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**B. Architecture (Semester – I) (CBCS) Examination Dec-2019
THEORY OF STRUCTURE – I**

Day & Date: Saturday, 07-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

- 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.

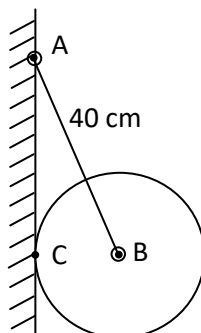
Q.1 Fill in the blanks by choosing correct alternatives given below. 08

- 1) Force is nothing but _____.
 - a) Mass X Velocity
 - b) mass/velocity
 - c) Mass X Acceleration
 - d) mass/acceleration
- 2) Moment on a beam for force 60N acting at 3m perpendicular distance _____.
 - a) 30 Nm
 - b) 120Nm
 - c) 90 Nm
 - d) 100N/mm
- 3) When line of action of two forces on same line then they are _____.
 - a) Collinear force
 - b) Non-Collinear force
 - c) Non-Concurrent force
 - d) Coplanar force
- 4) Dead load of any component of Building Component Can be calculated by Multiplying _____ X Unit Weight.
 - a) Area
 - b) Length
 - c) Volume
 - d) Force

Q.2 Explain Load Bearing Structure & Framed Structure. 06

Q.3 a) State & Explain law of Parallelogram of Forces. 06

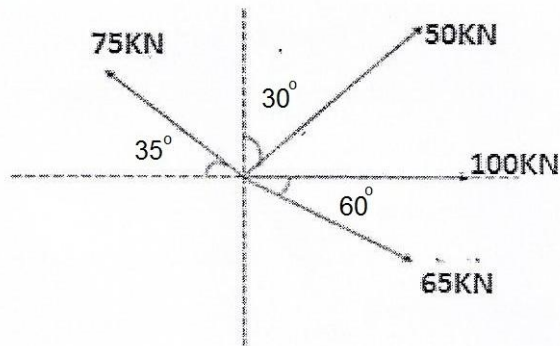
- b) 08** A circular roller of weight 800 N and radius 20 cm hangs by a tie rod $AB = 40$ cm and rests against a smooth vertical wall at C as shown. Determine the tension in the tie rod and reaction at point C.



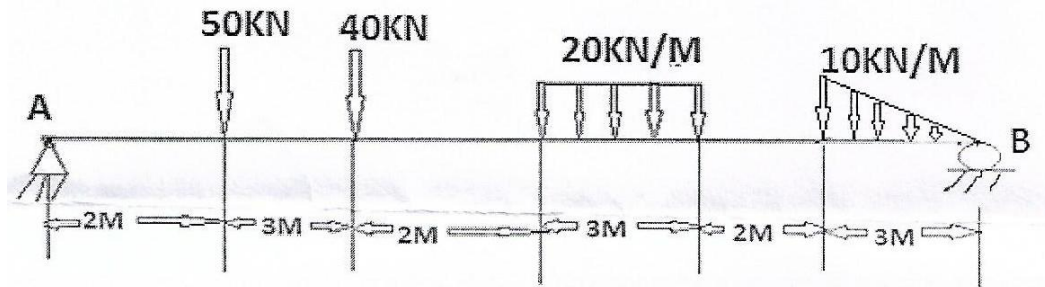
Q.4 a) Write a note on System of Forces. 06

- b) 08** Forces of 30N, 50N, 75N, 100N & 125N 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.

- Q.5** a) State & Explain different types of Foundation. **06**
 b) Find Magnitude and Direction of Resultant for following Concurrent force system. **08**



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



- b) State and Explain different types of beams. **04**
- Q.7** a) State & explain different types of loads considered in analysis of structure. **08**
 b) What do you mean by Perfect, Deficient and Redundant frame? Explain with example. **06**

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**B. Architecture (Semester –III) (CBCS) Examination Dec-2019
ARCHITECTURAL GRAPHICS- III**

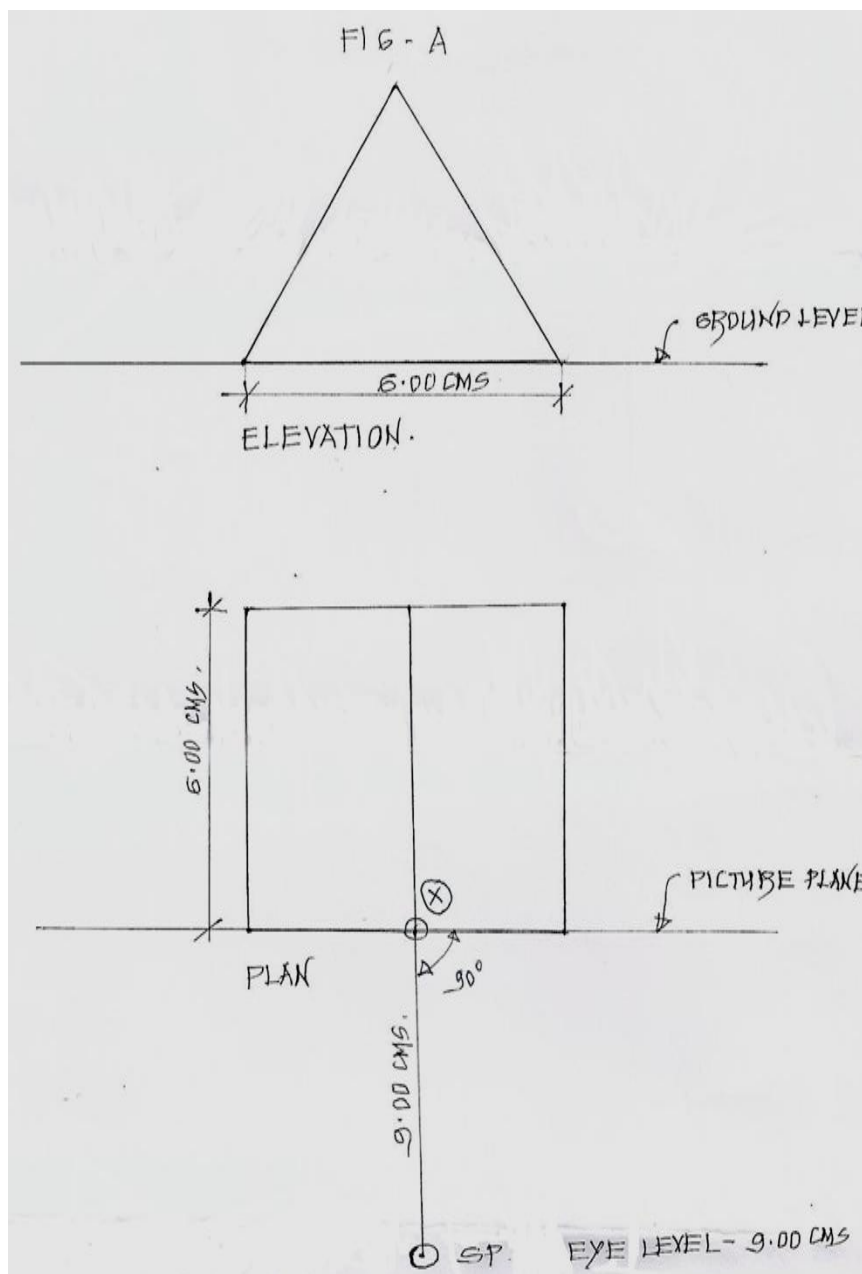
Day & Date: Tuesday, 10-12-2019
Time:02:30 PM To 05:30 PM

Max. Marks: 70

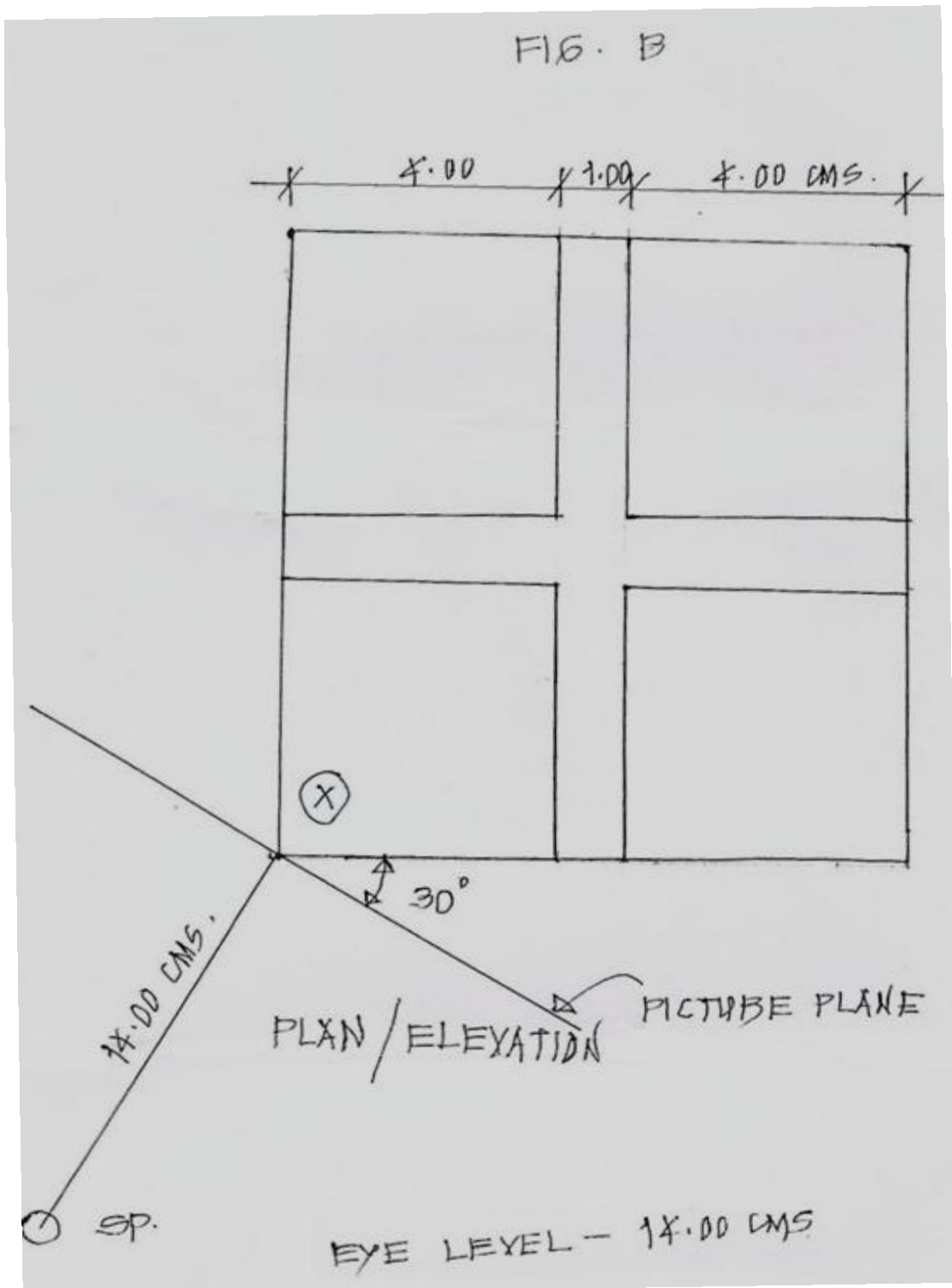
- Instructions:**
- 1) All questions are compulsory.
 - 2) Retain all construction lines.
 - 3) Figures to the right indicates full mark.
 - 4) Five marks are reserved for neatness and good drafting quality.
 - 5) Make suitable assumptions wherever required.

Q.1 Draw one point perspective view for the object given below by observing following points/conditions ?(Fig. A)

20

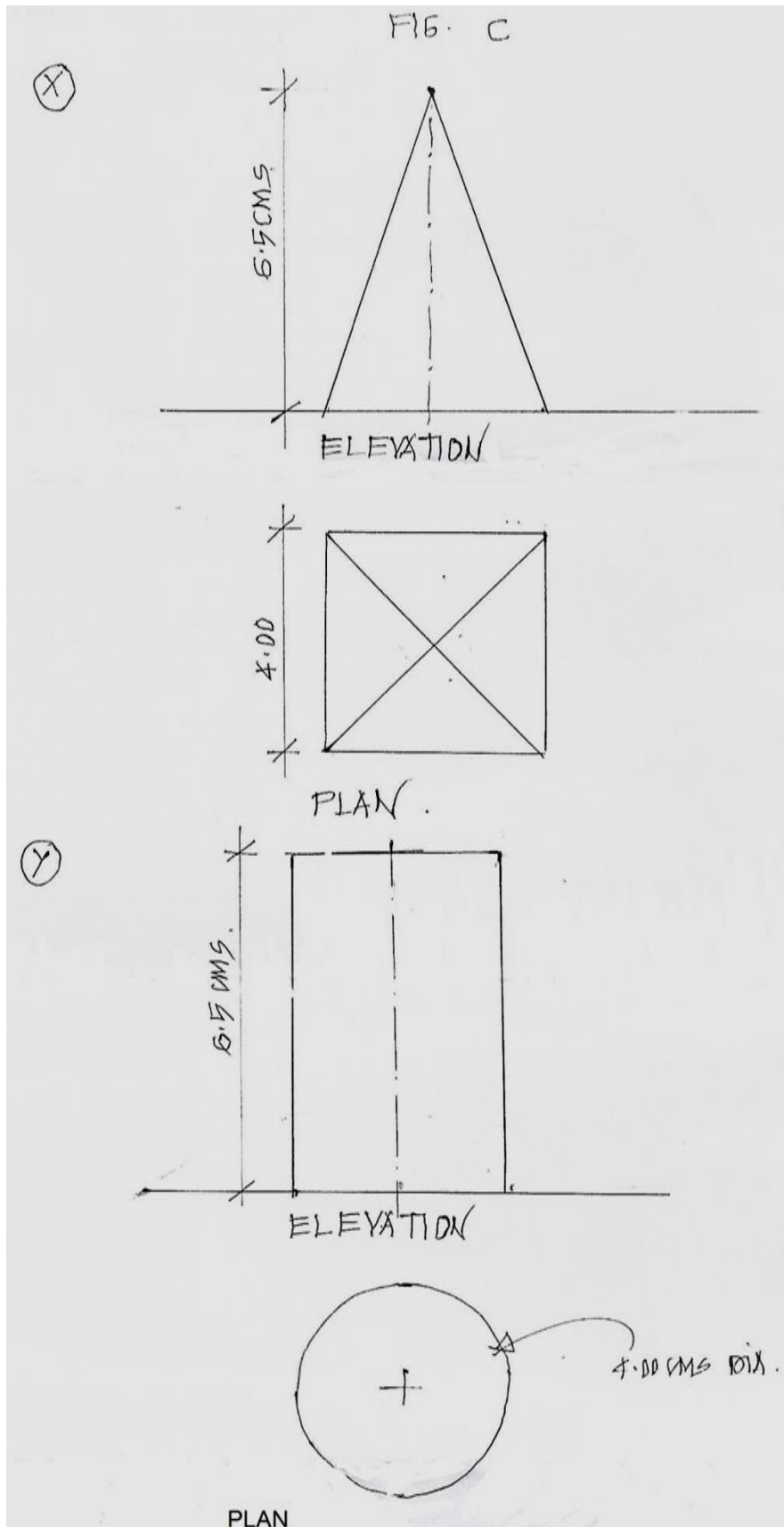


Q.2 Draw two point perspective view for the object given below by observing following points/conditions?(Fig. B)



Q.3 Draw shade and shadow for the object (Fig. C) in plan and elevation considering the source of light is in conventional direction on the vertical and horizontal planes of the object.

