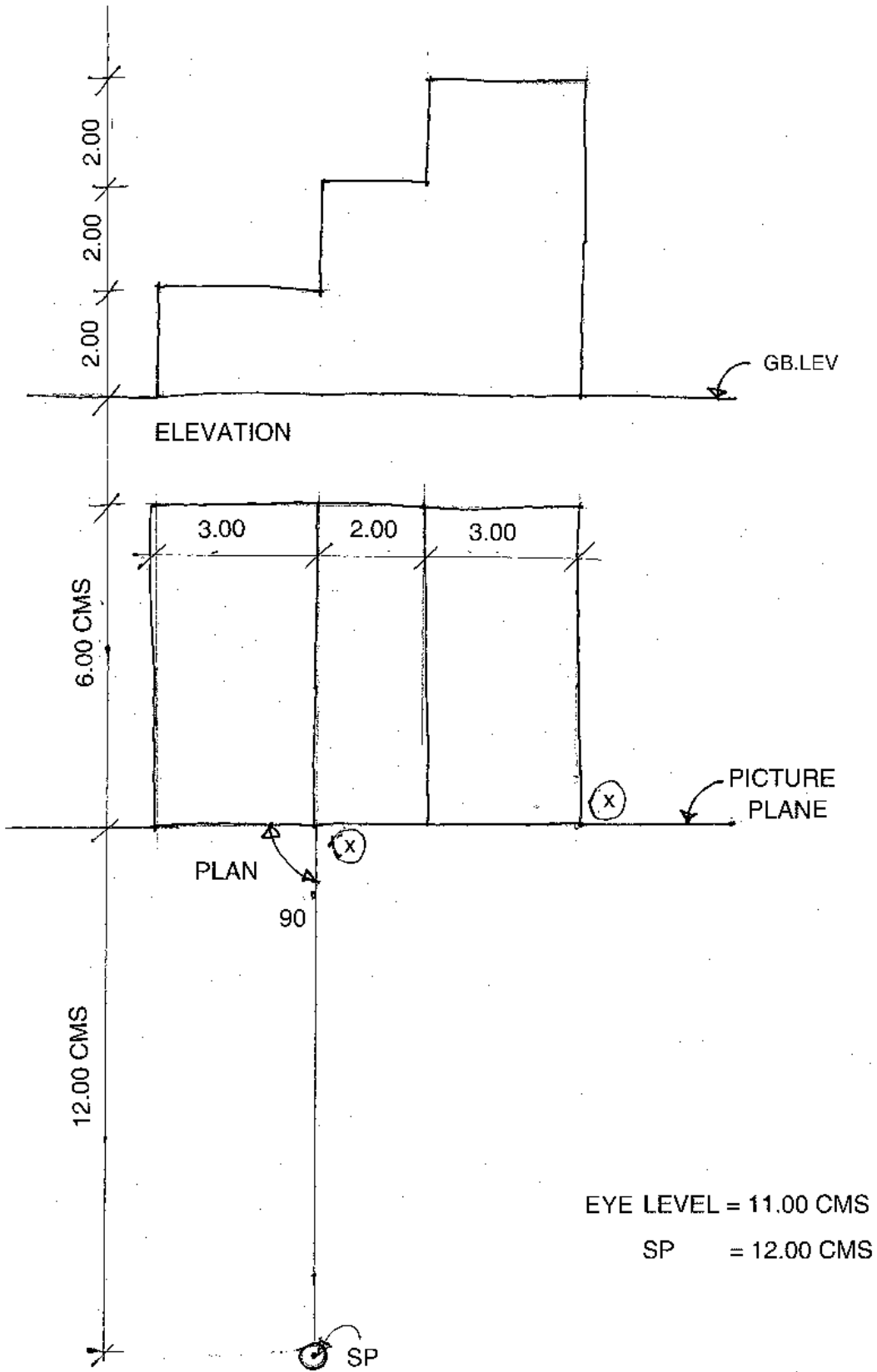horizontal planes of the object.   **20**

ELEVATION

GB.LEV

3.00   2.00   3.00

6.00 CMS

PICTURE PLANE

PLAN

90

12.00 CMS

EYE LEVEL = 11.00 CMS

SP   = 12.00 CMS

SP

Figure – A

Figure – B

ELEVATION

GB.LEV.