20



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**B. Architecture (Semester – III) (CBCS) Examination Nov/Dec-2019
CLIMATOLOGY AND ENVIRONMENT – I**

Day & Date: Thursday, 12-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Choose the correct alternatives from the options and rewrite the sentence. 07

- 1) _____ is due to heat transmission for body to air in contact with skin.
 - a) Evaporation
 - b) Reflection
 - c) Convection
 - d) None of the above
- 2) SI unit of radiation is _____.
 - a) w/m^2
 - b) Btu
 - c) w/hr
 - d) None of the above
- 3) _____ on 23.5 N latitude experienced shortest day on earth.
 - a) 21-Jun
 - b) 22-Dec
 - c) 21-May
 - d) 23-Mar
- 4) Radiation is measured in _____.
 - a) %
 - b) Bottle
 - c) Shade
 - d) None of the above
- 5) Wind velocity is measured by _____.
 - a) Pitot tube
 - b) Wind guage
 - c) Wind graph
 - d) Bioclimatic chart
- 6) _____ will register the duration of sun shine.
 - a) Sunshine recorder
 - b) Glass globe
 - c) Vane
 - d) None of the above
- 7) Air temp (DBT) at day time varies between _____ degC in cold and dry climates.
 - a) 32 to 43
 - b) 18 to 25
 - c) 5 to 10
 - d) None of the above

Q.2 Write short note any three 15

- a) Tropical Upland Climate
- b) Tilt of Axis
- c) Humidity and Relative Humidity
- d) Specific Heat

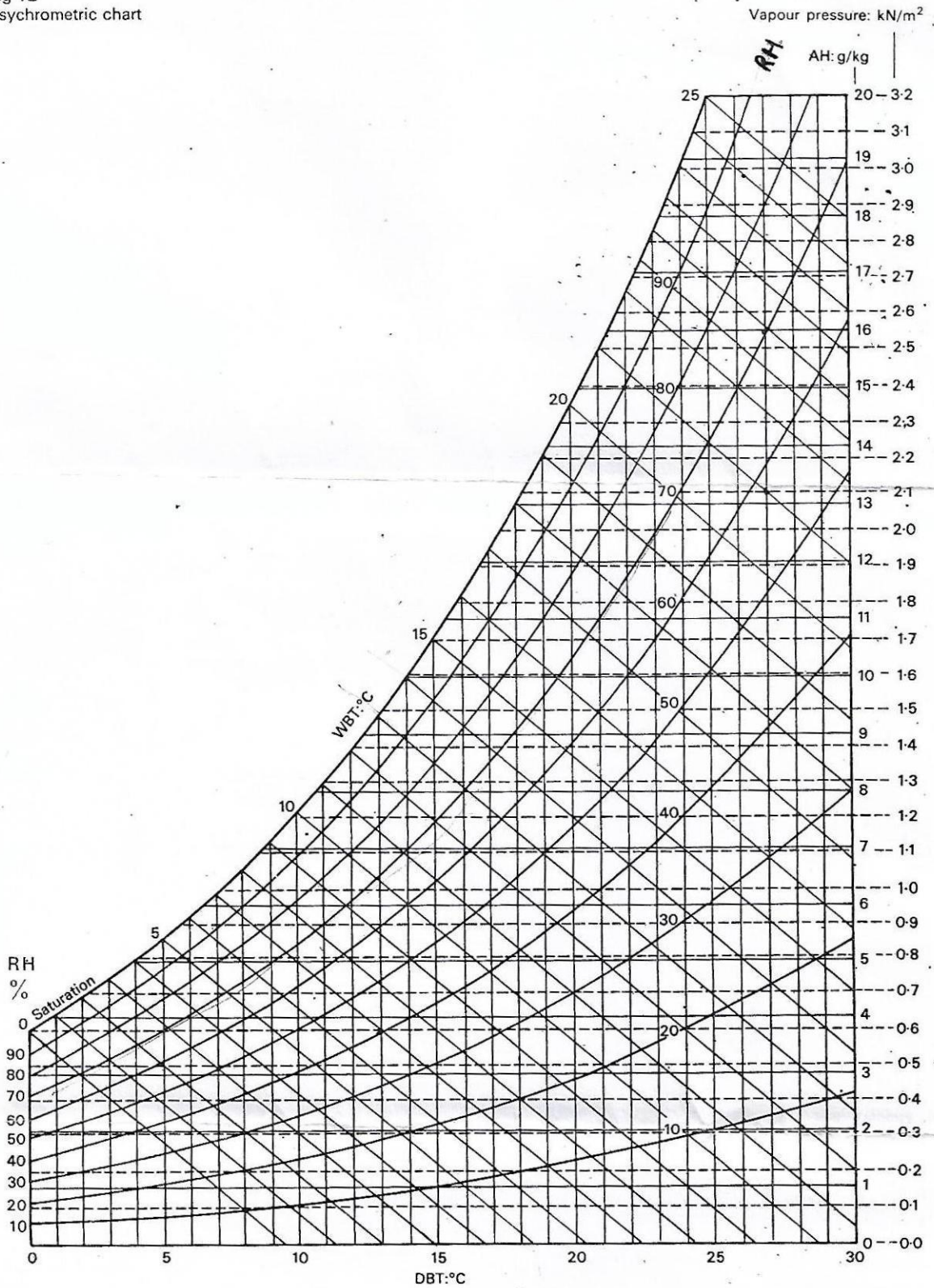
**Q.3 a) Explain radiation and radiation measurement. 05
b) Find Ah, DBT when VPD 1.0kWM/m2 WBT 15 C. 07**

Q.4 Explain Bioclimatic chart and how to use it? 12

**Q.5 a) Explain land breeze and sea breeze. 06
b) Explain local factors governing local climate deviation. 06**

Q.6 What is micro climate and microclimate analysis?

16 Fig 12
Psychrometric chart



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Set **P**

**B. Architecture (Semester - III) (CBCS) Examination Dec-2019
THEORY OF STRUCTURE- III**

Day & Date: Saturday, 14-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Choose the correct alternatives from the options. 08

- 1) According to theory of simple bending, the material of beams is homogenous and _____.
a) Same b) Unchanged
c) Isotropic d) None
- 2) Maximum bending Moment for Simply Supported beam with Point Load over centre of span is _____.
a) wl b) $wl/4$
c) $wl/2$ d) $WL^2/8$
- 3) Three Hinged Arch is Statically _____ Structure.
a) Determinate b) Indeterminate
c) Both d) None
- 4) Specific Gravity of Cement lies between _____.
a) Zero b) Maximum
c) 1.4 to 1.6 d) 3 to 3.2

Q.2 Explain Importance of Soil Mechanics in Civil Engineering 06

Q.3 a) Explain Modulus of Section. Derive formula of section modulus for Solid Rectangular section 06

- b) A simply supported beam of 4m span of symmetrical T Section with flange 120mm × 20mm and web of 200mm × 18mm. Maximum stress induced is 120MPa. Determine u.d.l on beam. 08**

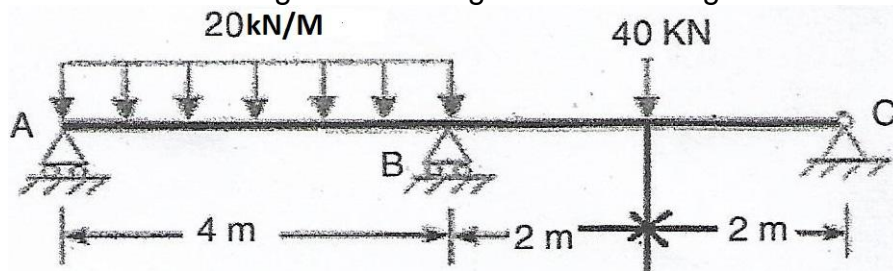
Q.4 a) Explain Concept of Pure Bending 04

- b) Draw the shear stress diagram for Assymetrical 'I' section of Top flange 80mm*15mm & web 15mm*100mm & Bottom flange 150*20 mm when acted by maximum shear force of 80KN. 10**

Q.5 Write short note on:

- a) Explain in short: 08**
- 1) Major Principle Stress
 - 2) Minor Principle Plane
 - 3) Concept of Shear Stress
 - 4) Concept of Fixed Beam
- b) Domes & Chimneys 06**

Q.6 Draw Shear force & Bending Moment diagram for following beam:



- Q.7** a) Write down Procedure for Calculating Shear Stresses at different Points of "T" Section also draw shear stress distribution diagram for the same. **07**
- b) The stresses at a point of a machine component are 150 mpa and 50 mpa both tensile. Find intensities of Normal, Shear & Resultant stresses on a plane inclined at an angle of 45° with the axis of major tensile stress. Also find Magnitude of Maximum shear stress in the component. **07**

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**B. Architecture (Semester – III) (CBCS) Examination Dec-2019
HISTORY OF ARCHITECTURE - III**

Day & Date: Tuesday, 17-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
2) Draw neat sketches wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Fill in the blanks. 07

- 1) _____ are the magnificent doorways to temple complexes in Dravidian architecture.
- 2) The temples of Hoysala period display _____ planning.
- 3) Garbha griha is also called as _____.
- 4) _____ is an excellent example of Orissan Indo-Aryan architecture.
- 5) Jain temples were based on the _____ principle of planning.
- 6) _____ stone was used for minute carvings in hoysala temple.
- 7) _____ temples are called as star temples.

Q.2 Write short notes. (Any Three) 15

- a) Gopurams
- b) Pointed arches in Gothic style
- c) Jain temple towns
- d) Stellate planning

Q.3 Answer any four with neat sketches. 48

- a) Explain in detail the various characteristics of Lingaraj temple at Bhuvaneshwar.
- b) Write in detail about West Minster Abbey, London.
- c) Describe the salient features of the famous temple symbolizing the khajuroho group in Nagara style of architecture.
- d) Briefly explain the temple at Madurai dedicated to Goddess Meenakshi.
- e) Give a detailed explanation on Channakeshwa temple at Bellur.

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B. Architecture (Semester – III) (CBCS) Examination Dec-2019
ART IN ARCHITECTURE

Day & Date: Thursday, 19-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Mention Question numbers correctly.
4) Draw neat sketches wherever applicable.

Q.1 Fill in the blanks. 07

- 1) _____ is the cave complex in south- western France with parietal wall paintings.
- 2) _____ is a celebrated contemporary artist from Solapur.
- 3) _____ and _____ are ancient art traditions of China.
- 4) _____ and _____ are credited with Expressionism.
- 5) _____ and _____ are two architects whose work is often described as Deconstructivism
- 6) Madhubani is a folk art from _____.
- 7) _____ is the common material of construction in vernacular practices of Himachal Pradesh.

Q.2 Write short notes (any five) 15

- a) Functional arts
- b) Bhimbetka
- c) Any two art traditions of ancient China
- d) Michelangelo
- e) Paul Klee
- f) Jaisalmer, Rajasthan

Q.3 Answer in brief: (any four) 48

- a) Explain relevance of art.
- b) Write a note on Post- Impressionism. Mention the artists and their celebrated works from the period.
- c) Write a note on Pablo Picasso- his life and his works.
- d) Enumerate and explain climate- responsive architecture examples.
- e) Enumerate and explain any two examples of Indian vernacular architecture.

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B. Architecture (Semester – III) (CBCS) Examination Dec-2019
BASIC ACCOUNTING

Day & Date: Thursday, 19-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
2) Write the Debit and Credit.
3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options.

07

- 1) Depreciation is always charged on _____ Assets.

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| a) Current | b) Fixed |
| c) Fictitious | d) Intangible |
- 2) A brief explanation of the business transaction for which an entry is passed is called as _____.

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| a) Narration | b) Entry |
| c) Being | d) Assets |
- 3) Cash purchases of goods should be credited to _____.

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| a) Purchases A/c | b) Cash A/c |
| c) Sales A/c | d) Goods A/c |
- 4) Now for income tax purpose an accounting year starts on _____.

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| a) 1 st Jan. to 31 st Dec | b) 1 st Nov. to 31 st , Oct |
| c) 1 st April to 31 st March | d) 1 st June to 31 st July |
- 5) Carried down (c/d) balance indicates _____ balance.

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| a) Opening | b) Real |
| c) Capital | d) Closing |
- 6) Total of all debit balance must be _____ to the total of all credit balance.

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| a) Different | b) Equal |
| c) More | d) Less |
- 7) Surplus of income over expenses is _____.

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| a) Loss | b) Profit |
| c) Deficit | d) None of these |

Q.2 Write a short note (any three)

15

- a) Cash Book
- b) Meaning of Book keeping and its Objectives
- c) Cash and Trade Discount
- d) Voucher and its Types
- e) Real Account and its Types

Q.3 Answer the Problem.**a) Journalize the following transactions.**

- 2011 July
- 1 Shri. Ameya started his business with cash Rs. 81,000, Building Rs.1,00,000 and borrowed from friend Jitendra.
 - 4 Paid cash into Bank of India Rs. 90,000.
 - 5 Purchased furniture from Manik and issued him a cheque Rs. 6,000.
 - 7 Credit purchases from Shinde Rs. 15,000 less 4% trade discount.
 - 8 Returned goods to Shinde Rs. 150.
 - 10 Cash sales Rs. 4,500.
 - 11 Credit sales to Ashok Rs. 3,000 less trade discount 2%.
 - 12 Ashok returned goods of Rs. 294.
 - 14 Goods taken for personal use Rs. 300.
 - 16 Paid postage Rs. 100 and electricity bill Rs. 600.
 - 19 Sent a telegram of Rs. 30 to Shinde to supply goods of 7500 immediately.
 - 21 Purchased computer and printer of Rs. 25,000 from Kewal and in part payment gave him cash of Rs. 15,000.
 - 28 Paid life insurance premium on life of Ameya of Rs. 3,000.
 - 29 Paid telegram deposit for new telephone connection by cheque Rs. 2,000.
 - 31 Paid for travelling expenses Rs. 3,000.

b) Record the following transactions in a Simple Cash Book

- 2000 Feb.
- 1 Opening cash balance Rs. 40,000.
 - 2 The businessman invested further cash Rs. 30,000 into the business.
 - 4 Purchased goods worth Rs. 40,000 at 5% trade discount.
 - 7 Received commission Rs. 2,000.
 - 9 Paid Rs. 4,000 to Avinash on account.
 - 12 Cash sales Rs. 36,000 off 10% trade discount.
 - 14 Deposited into the bank Rs. 25,000.
 - 17 Received Rs. 22,000 from Kamlakar on account.
 - 19 Paid salaries Rs. 12,500 to staff.
 - 22 Withdrawn Rs. 16,000 from the bank for business use.
 - 24 Withdrawn Rs. 3,700 from the bank for personal use.
 - 27 Borrowed Rs. 25,000 from wife for doing further business.
 - 28 Deposited all cash in excess of Rs. 9,800.

Q.4 Write in brief any one.

16

- a) Petty cash book meaning & its types.
- b) Explain the following concepts.
 - 1) Assets and its types
 - 2) Liabilities and its types
 - 3) Capital and Drawings
 - 4) Debtors and Creditors
 - 5) Bad debts

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**B. Architecture (Semester– IV) (CBCS) Examination Dec-2019
BUILDING SERVICES – II**

Day & Date: Friday, 06-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

Instructions: 1) All questions are compulsory.
2) Draw neat sketches wherever necessary.
3) Figures to right indicate maximum marks.

- Q.1 Fill in the blanks. 07**
- 1) _____ is the common coagulant used in water treatment works.
 - 2) Addition of chlorine to raw water before any treatment known as _____.
 - 3) _____ is a device that regulates flow of water.
 - 4) Per capita demand of required for residential use _____.
 - 5) _____ values relieve high pressure in the pipe lines.
 - 6) Ph value for good drinking water is _____.
 - 7) Device which are used to flow water at increased pressure _____.
- Q.2 Write short notes. (any three) 15**
- a) River intake
 - b) Artesian spring
 - c) Wholesome water
 - d) Stand pipes
- Q.3 Answer any four of the following question. 48**
- a) What are advantages and disadvantages of following pipe material used in the water supply distribution system- A. C.I.PIPES B. PVC PIPE?
 - b) Why pumping is necessary in water supply system? What are the various types of pump used for conveyance of water?
 - c) Design overhead water for colony of 30 tenements? Draw neat sketch showing all connections.
 - d) What is the function of ferrule? Discuss ferrule connections in detail.
 - e) What are the objectives of water treatment? Sketch layout of water treatment plant.

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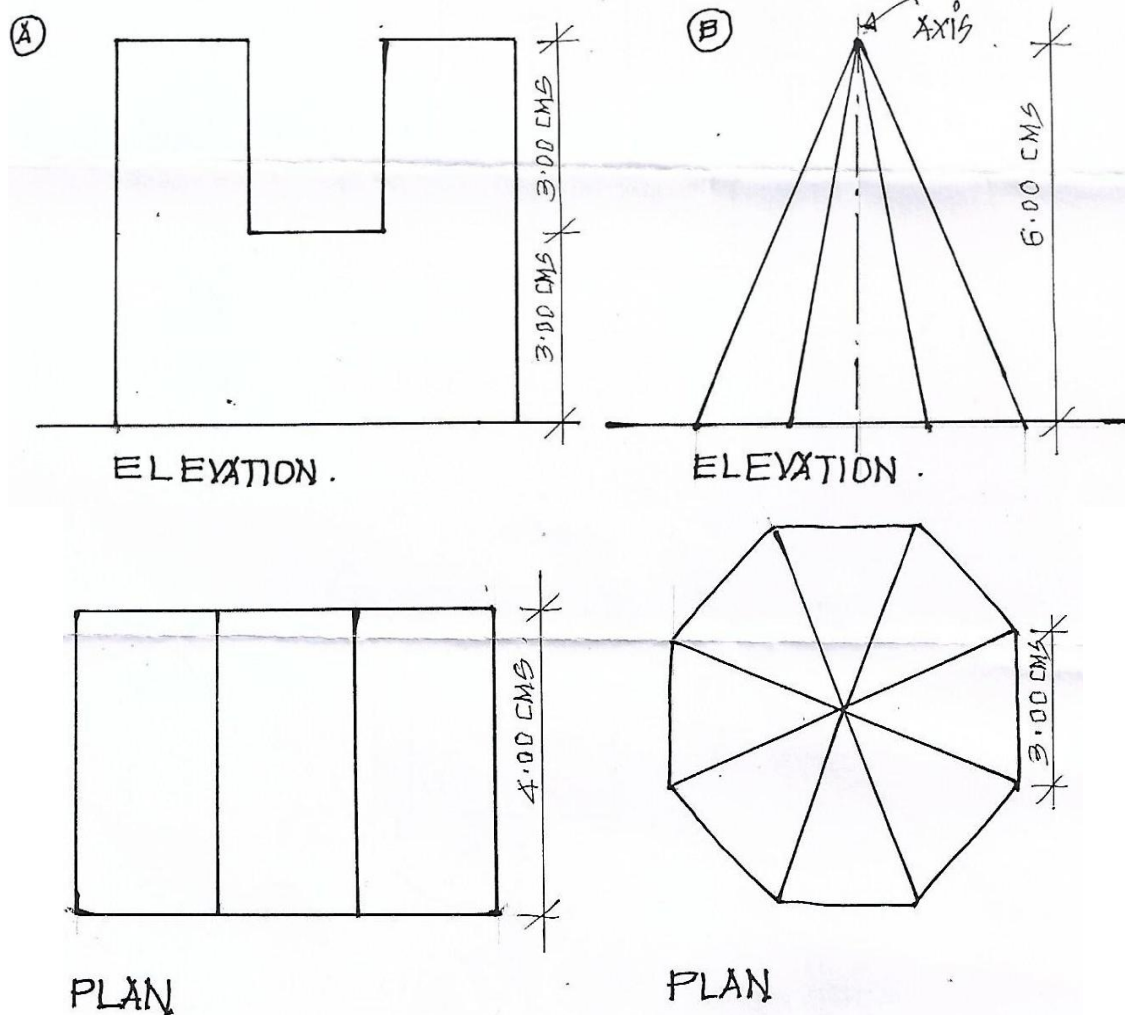
**B. Architecture (Semester – IV) (CBCS) Examination Dec-2019
ARCHITECTURAL GRAPHICS - IV**

Day & Date: Monday, 09-12-2019
Time: 02:30 PM To 05:30 PM

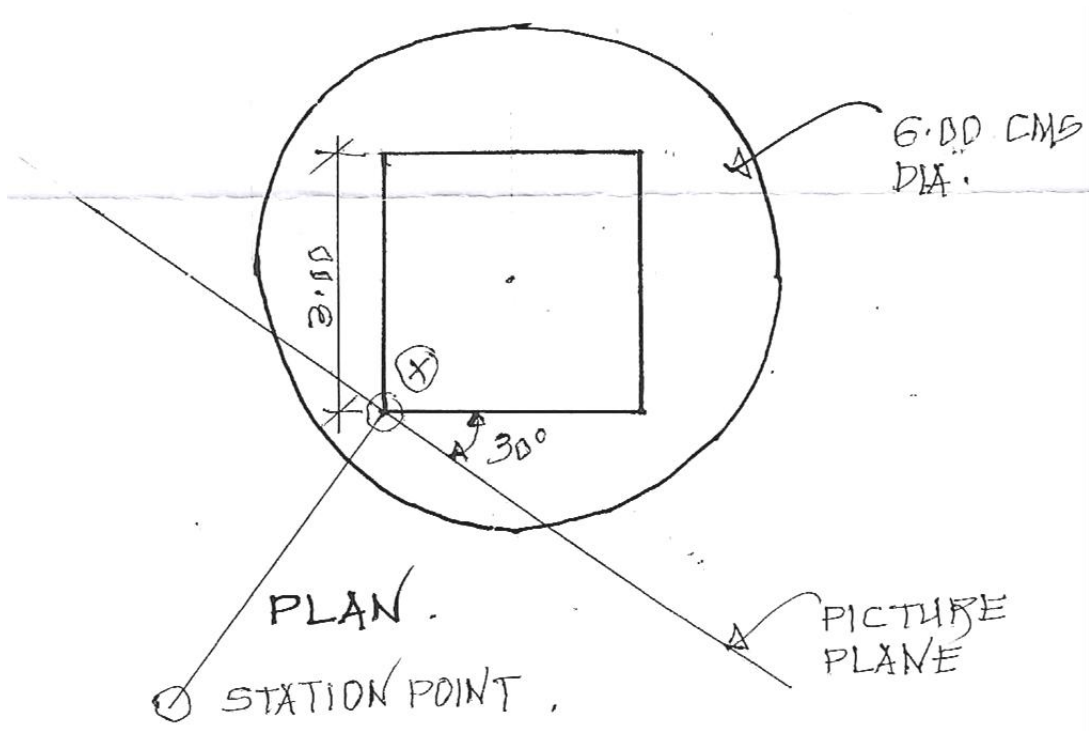
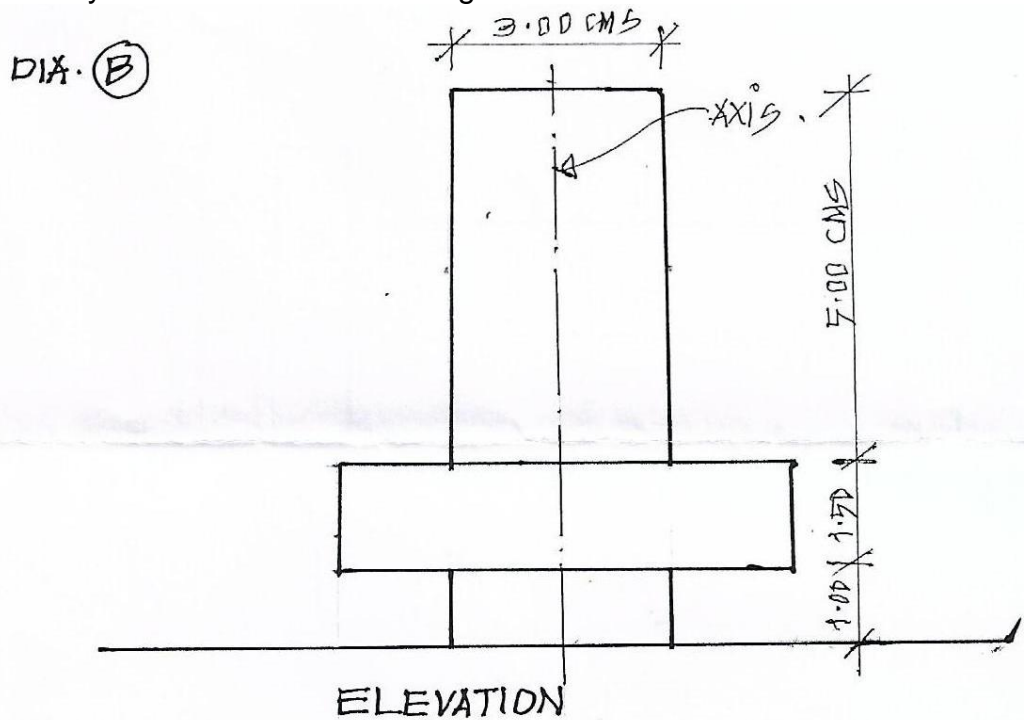
Max. Marks: 70

- 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 necessary.

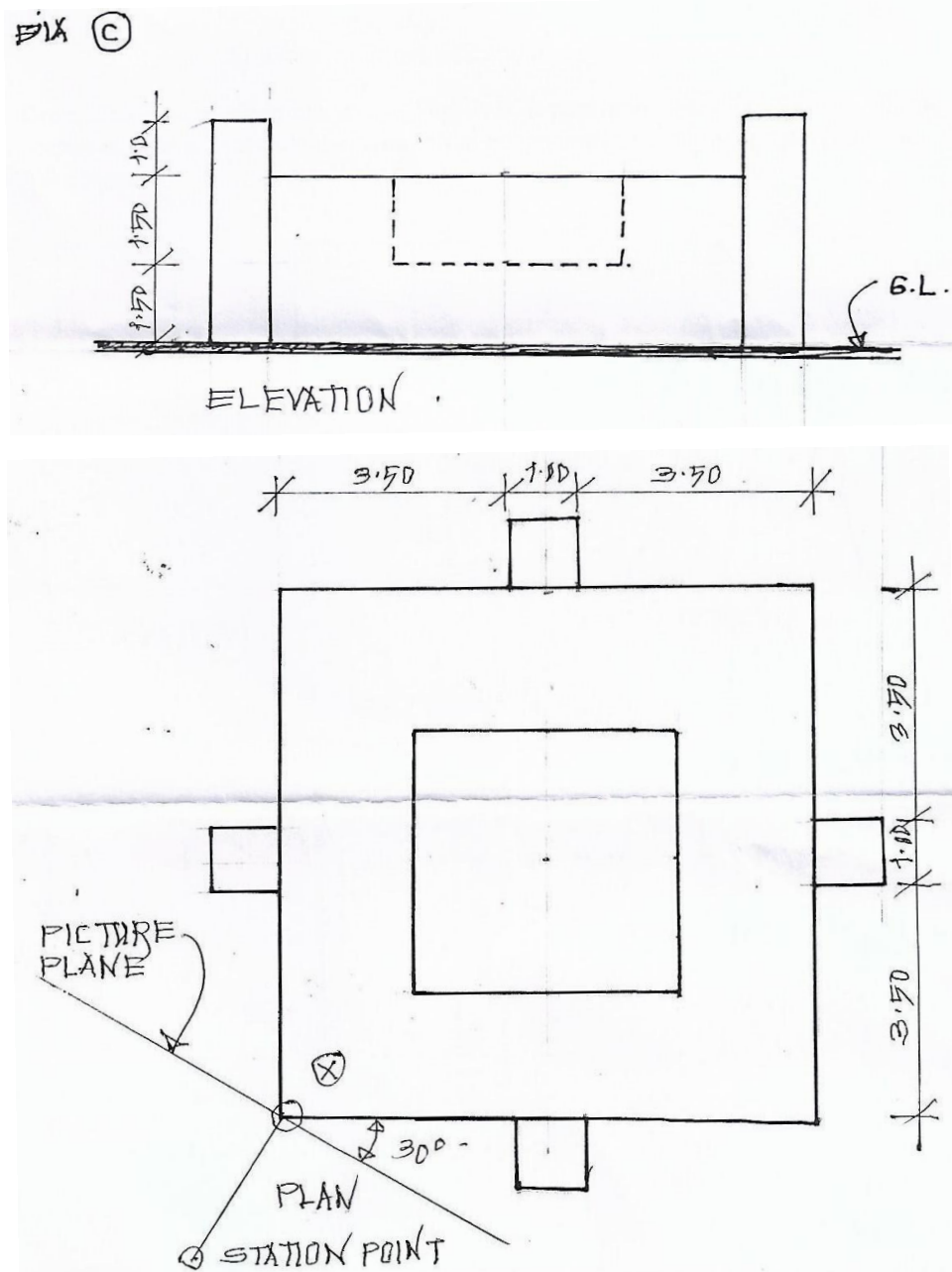
Q.1 Draw shades and shadows of the Dia. A-B in plan and elevation considering the source of light is in conventional direction on the vertical and horizontal planes of the object. **20**



- Q.2** Draw perspective view of the given object by observing points in Dia. B. 20
- A plane makes an angle as shown in Figure.
 - The picture plane touches the object
 - Station point is 150 mm away from the 'X'
 - The eye level is 120 mm above ground level.