7.00 CM S

7.50

-3.00

6.00 CM

PLAN

2.00   2.00   2.00
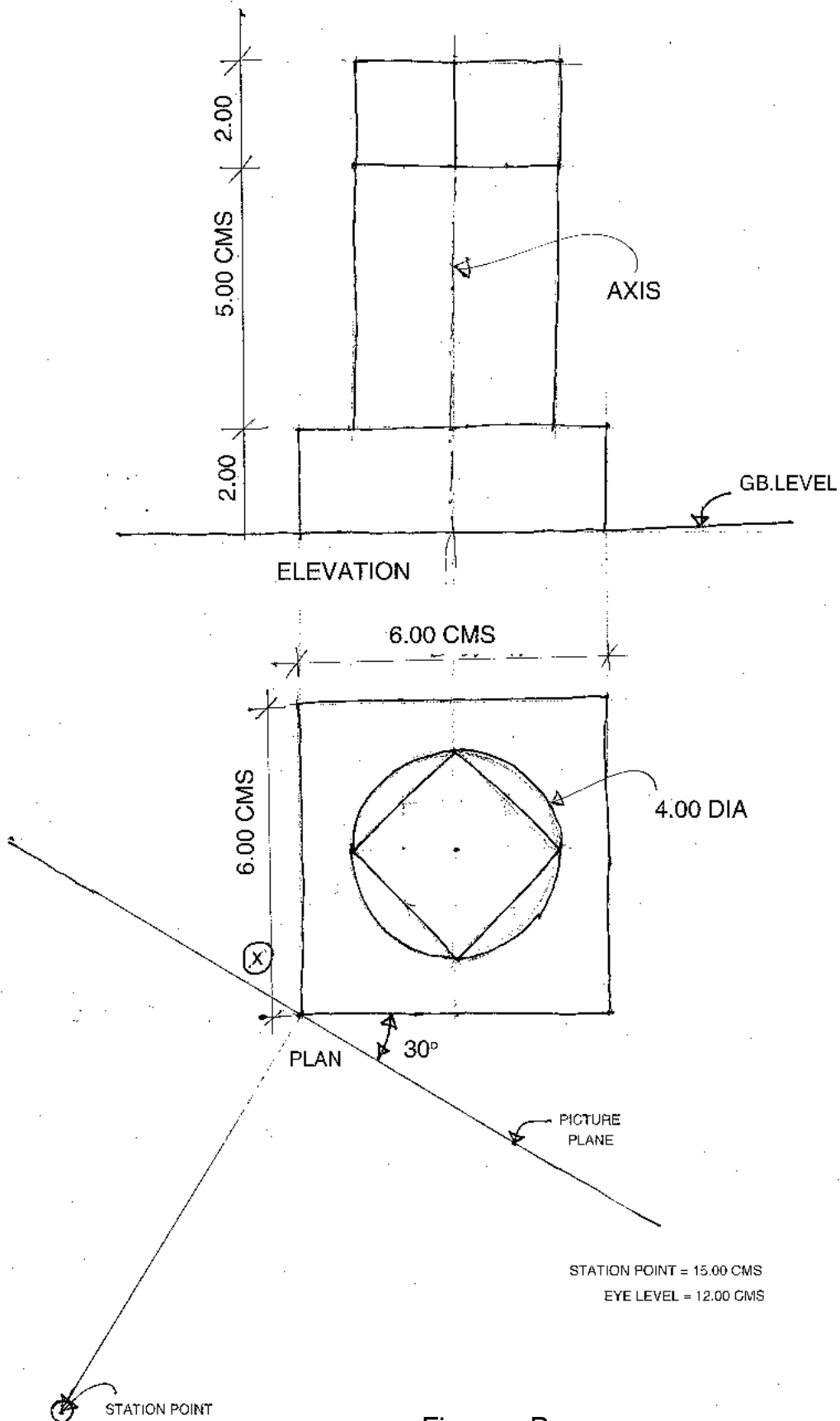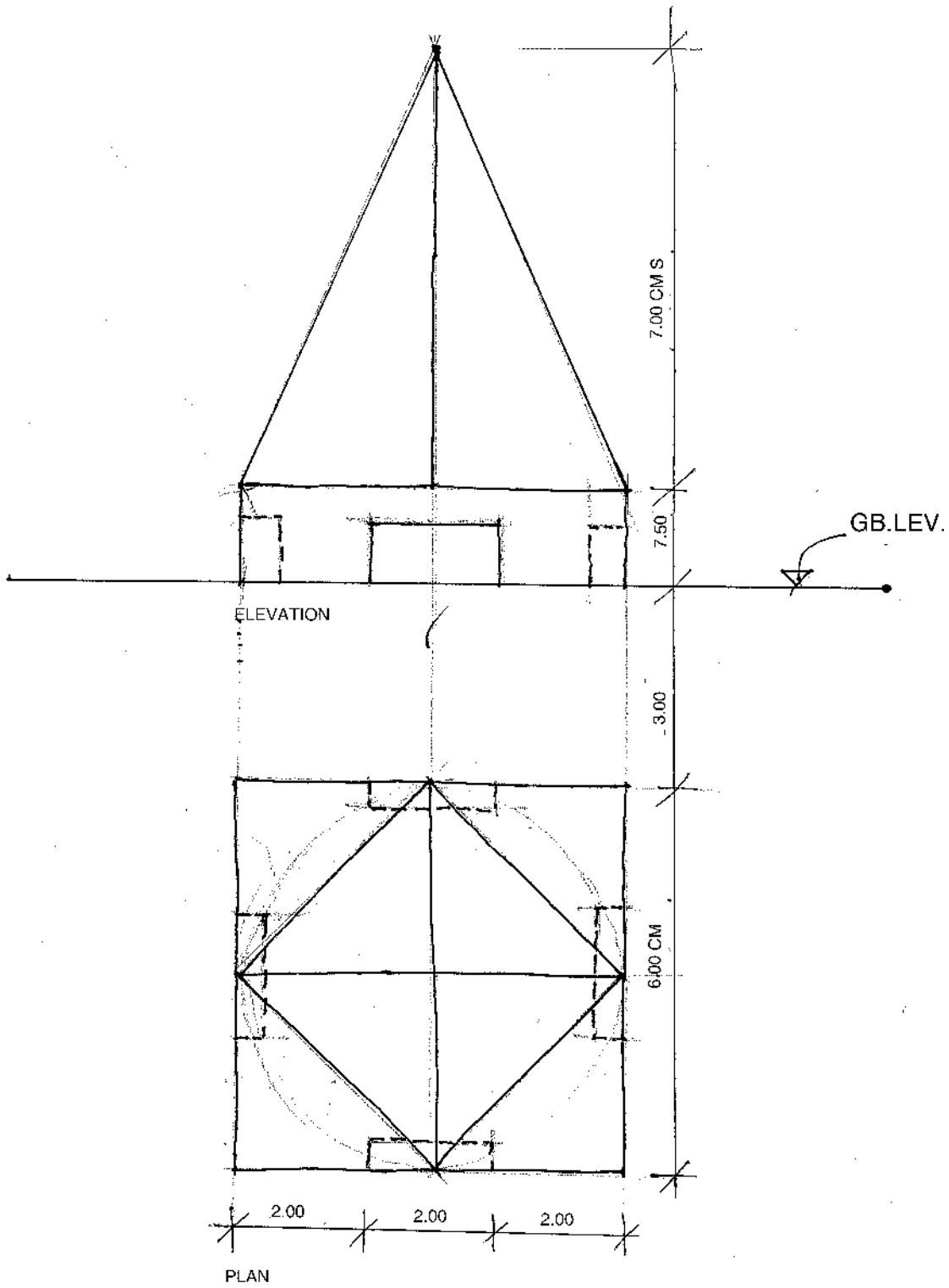
Figure – C