- Q.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.



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**B. Architecture (Semester –IV) (CBCS) Examination Dec-2019
CLIMATOLOGY AND ENVIRONMENT - II**

Day & Date: Wednesday, 11-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Choose the correct alternatives from the options and rewrite the sentence. 07

- 1) In valleys wind blows Uphill during the _____.
a) Day
b) Down
c) Night
d) None of above
- 2) Stack Ventilation through rooms is increased by _____ distance between high and low openings.
a) greater
b) opposite
c) lesser
d) none of above
- 3) Through out the day, maximum humidity is in _____.
a) Afternoon
b) Late evening
c) Early morning
d) Cannot determine
- 4) _____ that can tolerate temperature swings can be located between protected rooms and undesired heat or cold.
a) buffer zone
b) tower
c) cooling zone
d) none of above
- 5) Average radiation on a horizontal surface is given in _____.
a) W/m²/ day
b) lux/m²/ day
c) deg C/m²/ day
d) none of above
- 6) Excessive luminance ratios in the field of vision are called "_____".
a) Glare
b) DF
c) Heat
d) None of above
- 7) The _____ of an object is its ability to modify the incident light by selection absorption.
a) Colour
b) Smoothness
c) Texture
d) None of above

Q.2 Write short note on (Any Three)**15**

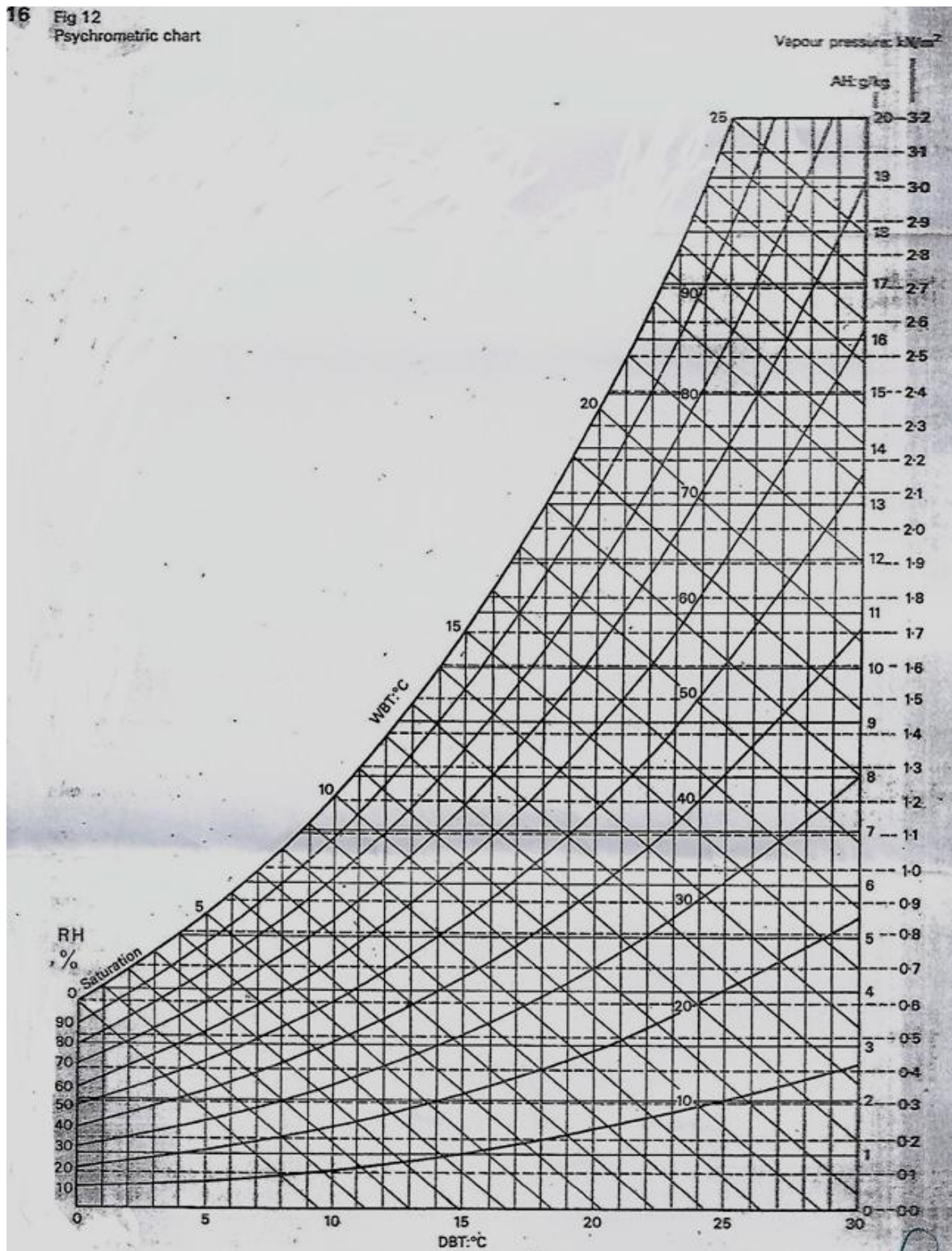
- a) Sun path Diagram
- b) Evaporative Cooling Tower
- c) Sun Penetration in Building
- d) Buffer zone for Heat gain reduction

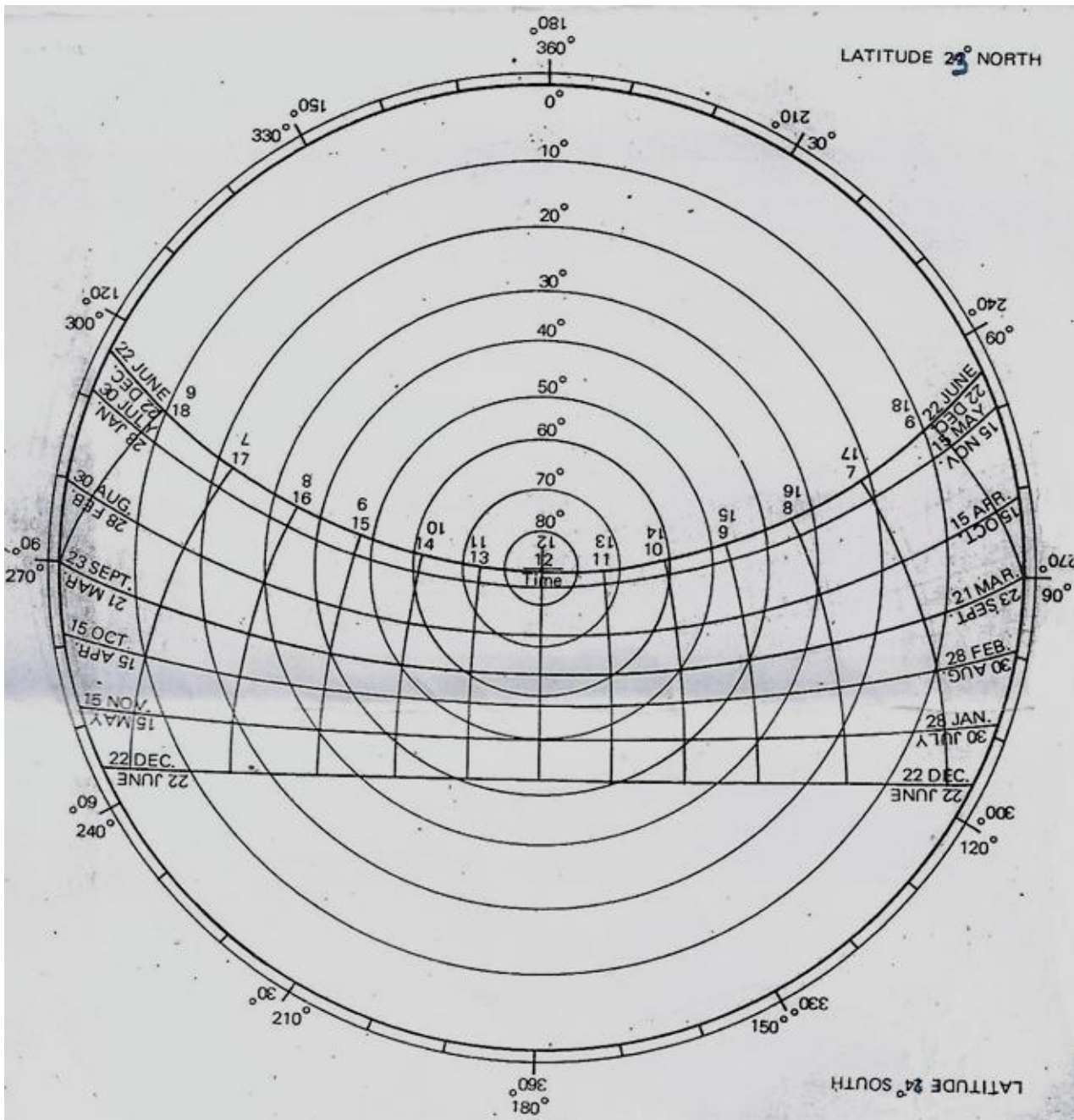
Q.3 a) Explain in Short Heat transfer Through Envelope.**06**

- b) Explain External Internal Factors affecting day lighting.

06**Q.4 Explain three Technique with sketches each for Site Building and Component scale Strategy.****12**

- Q.5 a)** Using psychrometric chart find the values in following condition. **06**
- 1) If DBT is 24°C and WBT is 19°C find RH, VP and AH.
 - 2) If AH is 13g/kg and WBT is 19°C find DBT, RH and VP.
- b)** From the given sun path diagram, for 23°N, find the azimuth and altitude angles of the sun on **06**
- 1) June 5 p.m.
 - 2) November 4.30 p.m.
 - 3) March 11a.m.
- Q.6** How to Use Climate Response Matrix for Site Planning Explain with Sketches. **12**





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B. Architecture (Semester – IV) (CBCS) Examination Nov/Dec-2019
THEORY OF STRUCTURE- IV

Day & Date: Friday, 13-12-2019
 Time: 02:30 PM To 05:30 PM

Max. Marks: 70

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

Section-I

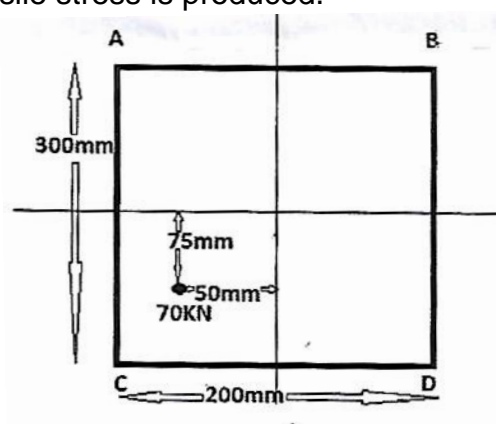
Q.1 Choose the correct alternatives from the options and rewrite the sentence. 08

- 1) Maximum deflection of cantilever beam with UDL Over entire span is _____.
 - a) $wL^4/8EI$
 - b) $wL^4/6EI$
 - c) $wL^4/4EI$
 - d) None
- 2) Effective length of column of one end is fixed and other hinged is _____.
 - a) $L_{eff}=L_a$
 - b) $L_{eff}=2L_a$
 - c) $L_{eff}=L_a/2$
 - d) None
- 3) Crushing of column occurs under _____.
 - a) Axial load
 - b) Transverse load
 - c) Linear load
 - d) None
- 4) Limit state method dealt with limit state of collapse and limit state of _____.
 - a) Ductility
 - b) Flexibility
 - c) Servicability
 - d) None

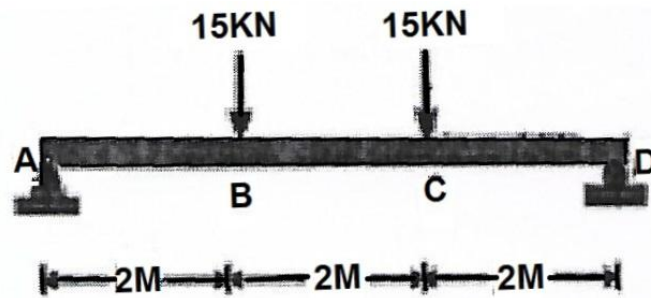
Q.2 Explain Working Stress Method & Limit State Method. 06

Q.3 A steel of symmetrical I section having flange 100mm X 15mm and web of 120mm X 18mm is used as a strut, 4m long which is hinged at one end & fixed at another end. Calculate the Crippling load by Euler's formulae= 2.1×10^6 kg/cm². 14

Q.4 A rectangular column carries an eccentric point load as shown in figure. 14
 Calculate stresses at each corner, zone of tensile stresses & also additional force such that no tensile stress is produced.



- Q.5** Find slope at A & deflection at C for following beam if $E=2 \times 10^5 \text{ N/mm}^2$, $I=5.5 \times 10^6 \text{ mm}^4$. **14**



- Q.6** a) Explain concept of Core of section. Derive equation of core of section for Solid Rectangular & Circular Section. **10**
b) Write a short note on Equivalent Length of Column. **04**
- Q.7** a) Explain different types of retaining wall with diagram. **07**
b) What are structural properties and allowable stresses in masonry structures? **07**

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**B. Architecture (Semester –I) (CBCS) Examination Dec-2019
HISTORY OF ARCHITECTURE – I**

Day & Date: Tuesday, 10-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

Instructions: 1) Q.No.1 and Q.No.2 are compulsory. solve any four question from the Remaining question.

2) Draw neat sketches wherever necessary.

3) Figures to the right indicates full marks.

- Q.1 Fill in the blanks.** **07**
- 1) Prime Minister of Chandragupta maurya was _____.
 - 2) Entrance gateway of citadel of Tiryns known as _____.
 - 3) Ancient civilization- the land between two river is _____.
 - 4) Egyptian king is known as _____.
 - 5) Neanderthal man is also known as _____.
 - 6) _____ Veda was the first and earliest among all Vedas.
 - 7) The wrapped dead body preserved inside the pyramids is called as _____.
- Q.2 Write short notes on (Any Three)** **15**
- a) Vedic huts
 - b) Stone henge
 - c) The megaron
 - d) Sphinx
- Q.3** Explain the settlement of catal huyuk in detail . **12**
- Q.4** With the help of neat plan, explain the features of palace of Percepolis. **12**
- Q.5** Explain the planning and construction principles of Indus valley towns. **12**
- Q.6** Explain the funerary architecture of egyptian civilization with one example of pyramid. **12**
- Q.7** Discuss in details elements of civilization. **12**

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**B. Architecture (Semester - IV) (CBCS) Examination Dec-2019
HISTORY OF ARCHITECTURE- IV**

Day & Date: Monday, 16-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

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

- Q.1 Match the pairs. 07**
- | | |
|--------------------------------|---------------------------|
| 1) Friday Mosque | a) Directed Towards Mecca |
| 2) Prayer In Islam | b) Kiosk |
| 3) Head Priest of Mosque | c) Jama Masjid |
| 4) Calling For Prayer | d) Roza |
| 5) Quibla Wall | e) Namaz |
| 6) Open Pavilion | f) Imam |
| 7) Fast During Month of Ramzan | g) Azan |
- Q.2 Write short notes. (Any Three) 15**
- Pendentive And Squinches
 - Diwan - e - Khass
 - Raj Path New Delhi
 - Five Pillers of Islam
- Q.3 Answer the following questions. (Any Four) 48**
- Explain with neat sketch tower of victory - Qutb minar at Delhi.
 - Explain Islamic tomb architecture with reference to tomb of Ghias-Ud-Din Tughalaq?
 - Sketch and explain architectural features of parliament house at new Delhi?
 - Explain the following monument at fatehpur sikri.
 - Jodhabai's palace
 - Raja birbal's house
 - With the help of neat sketches explain the structural concept of intersecting arches in Golgumbaz?

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**B. Architecture (Semester – IV) (CBCS) Examination Dec-2019
ECOLOGY IN ARCHITECTURE**

Day & Date: Wednesday, 18-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options. 07

- 1) _____ transport is the best to control air pollution.
 - a) Single
 - b) Public
 - c) Small vehicle
 - d) Personal
- 2) Plant more trees of local or _____ species.
 - a) Exotic
 - b) Rare
 - c) Indigenous
 - d) Flowering
- 3) When shopping, choose products in limited _____.
 - a) Amount
 - b) Weight
 - c) Packaging
 - d) All above
- 4) Select a light shade of paint to walls and ceilings to reduce _____ consumption.
 - a) Electric
 - b) Fuel
 - c) Water
 - d) Heat
- 5) _____ pit is helpful in cutting down the amount of organic waste that sends to landfill.
 - a) Soil
 - b) Dumping
 - c) Compost
 - d) Percolation
- 6) Environment and development are closely connected and that there is need to, 'care for _____'
 - a) Earth
 - b) Nature
 - c) World
 - d) Society
- 7) Materials which are used in urban housing are very energy _____.
 - a) Efficient
 - b) Intensive
 - c) Saving
 - d) Gaining

Q.2 Explain the terms (Any Three) 15

- a) Social sustainability
- b) Solar energy
- c) Energy flow in ecosystem
- d) Global warming

Q.3 Answer in detail (Any One) 12

- a) What we can do to save electricity in residential sector?
- b) Explain waste management in construction industry.

Q.4 a) Name the biodiversity areas in India which are now globally accepted national hotspots? 06

- b) Elaborate the term, 'everything we use is to tracked back to its source'. 06

- | | | |
|------------|---|-----------|
| Q.5 | a) Principles of green architecture. | 06 |
| | b) Benefits of green architecture. | 06 |
| Q.6 | a) How we can relate the term resource utilization with construction industry. | 06 |
| | b) Explain benefits of locally available construction materials. | 06 |

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B. Architecture (Semester - V) (CBCS) Examination Dec-2019
THEORY OF STRUCTURE-V

Day & Date: Saturday, 07-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

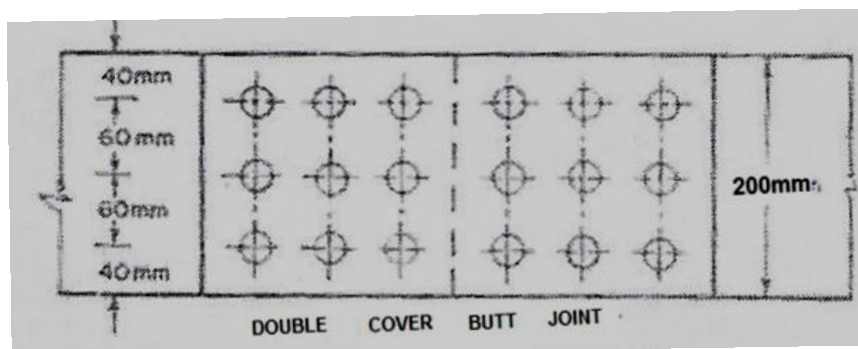
- Instructions:** 1) Use of Scientific Calculator is allowed.
2) Q. No. 1 and 2 are compulsory. From remaining questions solve any four.
3) Figures to the right indicates full marks.
4) IS 800 and Steel Table is allowed.
5) Assume suitable data if necessary.

Q.1 Fill in the blanks by choosing correct alternatives given below. 08

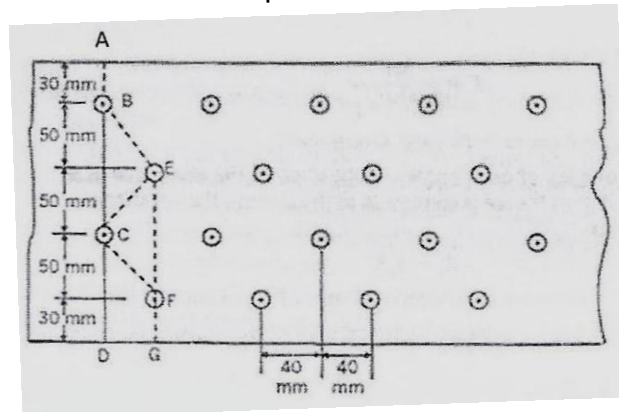
- 1) Maximum slenderness ratio of compression member carrying dead load and imposed loads _____.
 - a) 180
 - b) 250
 - c) 350
 - d) none of these
- 2) As compared to field rivets, shop rivets are _____.
 - a) Stronger
 - b) Weaker
 - c) Equal
 - d) none of these
- 3) Stress is inversely proportional to _____.
 - a) Strain
 - b) Force
 - c) Area
 - d) none of these
- 4) The radius of gyration of a section is a geometrical property of the section _____.
 - a) $r = (I/A)^{1/2}$
 - b) $r = (I/A)^2$
 - c) $r = (Z/A)^2$
 - d) none of these

Q.2 Differentiate between Welded Joints and Riveted Joints. 06

Q.3 Determine the strength of a double cover butt joint used to connect two flats 200 F 12. The thickness of each cover plate is 8 mm. Flats have been joined by 9 rivets in chain riveting at a gauge of 60 mm as shown in Fig. 6.3. What is the efficiency of the joint? Adopt working stresses in rivets and flats as per IS:800-84. 14



- Q.4** a) Find the strength of the 12 mm thick plate shown in Fig. All the holes are 21.5 mm as gross diameter. Take permissible stress=150 N/mm². **10**

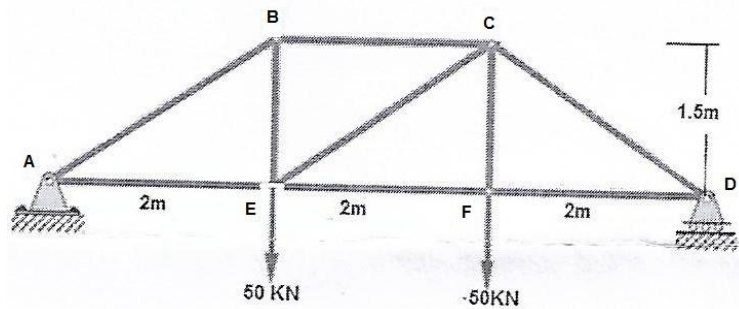


- b) Write a note on Net Effective Area of tension members. **04**

- Q.5** Design a rolled steel beam section column to carry an axial load 1100 kN. The column is 4 m long and adequately restrained in position but not in direction at both ends. **14**

- Q.6** Design a simply supported beam to carry a uniformly distributed load of 60 kN/m. The effective span of beam is 4.5 meters. The effective length of compression flange of the beam is also 4.5 m. The ends of beam are not free to rotate at the bearings. **14**

- Q.7** Find the forces in the members of following truss. **14**



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Set **P**

B. Architecture (Semester –V) (CBCS) Examination Dec-2019
HISTORY OF ARCHITECTURE –V

Day & Date: Tuesday, 10-12-2019
 Time: 10:00 AM To 01:00 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
 2) Draw neat sketches wherever necessary.
 3) Figures to the right indicate full marks.

Q.1 Fill in the blanks. 07

- 1) Less is More was quoted by _____.
- 2) Falling Water was designed by _____.
- 3) _____ at Brasilia was designed by Ar Oscar Niemeyer.
- 4) _____ is known as Father of sky scraper.
- 5) Casa Mila Apartment was designed by _____.
- 6) Wainwright building is an important building of Architect _____.
- 7) Villa Savoye is a great example of _____ architecture.

Q.2 Write short notes with sketches. (Any three) 15

- a) Mayer and Schlesinger department store
- b) Farnsworth house
- c) Ronchamp church
- d) Art Nouveau

Q.3 Explain in detail with sketches. (Any Four) 48

- a) Explain the works and philosophy of Ar. Zaha Hadid and two works of her in brief.
- b) Explain the thought of Bauhaus school and the Bauhaus school building in brief.
- c) Explain how industrial revolution changed society in Settlements. Also state the use of new materials in building industry.
- d) Explain the works and philosophy of Ar. Mies-Van-Der Rohe and two works of his in brief.
- e) Explain the works and philosophy of Ar. Frank Lloyd Wright and two works of his in brief.

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Set **P**

**B. Architecture (Semester –V) (CBCS) Examination Dec-2019
BUILDING SERVICES – III**

Day & Date: Thursday, 12-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

Instructions: 1) Q. No. 1 and Q. No. 2 are compulsory. From remaining questions solve Any four.
2) Figures to the right indicates full marks.

- Q.1 Fill in the blanks. 07**
- 1) _____ is the material which allows an electric current passing through it relatively free.
 - 2) The voltage between any two phase wires is _____ V and one phase wire and neutral is 240 V.
 - 3) Unit for Intensity of Illumination is _____.
 - 4) Voltage X Current _____.
 - 5) Moving staircase are known as _____.
 - 6) _____ are used in air conditioning to keep air free from dust, bacteria etc.
 - 7) _____ filament is used in incandescent lamp.
- Q.2 Write short notes. 15**
- a) Incandescent lamp
 - b) Safety measures against fire in residential building
 - c) Plenum System
- Q.3 Explain in detail Concept & Working of Lifts. 12**
- Q.4 Explain in detail types of Wiring System used in Electrical System. 12**
- Q.5 What is Earthing? State its types. Explain Concept of Pipe Earthing in detail. 12**
- Q.6 Explain with sketch-split Air Conditioning System. 12**
- Q.7 Give general consideration and rules for natural ventilation. 12**

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**B. Architecture (Semester – V) (CBCS) Examination Nov/Dec-2019
ACOUSTICS**

Day & Date: Saturday, 14-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Make suitable assumptions wherever necessary.

Q.1 A) Choose the correct alternatives from the options and rewrite the sentence. 07

- 1) Flutter is produced due to _____ phenomenon.
 - a) Transmission
 - b) Diffraction
 - c) Parallelism
 - d) None of the above
- 2) In Acoustic Principals Noice is _____.
 - a) desirable
 - b) un desirable
 - c) watts/cm²
 - d) none of above
- 3) Sound intensity is measured in _____.
 - a) watts/cm²
 - b) dB
 - c) jules/m
 - d) none of the above
- 4) The time taken by sound to attenuate by 60dB is called _____.
 - a) reverbaration time
 - b) dead time
 - c) none of the above
 - d) flutter
- 5) Thin wall barrier is _____ scale strategy.
 - a) site
 - b) component
 - c) none of the above
 - d) building
- 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) Velocity of sound in water is _____ m/s
 - a) 340
 - b) 440
 - c) 1410
 - d) none

B) Calculate total absorption required and acoustically design a theatre for capacity of 1000 people consider volume 4.5 m³ /person and Rt=1.1; 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) course concrete -0.31
- 7) heavy fabric-0.55
- 8) curtain-0.12

Q.2 Give design guide lines for Auditorium along with sketches. 12

OR

Explain with sketches mounting technique of acoustical material. 12

- Q.3** a) Define sound and explain propagation of sound. **05**
b) Explain mechanics of absorption. **07**
- Q.4 Write short notes. (Any three)** **12**
- a) Frequency, Wavelength and amplitude
 - b) Near field
 - c) Image source
 - d) Sabines Formula

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B. Architecture (Semester –V) (CBCS) Examination Dec-2019
SUSTAINABLE BUILDING MATERIALS

Day & Date: Tuesday, 17-12-2019
Time:10:00 AM To 12:00 PM

Max. Marks: 50

Instructions: 1) Question 1 is compulsory and solve any two from remaining.
2) Figures to the right indicate full marks.

- Q.1 a) Write short note. (any four) 20**
- 1) Various uses of Bamboo as a sustainable building material.
 - 2) Expanded clay grains
 - 3) Embodied energy
 - 4) Phases of life of any building
 - 5) Rammed earth
- b) Write the difference between renewable and non renewable material. 10**
- Q.2 Explain the term 'cradle to grave' or 'cradle to cradle' approach for any building material. 10**
- Q.3 Aluminum as a sustainable building material. 10**
- Q.4 What is life cycle analysis of building material? 10**

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**B. Architecture (Semester – VI) (New) (CBCS) Examination Dec-2019
BUILDING SERVICES – IV**

Day & Date: Friday, 06-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

Instructions: 1) Make suitable assumptions wherever necessary and mention in your Answer book.
2) Figure to right indicates full marks.
3) Question No 1 and 2 are compulsory solve any 4 from the remaining.

- Q.1 Fill in the blanks.** **07**
- 1) The phenomenon by the virtue of which a soil is clogged with sewage matter is called _____.
 - 2) Composition and lagooning are methods of _____.
 - 3) _____ are also known as percolating filters.
 - 4) The process of settling suspended particles is known as _____.
 - 5) When decomposition of organic matter takes place in presence of oxygen it is known _____.
 - 6) Pathogenic bacteria enter waste water primarily from _____.
 - 7) B.O.D indicates _____.
- Q.2 Write short notes on (any three)** **15**
- a) vermiculture
 - b) sewage farming
 - c) industrial waste
 - d) trickling Filters
- Q.3** Draw a neat sketch of a typical septic tank and Explain its components. **12**
- Q.4** What are the natural methods of sewage disposal? Explain any two in details. **12**
- Q.5** Explain with the help of neat sketch Refuse chute and explain its component parts. **12**
- Q.6** Write a note on WASTE WATER TREATMENT PLANT and explain layout with help of sketch. **12**
- Q.7** What are the objectives of sewage treatment plant? Explain layout with help of sketch. **12**

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**B. Architecture (Semester - VI) (New) (CBCS) Examination Dec-2019
BUILDING BYLAWS**

Day & Date: Monday, 09-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 50

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

Q.1 Choose the correct alternatives from the options and rewrite the sentence. 05

- 1) Minimum height of habitable room is _____ m.

| | |
|---------|--------|
| a) 3 | b) 1.8 |
| c) 2.75 | d) 2.4 |

- 2) Balcony permitted at first floor is not more than _____ % of builtup of same floor area.

| | |
|--------|-------|
| a) 15 | b) 20 |
| c) 1.1 | d) 10 |

- 3) Minimum height of basement ceiling is _____ m above surrounding ground level.

| | |
|--------|--------|
| a) 0.9 | b) 1.2 |
| c) 1.8 | d) 1.5 |

- 4) Cul de sacs turning space should not be less than _____ sqm.

| | |
|-------|----------------------|
| a) 81 | b) 100 |
| c) 30 | d) none of the above |

- 5) Area of Habitable room area should not be less than _____ sqm.

| | |
|--------|----------------------|
| a) 5.5 | b) 9.5 |
| c) 7.5 | d) none of the above |

Q.2 Write short note. (Any Three) 15

- a) Fire escape staircase
- b) Recreational Ground
- c) Write to access
- d) Cul-de-sacs

Q.3 a) Explain in Detail FSI and building potential with calculation example. 07

- b) Explain public parking spaces in detail. 08**

Q.4 a) Write a note on Land use classification and its permissible uses. 15

OR

- a) Explain concept of FSI and its importance as growth regulator**

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Set **P**

B. Architecture (Semester – VI) (New) (CBCS) Examination Nov/Dec-2019
URBAN PLANNING

Day & Date: Friday, 13-12-2019
 Time: 10:00 AM To 01:00 PM

Max. Marks: 70

Instructions: 1) Q. no 1 is compulsory.
 2) Draw net sketches wherever necessary.