Seat No.	

B.Arch. (Semester – III) Examination, 2016
THEORY OF STRUCTURE – III (New-CGPA)

Day and Date : Friday, 29-4-2016   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) A rectangular bar of width *b* and height *h* is being used as a cantilever. The loading is in a plane parallel to the side *b*. The section modulus is

      A) $\dfrac{bh^3}{12}$ B) $\dfrac{bh^2}{6}$

      C) $\dfrac{b^2h}{6}$ D) None of these

   2) A two-hinged arch is said to be
      A) Statically determinate structure
      B) Statically indeterminate structure
      C) A bent beam
      D) None of these

   3) When bending moment is maximum, shear force along beam is
      A) zero   B) maximum
      C) minimum   D) none

   4) One of the assumptions in theory of pure bending formula is
   A) beam is simply supported   B) beam is homogeneous
   C) beam is strong along the section   D) none of these

2. Explain the concept of soil mechanics and what are different types of soils ? **6**

3. a) Derive the equation for section modulus of Rectangular section (b × d). **6**

   b) A cantilever beam of width 100 mm and depth 200 mm is acted by point load as shown in fig.
      Find the maximum bending stress induced in beam.
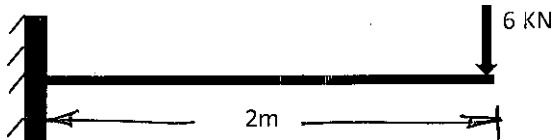
   8

4. Draw the shear stress diagram for the "I" section of top and bottom flange 20 mm × 500 mm and web 20 mm × 600 mm when acted by maximum shear force of 40 KN. **14**

5. a) What is assumptions theory of pure bending ? **6**

   b) Write a short note on : **8**
      i) Arches
      ii) Domes.

6. Draw the shear force and bending moment diagram for following beam. **14**
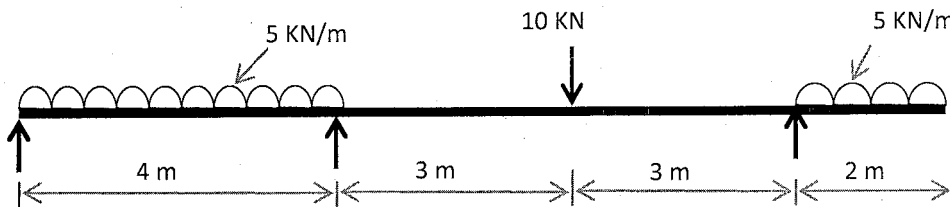
7. a) The principle stresses at point in bar are 100 N/mm^2 (compressive) and 120 N/mm^2 (compressive). Determine resultant stress in magnitude and direction on a plane inclined at angle of 45 degree to the axis of major principle stresses. **10**

   b) Show graphically, the relation between normal, tangential and resultant stresses. **4**

_____

Seat No.

B.Arch. (Semester – III) Examination, 2016
HISTORY OF ARCHITECTURE – III (New CGPA Pattern)

Day and Date : Monday, 2-5-2016   Max. 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 _____ temple at konark is a supreme example of the Orissa style.

b) _____ houses the symbol or statue of god or goddess in a hindu temple.

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

d) The temples of Hoysala period display _____ planning.

e) Meenaxi Sundaram temple is located in _____

f) The circum ambulating path in a hindu temple is known as _____

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

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

1) Hoysala temples.

2) Name the different parts of Khajuraho temple.

3) Prakarams and Gopurams.

4) Pointed arches in Gothic style.

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

    1) Lingaraj temple at Bhuvaneshwar.

    2) West Minster Abbey, London.

    3) Channakeshwa temple at Bellur.

    4) Choumukh temple.

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

_____

B.Arch. (Semester – IV) (New) (CGPA) Examination, 2016
CLIMATOLOGY AND ENVIRONMENT – II

Day and Date : Saturday, 30-4-2016   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** indicate **full** marks.*
            3) ***All** questions are **compulsory**.*

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

    1) Internal illumination is measured in _____

        a) watts   b) lux   c) radiation   d) lumen

    2) Radiation is measured in _____

        a) watts/sqm   b) k/sqm   c) lux/sqm   d) lumen/sqm

    3) Humidity is measured in _____

        a) decC   b) ^{o}C   c) %   d) watts

    4) _____ city experiences composite climate.

        a) Jaiselmer   b) Delhi   c) Solapur   d) Bangalore

    5) _____ refers to addition of moisture.

        a) stack   b) wind catcher

        c) cooling tower   d) none

    6) Stack effect refers to _____

        a) cross ventilation   b) window

        c) courtyard   d) duct

    7) Removal of moisture in air _____ temperature.

        a) decrease   b) neutral

        c) increases   d) no change

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

   1) External heat gain

   2) Courtyard designs

   3) Light shelves

   4) Land wind and sea wind.

3. A) Find solar altitude and azimuth angle for given chart at 3 p.m. on 28th Jan. and 11 a.m. on 15th Apr. for 44° North latitude. **5**

   B) Find out Horizontal and Vertical shadow angle for given chart at 13 hour on 15th May and 16th hour on 30th Aug. for 44° North latitude and give sketches. **7**

4. Give two bioclimatic design strategies at building scale and site scale each. **12**

5. A) Explain earth burning and earth sheltering. **6**

   B) Explain bio climatic chart. **6**

6. Give design considerations with sketches for warm and humid climate. **12**

LATITUDE 44° NORTH

LATITUDE 44° SOUTH