Q.1 Fill in the blanks. 07

- 1) Garden city concept was emphasized by _____.
- 2) Height zoning regulates the _____ of the building in the town/city.
- 3) In grid – iron pattern the road meets at _____.
- 4) A narrow street or approach road with a dead end is called as _____.
- 5) FSI Stands for _____.
- 6) New Delhi city was planned by _____.
- 7) Chandigarh city is divided into _____ sectors.

Q.2 Write short notes. (Any three) 15

- a) Clover leaf junction
- b) Satellite town
- c) Radial street pattern
- d) Vertical and horizontal growth

Q.3 Answer the following. (Any four) 48

- a) Describe any three types of town plans developed in India with examples.
- b) Explain how topography influences on human settlements.
- c) Explain with neat sketches the planning of Chandigarh.
- d) Explain the concept of garden city by Ebenezer Howard.
- e) Zoning is an important tool in the development plan. Explain
- f) Slum is a social evil. Explain

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**B. Architecture (Semester –VI) (New) (CBCS) Examination Dec-2019
ESTIMATING SPECIFICATION & COSTING- I**

Day & Date: Monday, 16-12-2019
Time:10:00 AM To 01:00 PM

Max. Marks: 70

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

Q.1 Solve any four of the following questions. (Two marks each) 08

- 1) Unit of Nahani Trap _____.
 - a) Square meter
 - b) Running meter
 - c) Cubic meter
 - d) No. s
- 2) Unit of texture Plaster on External Surface _____.
 - a) Square meter
 - b) Running meter
 - c) Cubic meter
 - d) No. s
- 3) How many bricks required in 10 cum volume (Brick size = 20 × 10 × 10cm)?
 - a) 4500
 - b) 5500
 - c) 5000
 - d) None of above
- 4) How many cement bag required in 10 cum volume M15 concrete?
 - a) 78.96 Bags
 - b) 43.42 Bags
 - c) 62.04 Bags
 - d) None of above
- 5) Unit of Oil Painting for Door Frames with Shutter _____.
 - a) Square meter
 - b) Running meter
 - c) Cubic meter
 - d) No. s

Q.2 Attempt any three 12

- a) Prepare rate analysis for first class brick work.
- b) Contingencies
- c) Rules for deductions of Internal Plaster as per IS 1200.
- d) Cubical Area method.

Q.3 Calculate quantity of any five following item of work by Long Wall Short Wall method & enter the same in standard format of Measurement Sheet with brief description of item. (Refer fig 1) All Rooms having two windows. 30

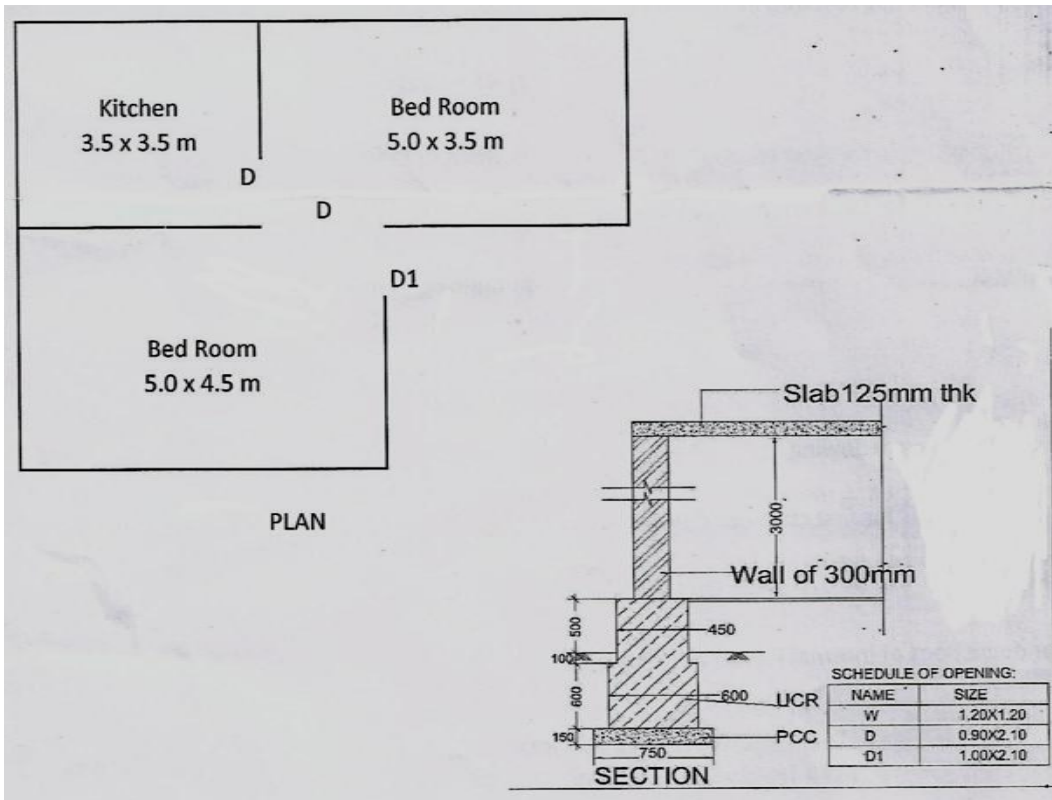
- a) Excavation for foundation
- b) UCR Upto Plinth level
- c) Plinth filling considering full depth murum filling
- d) RCC Slab
- e) Sand Face Plaster in C.M. 1:5
- f) Internal Flooring
- g) Doors and Windows

Q.4 Prepare Abstract sheet for above residential building with following given rate. **10**

- a) Excavation for foundation, Rs.500/- per cum.
- b) UCR Upto Plinth level, Rs. 3500/- per cum.
- c) Plinth filling considering full depth murum filling, Rs. 750/- per cum.
- d) RCC Slab, Rs.7256/- per cum.
- e) Internal Neeru Plaster in C.M. 1:5, Rs. 356/- per sq.m.
- f) Internal Flooring, Rs. 1347/- per sq.m.
- g) Doors and Windows, Rs. 5568/- per sq.m

Q.5 Work out the quantity of internal plaster for a room size 6.3 × 5.1 m (inside dimensions) having floor height up to ceiling is 3.0 m. Schedule of opening is as mention below. **10**

- D1 1.10 m × 2.10 m
- W1 1.80 m × 1.50 m



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**B. Architecture (Semester – VI) (Old) (CGPA) Examination Dec-2019
BUILDING SERVICES - IV**

Day & Date: Friday, 06-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

- Instructions:** 1) Make suitable assumptions wherever necessary and mention in your Answer book.
2) Figures to right indicates full marks.
3) Question No 1 and 2 are compulsory solve any 4 from remaining question.

- Q.1 Fill in the blanks.** **07**
- 1) In combined system only _____ of sewer is laid and it carries both sewage and storm water.
 - 2) _____ is installed for the purpose of ventilation.
 - 3) _____ is termed as all the solid and the semisolid waste matters of a community except night soil.
 - 4) _____ and lagooning are methods of sewage disposal.
 - 5) The liquid waste from kitchen, bathroom and wash basin is known as _____.
 - 6) B.O.D indicates _____.
 - 7) The process of settling suspended particles is known as _____.
- Q.2 Write Short Note on (any three)** **15**
- a) Sludge Digestion.
 - b) Primary Clarifiers.
 - c) Aqua privy.
 - d) Grit chambers.
- Q.3** Explain with the help of neat sketch a biogas plant. **12**
- Q.4** Draw and explain layout of a typical sewage treatment plant. **12**
- Q.5** Explain sewage disposal in unsewered areas. **12**
- Q.6** Discuss natural methods of sewage disposal explain with sketch of method of disposal on land. **12**
- Q.7** Discuss methods collection of garbage at city level. **12**

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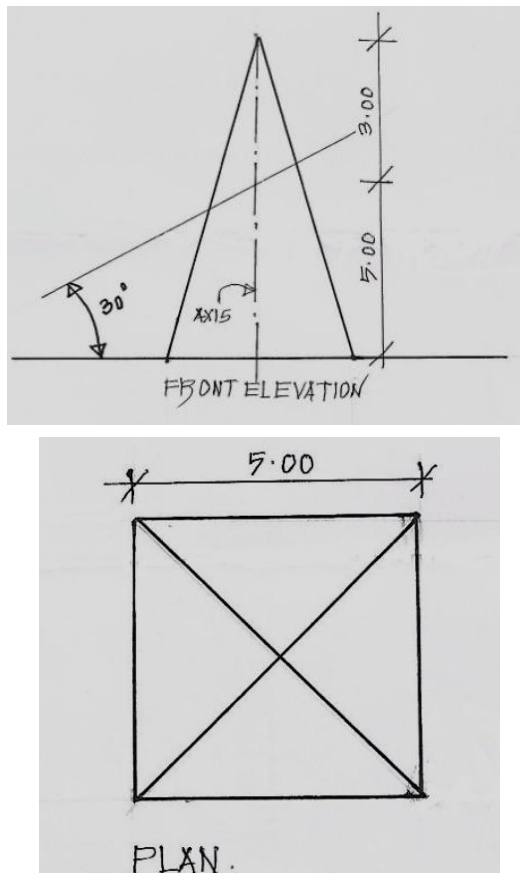
**B. Architecture (Semester – II) (CBCS) Examination Dec-2019
ARCHITECTURAL GRAPHICS – II**

Day & Date: Friday, 06-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

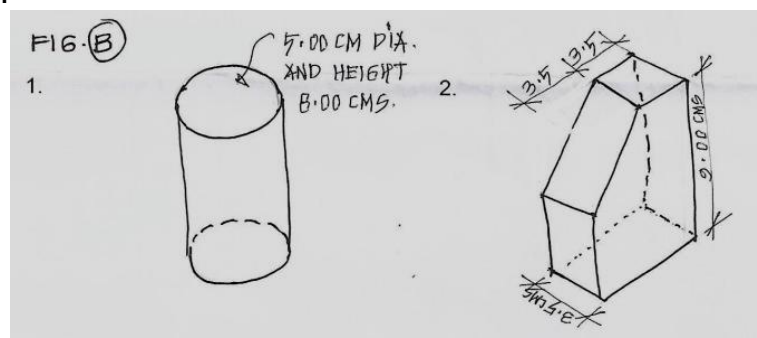
- Instructions:**
- 1) All questions are compulsory.
 - 2) Retain all construction lines.
 - 3) Figures to the right indicate full marks.
 - 4) Five marks are reserved for neatness and good drafting.

Q.1 A plane cuts the object as shown in Fig. A at PP¹. Draw plan and sectional elevations, (front, side) of the cut object (scale -1:1). **25**

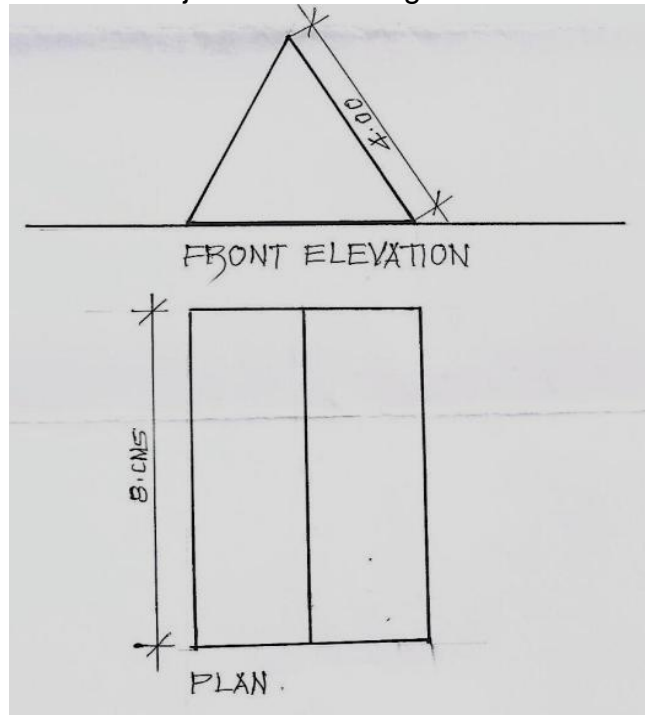


Q.2 Draw true cut portion or development of surface of cut object from Q. No. 1 of Fig. A. (Scale -1:1). **10**

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

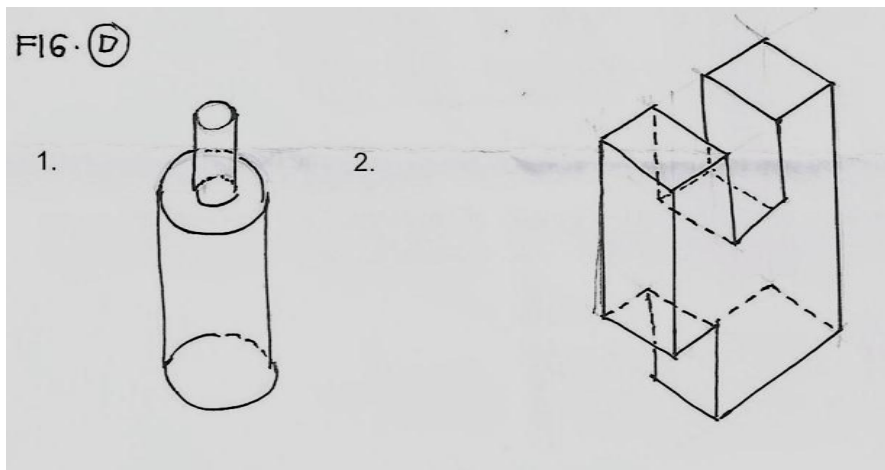


Q.4 Draw isometric view of the object shown in Fig. C.



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

05



All dimension are in cms only.

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Set P

B. Architecture (Semester - VI) (Old) (CGPA) Examination Dec-2019
SUSTAINABLE BUILDING MATERIALS

Day & Date: Monday, 09-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 50

- Instructions:** 1) All questions are compulsory.
2) Make suitable assumptions wherever necessary.
3) Figures to the right indicate full marks.

- Q.1 a) Write short note on any three. 15**
- 1) Ecological footprint
 - 2) Explain advantages and disadvantages of wood construction.
 - 3) Embodied energy
 - 4) Upcycling and down cycling
- b) Give any 5 examples of natural and 5 examples of factory manufactured building materials. 05**
- Q.2 Name Criteria for sustainable material selection. 08**
- Q.3 a) Explain ways of reusing building materials. 06**
- b) Write any one of the following. 06**
- 1) Explain Life cycle analysis in detail.
 - 2) Name the forms of energy is used at every stage in the manufacturing process of cement.
- Q.4 Which of the following is more sustainable in context of Solapur? Give reasons in comparisons. Write any one. 10**
- 1) Lime plaster or Ceramic tiles cladding
 - 2) GI pipes or clay pipes

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Set **P**

B. Architecture (Semester – VI) (Old) (CGPA) Examination Nov/Dec-2019
URBAN PLANNING

Day & Date: Friday, 13-12-2019
Time: 10:00 AM To 01:00 PM

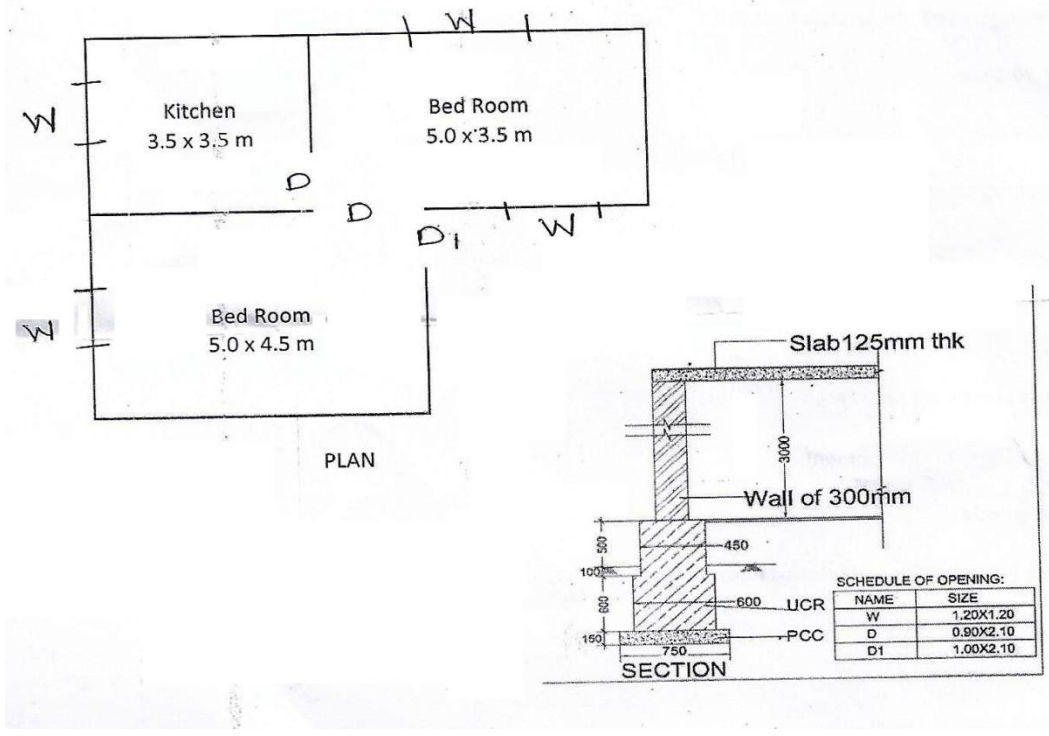
Max. Marks: 70

Instructions: 1) Q. No. 1 & Q. No. 2 are compulsory.
2) Solve any four questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.
4) Make suitable assumptions wherever necessary and mention in your Answer book

- Q.1 Fill in the blanks. 07**
- 1) Chandigarh city was planned by eminent town planner _____.
 - 2) _____ Stands for floor area ratio.
 - 3) C.A. Doxiadies advocated the theory of _____.
 - 4) Gandhinagar is situated on the bank of _____.
 - 5) The ratio of height to width of road will be _____ in case of 45 degree air plane under height zoning.
 - 6) _____ Stands for housing an urban development corporation.
 - 7) The population per unit area is defined as _____ of population.
- Q.2 Write short note. (Any Three) 15**
- 1) Satellite city
 - 2) Vertical growth
 - 3) Grid iron street pattern
 - 4) Le-Courbsier
- Q.3 Explain the types zoning and uses of different types of zoning. 12**
- Q.4 Write note on different types of traffic junction with help of sketches. 12**
- Q.5 Explain concept of Survey before Plan by urban planner Petric Geddes. 12**
- Q.6 Write a note on landuse planning and its importance. 12**
- Q.7 Write a note on causes of slum and its effect on town life and how can their condition be improved. 12**

Q.5 Work out the quantity of internal plaster for a room size 6.3×5.1 m (inside dimensions) having floor height up to ceiling is 3.0 m. Schedule of opening is as mention below. **10**

- D1 1.10 m \times 2.10 m
- W1 1.80 m \times 1.50 m



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**B. Architecture (Semester –VII) (New) (CBCS) Examination Dec-2019
PROFESSIONAL PRACTICE-I**

Day & Date: Saturday, 07-12-2019
Time:02:30 PM To 05:30 PM

Max. Marks: 70

Instructions: 1) All questions are compulsory.
2) Figures to the right indicates full marks.

Q.1 Fill in the blanks by choosing correct alternatives given below. 07

- 1) COA stands for _____.
- 2) _____ is an offer made by one party to another for execution of specified work at a specified cost.
- 3) IIA stands for _____.
- 4) The contractor is asked to deposit an amount equal to _____ of the estimated cost towards security deposit.
- 5) In Demolition Tender, the _____ and not the lowest tender should be approved.
- 6) _____ is an agreement enforceable by law in writing.
- 7) Indian Contract act was enacted in the year _____.

Q.2 Write short notes on (any three) 15

- 1) Earnest Money Deposit
- 2) Structure of an Architect's Office
- 3) Advantages of working in a well established Architect's firm
- 4) Quotation and Tender
- 5) Contract

Q.2 Answer the following (any four) 48

- 1) Explain in detail the schedule of services offered by an Architect towards clients Project.
- 2) Differentiate between Item Rate and Lump Sum Contract.
- 3) Explain the Code of Conduct for Architects as suggested by Council Of Architecture.(COA)
- 4) Write in brief contents of Tender document.
- 5) Explain in brief role of an architect in the process of Tender.

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B. Architecture (Semester - VII) (New) (CBCS) Examination Dec-2019
THEORY OF STRUCTURE- VII

Day & Date: Tuesday, 10-12-2019
Time: 02:30 PM To 05:30 PM

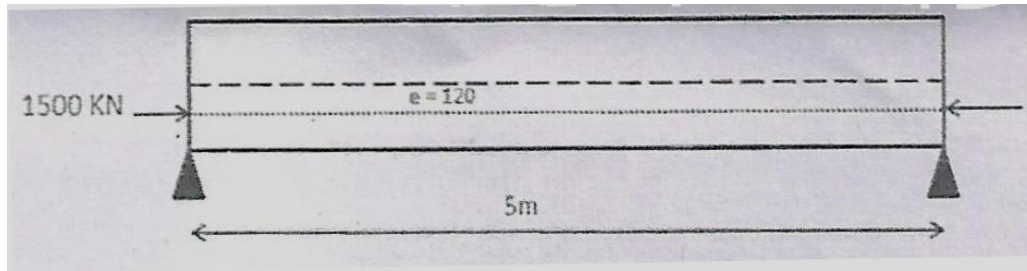
Max. Marks: 70

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

- Q.1 Choose the correct alternatives from the questions and rewrite the sentence. 08**
- 1) Stresses developed in the member at the time of transportation or erections are known as _____.
a) Handling stresses b) Shear stresses
c) Tensile stresses d) None
 - 2) Waffle slabs are also known as _____.
a) Grid slab b) Flat slab
c) Cantilever slab d) None
 - 3) The thickened portion of the slab around the column is called _____.
a) Drop b) Column head
c) Capital d) None
 - 4) Minimum _____ number of bars are used in circular piles.
a) 4 b) 10
c) 6 d) None
- Q.2 a) Write a note on flat slab with sketches. 03**
b) Write a note on Raft foundation with sketches. 03
- Q.3 a) Design a circular water tank of capacity 5,00,000 liters with flexible connection at base. The tank is rest on firm level ground. The tank is open at top with free 200mm board. 14**
- Q.4 a) Explain in detail "Gantries and Cranes" 07**
b) Write design steps for under reamed pile foundation. 07
- Q.5 Write short notes on:**
- a) Post-tensioning and pre-tensioning system 07
 - b) Portal frame and rigid frames 07
- Q.6 a) Explain in detail the design concept for earthquake proof construction. 07**
b) Explain the structural behavior of waffle slab and shells. 07

- Q.7 Calculate the stresses at top & bottom fibers for beam as shown in figure. A prestressing force of 1500KN applied at $e=120$ mm. The beam loaded 40KN/m. Size of the beam is 450mm x 750mm

14



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**B. Architecture (Semester-VII) (New) (CBCS) Examination Dec-2019
ESTIMATING SPECIFICATION & COSTING- II**

Day & Date: Thursday, 12-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Solve any four of following 08

- 1) Security deposit is _____ of total cost of Tender.
 - a) 2.00%
 - b) 1.00%
 - c) 5.00%
 - d) None of above
- 2) The rate of item of work depends on _____.
 - a) Detail Specification
 - b) Workmanship Quality
 - c) Quantity of Item
 - d) All of above
- 3) _____ Cum concrete 1:2:4 proportion work complete per mason per day.
 - a) 3.00
 - b) 4.50
 - c) 5.00
 - d) None of above
- 4) Earnest money deposit is refunded after _____ days.
 - a) 30
 - b) 60
 - c) 90
 - d) None of above
- 5) _____ Cum brick work complete in plinth work done per mason per day.
 - a) 1.25
 - b) 2.50
 - c) 3.00
 - d) None of above

Q.2 Distinguish between Schedule "A" and Schedule "B". 12

OR

Q.2 Short Note on 12

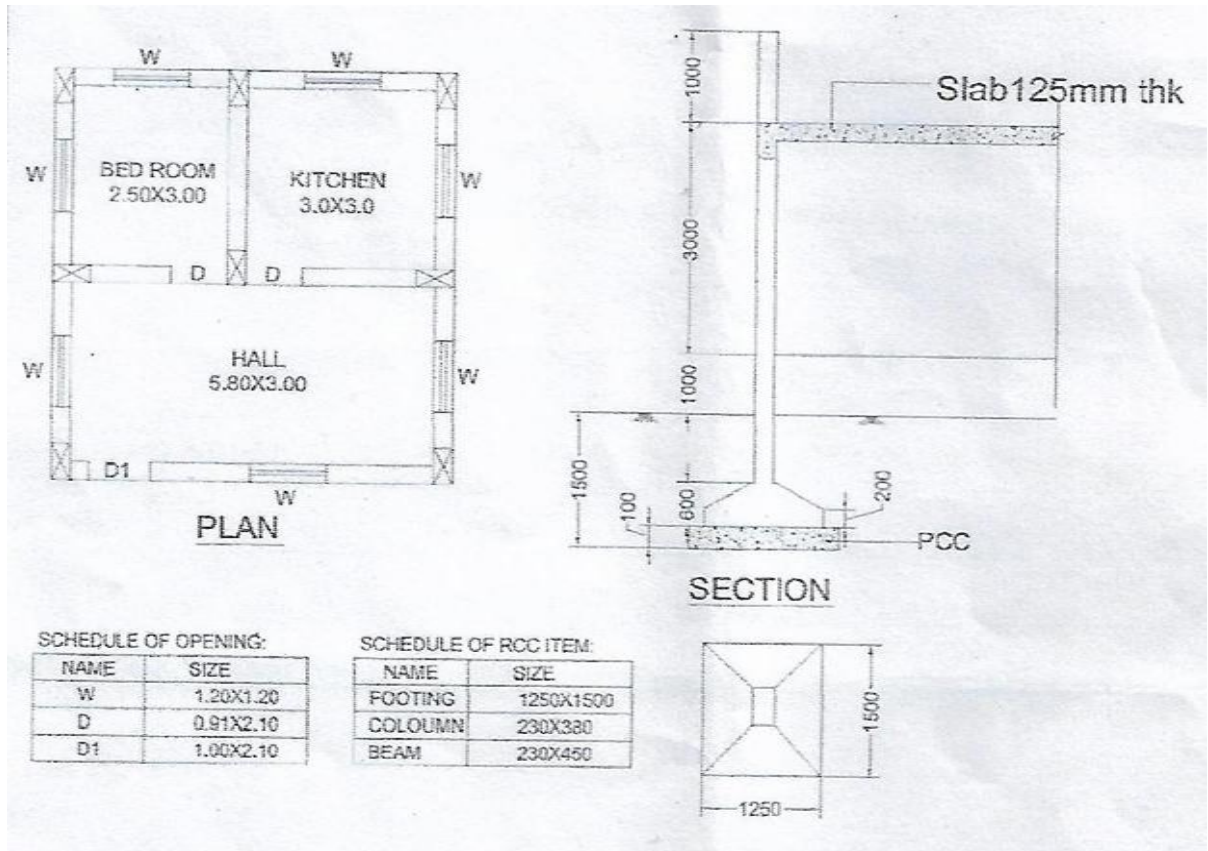
- a) Item Rate Contract
- b) Lumpsum Contract

Q.3 Calculate quantity of any five following item of work & enter the same in standard format of Measurement Sheet with brief description of item. (Refer fig 1) 30

- a) Excavation for foundation
- b) Brick masonry work upto Plinth
- c) RCC Beam
- d) RCC Slab
- e) Sand Faced Plaster in C.M. 1:5
- f) Internal Flooring
- g) RCC Footing

Q.4 Write in detail specifications on workmanship (any Two)

- a) M 20 Concreting work
- b) Random Rubble Stone Masonary work
- c) Internal plastering work
- d) IPS flooring work



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Set **P**

**B. Architecture (Semester – VII) (Old) (CGPA) Examination Dec-2019
PROFESSIONAL PRACTICE-I**

Day & Date: Saturday,07-12-2019
Time:02:30 PM To 05:30 PM

Max. Marks: 70

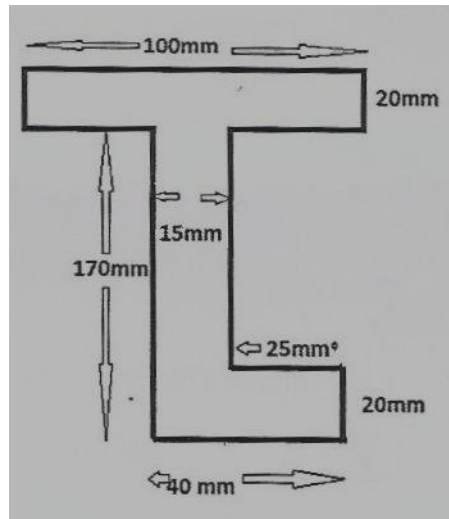
Instructions: 1) Figures to the right indicate full marks.
2) All Questions are compulsory.

- Q.1 Fill in the blanks. 07**
- 1) The duration of liability of an architect expires after _____ years from the date of completion.
 - 2) The contractor is asked to deposit an amount equal to _____ of the estimated cost towards security deposit.
 - 3) COA stands for _____.
 - 4) Architects act was enacted in the years _____.
 - 5) _____ is an offer made by one party to another for execution of specified work at a specified cost.
 - 6) Owner shall furnish _____ sets of drawings and specifications for free.
 - 7) Contract act was enacted in the year _____.
- Q.2 Write short notes. (Any Three) 15**
- 1) Earnest Money Deposit
 - 2) Services rendered by an architect
 - 3) Demolition Tender
 - 4) Architectural copyright
 - 5) Contract
- Q.3 Answer any four of the following questions. 48**
- 1) Explain which are the various type of Architects firms with their advantages and disadvantages.
 - 2) Write in brief contents of Tender document.
 - 3) Explain the Code of Conduct for architects as suggested by Council Of Architecture-(COA).
 - 4) Draft a typical format of Tender notice.
 - 5) Explain in brief role of an architect in resolving disputes arising out of building contract.
 - 6) Distinguish between item rate contract and lump sum contract.

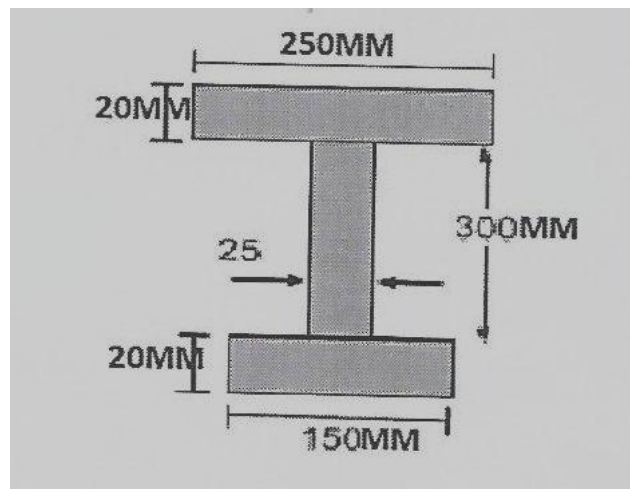
Q.7 Write a note on :

- | | |
|--|-----------|
| a) Folded plates | 04 |
| b) Space Frames | 04 |
| c) Waffle slab and hollow core slab | 06 |

- Q.5 a)** In a tensile test, a piece of 35mm diameter, 300mm length stretched to 0.108mm under pull of 70KN. If modulus of rigidity is $0.832 \times 10^5 \text{ N/mm}^2$. Find E, K and Poisson's ratio. **06**
- b)** Calculate Centroid of following section. **08**



- Q.6** A simply supported beam is having 8m Span. It is carrying UDL of 20 KN/M over its entire span. It is also subjected to Point loads of 25KN, 45KN and 75KN at 2m, 4m & 6m respectively. Draw SFD and BMD. **14**
- Q.7** Calculate Moment of Inertia for following section. **14**



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Set **P**

**B. Architecture (Semester – VII) (Old) (CGPA) Examination Nov/Dec-2019
ESTIMATING SPECIFICATION & COSTING – II**

Day & Date: Thursday, 12-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

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

Q.1 Solve any four of following.**08**

- 1) Security deposit is _____ of total cost of Tender.
 - a) 2.00%
 - b) 1.00%
 - c) 5.00%
 - d) None of above
- 2) The rate of item of work depends on _____.
 - a) Detail Specification
 - b) Workmanship Quality
 - c) Quantity of Item
 - d) All of above
- 3) _____ cum concrete 1:2:4 proportion work complete per mason per day.
 - a) 3.00
 - b) 4.50
 - c) 5.00
 - d) None of above
- 4) Earnest money deposit is refunded after _____ days.
 - a) 30
 - b) 60
 - c) 90
 - d) None of above
- 5) _____ cum brick work complete in plinth work done per mason per day.
 - a) 1.25
 - b) 2.50
 - c) 3.00
 - d) None of above

Q.2 Distinguish between Schedule "A" and Schedule "B".**12****OR****Short Note.**

- a) Item Rate contract
- b) Lumpsum contract

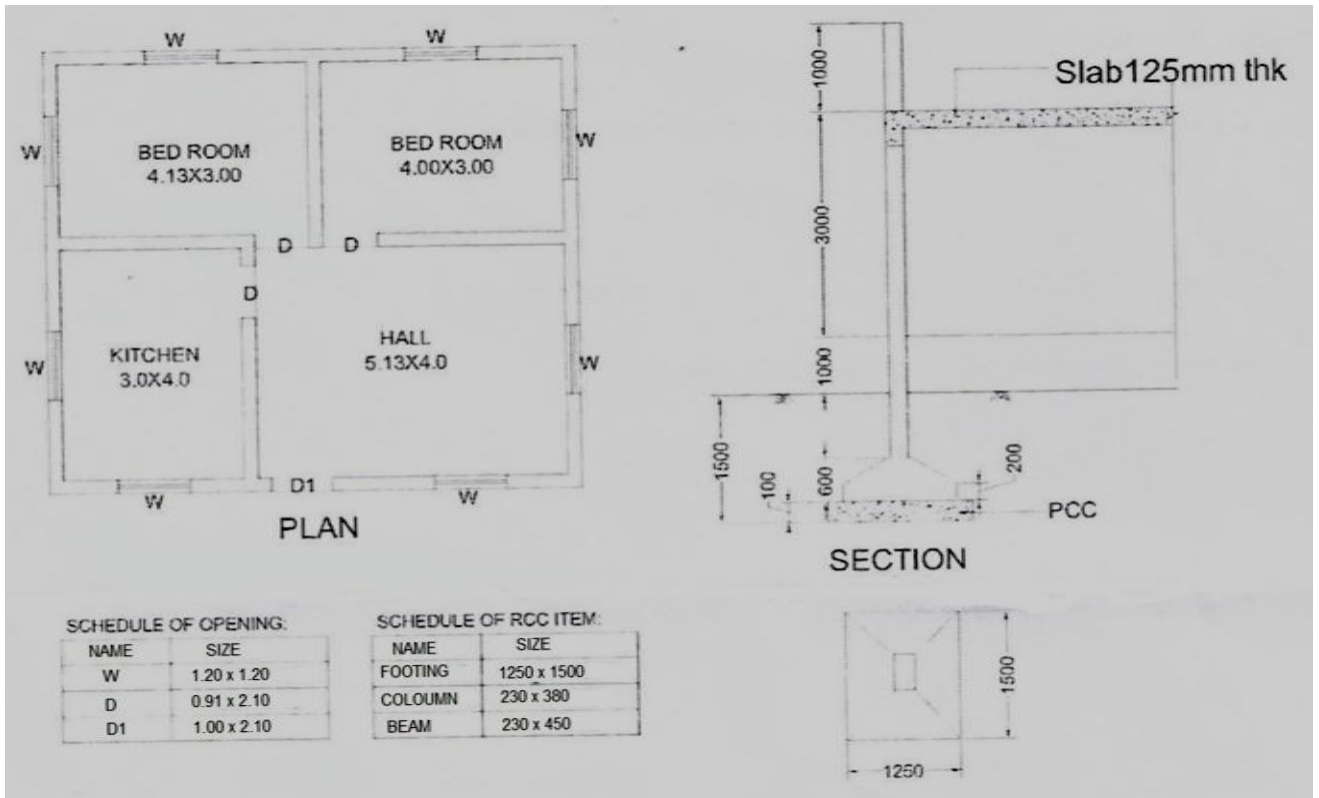
Q.3 Calculate quantity of any five following item of work & enter the same in standard format of Measurement Sheet with brief description of item.**30**

(Refer fig 1)

- a) Excavation for foundation
- b) Brick masonry work upto Plinth
- c) RCC Beam
- d) RCC Slab
- e) External Sand Faced Plaster in C.M. 1:5
- f) Internal Flooring
- g) RCC Footing

Q.4 Write in detail specifications on workmanship (Any Two)**20**

- a) M 20 Concreting work for Slab
- b) 1st Class Brick Masonary work
- c) 12 mm thick plastering work
- d) 30 mm thick Kotah stone flooring work



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B. Architecture (Semester – VIII) (CGPA) Examination Dec-2019
PROFESSIONAL PRACTICE – II

Day & Date: Friday, 06-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Fill in the blanks. 07

- 1) _____ is the final decision given by the arbitral tribunal after investigation of the case submitted for adjudication.
- 2) _____ is the person to whom the dispute and differences are referred for necessary adjudication.
- 3) In limited competition, approximately _____ architects are invited to participate.
- 4) The land for the beneficial enjoyment of which the right of easement exists is called the _____.
- 5) The land acquisition act was enacted in _____.
- 6) FSI is the ratio of _____.
- 7) The land acquired under land acquisition act should be _____ from all encumbrance.

Q.2 Write short notes. (Any Three) 15

- a) Continuous and discontinuous easement
- b) Arbitral tribunal
- c) Limited competition
- d) Principles of land acquisition act
- e) Necessity of bye-laws

Q.3 Answer the following questions. (Any Four) 48

- a) Write in brief the procedure involved for the acquisition of land under the act.
- b) What is Arbitration? Explain the advantages and disadvantages of settling the disputes by this method.
- c) Explain the role of Council Of Architecture (COA) In Architectural Competitions.
- d) Explain the term Easement and its characteristics.
- e) Write in brief, municipal bye laws regulated for a residential building in Solapur.
- f) Write the safety measures undertaken by the contractor for the labors in the construction industry.

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B. Architecture (Semester – VIII) (CGPA) Examination Dec-2019
PROJECT MANAGEMENT

Day & Date: Monday, 09-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

Instructions: 1) Q. No. 1 and Q. No. 2 are compulsory. From remaining questions solve Any four.

- 2) Figures to the right indicate full marks.
3) Assume suitable data if necessary.

Q.1 Fill in the blanks. 07

- 1) PERT stands for Project Evaluation and _____ Technique.
- 2) An activity is represented by an _____.
- 3) A _____ activity in the network neither requires time nor resources.
- 4) Cost, Quality _____ are main components of Project Triangle.
- 5) Horizontal Movement of Material is Called as _____.
- 6) ERP stands for Enterprise Resource _____.
- 7) _____ act is for accidental policy for Workmen.

Q.2 Attempt any three. 15

- 1) Local and Local Materials
- 2) Role of Project Manager
- 3) Critical Path Method
- 4) Lead and Lift

Q.3 a) Explain in detail Work Breakdown Structure with example. 10
b) Explain Dummy Activity. 02

Q.4 a) Explain Workmen Compensation Act in detail. 06
b) Explain Minimum Wages Act. 06

Q.5 Write a note on Quality Control Tools with neat diagram. 12

Q.6 Explain in detail Objectives, Functions and different aspects of Project Management. 12

Q.7 Following table gives the data about durations & costs. 12

| Activity | Normal Durations (Weeks) | Normal Costs (Rs.) | Crash Duration (Weeks) | Crash Costs (Rs.) |
|----------|--------------------------|--------------------|------------------------|-------------------|
| 1 - 2 | 4 | 4000 | 2 | 12000 |
| 2 - 3 | 5 | 3000 | 2 | 7500 |
| 2 - 4 | 7 | 3600 | 5 | 6000 |
| 3 - 4 | 4 | 5000 | 2 | 10000 |

- a) Find out total project costs for above table.
- b) Carry out stage by stage compression of network for above table.
- c) Find optimal duration & minimum cost for above table.

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**B. Architecture (Semester –II) (CBCS) Examination Nov/Dec-2019
HISTORY OF ARCHITECTURE – II**

Day & Date: Wednesday, 11-12-2019
Time: 10:00 AM To 01:00 PM

Max. Marks: 70

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

- Q.1 Fill in the blanks. 07**
- Lad Khan Temple and Durga Temple at Aihole belong to _____ Dynasty.
 - Arjuna Ratha and _____ ratha stand on the same platform.
 - Seating portion in the Greek amphi-theatre is called as _____.
 - Frieze in Greek entablature consists of _____ and *Metopes*.
 - _____ was the hall of justice in Rome.
 - Another name for Mahabalipuram is _____.
 - The central hall of the church divided into nave & _____.
- Q.2 Write short notes. (Any Three) 15**
- Vihara no.1 at Ajanta
 - Composite order
 - Tranjan's column
 - Greek Agora
- Q.3 Explain in details with neat and proportionate sketches Any four. 48**
- Explain with neat sketches Early Basilica Church of St. Peters Rome.
 - With essential sketches explain the concept of optical corrections in Greek temple of Parthenon.
 - Explain with detailed sketch Durga Temple at Aihole.
 - What is meant by rock cut architecture? Sketch and explain chaitya hall at Karle ?
 - Draw plan and elevations of Roman Colosseum and explain the same in detail.

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**B. Architecture (Semester – III) (CBCS) Examination Dec-2019
BUILDING SERVICES –I**

Day & Date: Saturday, 07-12-2019
Time: 02:30 PM To 05:30 PM

Max. Marks: 70

- Instructions:** 1) Make suitable assumptions wherever necessary and mention in your answer book.
2) Figures to right indicate full marks.
3) Question No.1 and 2 are compulsory solve any 4 from the remaining.

- Q.1 Fill in the blanks. 07**
- 1) The sewer which carries domestic sewage and storm water is known as _____.
 - 2) The sewers which transport the sewage to the point of treatment is called _____.
 - 3) Stone ware pipes are generally not used for main sewers as they are _____.
 - 4) The most suitable cross section of a section of the sewer to carry the combined flow is _____.
 - 5) The liquid waste of kitchen, bathroom and washbasin is known _____.
 - 6) The sewer line collecting the sewage from two or more main sewers is known as _____ sewers.
 - 7) The pipe installed for the purpose of ventilation is called _____.
- Q.2 Write short notes on any Three. 15**
- 1) Urinals
 - 2) Bath tub
 - 3) Oil and grease trap
 - 4) Smoke test
- Q.3 Write short note on various materials used in sewer construction. 12**
- Q.4 Discuss two types of chambers in drainage system. Explain their function with neat sketch. 12**
- Q.5 Discuss the comparative merits and demerits of separate systems and combined system of sewage. 12**
- Q.6 Name the various types of sanitary fitting used in house drainage. Describe any two with the help of neat sketch. 12**
- Q.7 Explain with neat sketch systems of plumbing in residential building. 12**