SLR-JC-1

Seat No.	

Set P

B. Architecture (Semester - I) (New) (CBCS) Examination: March/April - 2024
Human Settlement Planning (21AR1-04)

Day & Date: Saturday, 25-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Choose the correct option. **07**

1) The Egyptian civilization flourished on the banks of river _____.
a) Danube b) Ural
c) Tigris d) Nile

2) Arthashatra, a treatise on Indian treatise on politics, economics, military strategy, the function of the state, and social organization was written by _____.
a) Aryabhatta b) Chanakya
c) Patanjali d) Brahmagupta

3) Rakhigarhi was a _____ settlement.
a) Indus b) Tibetan
c) Mesopotamian d) Chalukyan

4) The city of _____ is a good example of Roman military architecture.
a) Rome b) London
c) Timgad d) Kamak

5) _____ is a monolithic temple.
a) Parthenon b) Kailasnath, Ellora
c) Temple of Khons, Karnak d) Shore temple, Mahabalipuram

6) _____ introduced the garden city movement.
a) Garnier b) Ebenezer Howard
c) Jane Jacobs d) Patrick Geddes

7) Fatehpur Sikri was built by _____.
a) Razia Sultana b) Jehangir
c) Shahajahan d) Akbar

Q.2 Write short notes (any 3). **15**

a) Grid iron pattern of settlement
b) Cave settlements
c) Vedic village
d) City of Athens

Q.3 Write in brief. (any 4) **48**

a) Why did earliest civilizations develop along the rivers?
b) Differentiate between rural and urban settlements.
c) Discuss the ancient city of Pataliputra.
d) What is meant by Industrial revolution? Discuss its impact on society.
e) Explain the significance of River Nile in Egyptian civilization

SLR-JC-2

Seat No.		Set	P

B. Architecture (Semester – I) (New) (CBCS) Examination: March/April - 2024
Theory of Structure – I (21AR1-03)

Day & Date: Tuesday, 28-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Assume suitable data if necessary.

Q.1 Choose the Correct Option. **07**

1) The advantages of framed structures are _____.
a) High rise construction b) Speedy construction
c) More flexibility d) All of the above

2) The self weight of material is included in _____.
a) Dead load b) Live load
c) Wind load d) Snow load

3) The system of forces which passes through a single plane is _____.
a) Coplanar b) Non-Coplanar
c) Concurrent d) Non-Concurrent

4) A beam which rests on one fixed support and other free is _____.
a) Cantilever beam b) Simply supported beam
c) Fixed beam d) Continuous beam

5) The law of parallelogram is applicable when _____ concurrent forces are present in a force system.
a) 3 b) 2
c) 1 d) 4

6) A support which has no reaction, no moment is _____.
a) Hinged support b) Fixed support
c) Roller support d) Free support

7) The centroid of a triangle lies at point of intersection of _____.
a) Diagonals b) Meridians
c) Sides d) All of the above

Q.2 Write Short Notes. (Any Three) **15**

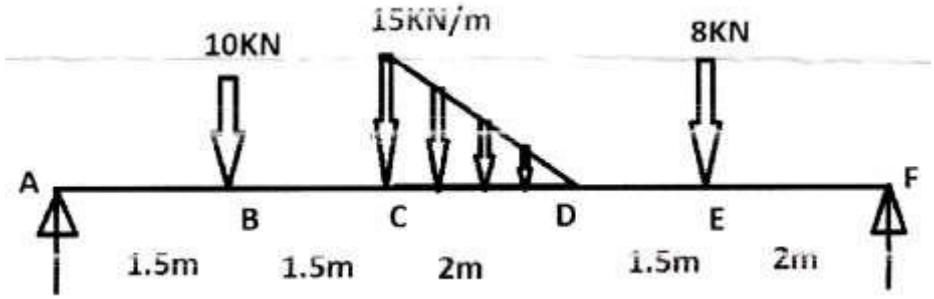
a) Write a note on Varignon's Theorem.
b) Write a note on types of Supports.
c) Differentiate between Load Bearing Structure and Framed Structure.
d) State and explain Polygonal Law of Forces.

Q.3 Attempt the following Question. (Any Four) **48**

a) Two forces of magnitude of 140 N and 360 N are acting at 40° to each other. Determine the resultant in magnitude and direction if -
1) forces have same sense
2) forces have different sense

b) Five forces of 90,130,180, 230 and 300 N are acting at angle of 50, 110, 230, 290 and 330 in anti-clockwise direction from x axis at a point, all away from the point. Find the resultant force in magnitude and direction.

c) A horizontal beam is loaded as shown in figure below. Find reactions at supports.



d) A sphere weighing 450 N is supported by two planes. One vertical (plane A) and another (plane B) is inclined at 50° to the horizontal. Calculate reactions at the planes.

e) 1) Write a note on loads acting on a structure.
2) Write a note on system of forces.

SLR-JC-3

Seat No.	

Set P

B. Architecture (Semester - I) (New) (CBCS)
Examination: March/April-2024
Building Construction and Material-I (21AR1-02)

Day & Date: Thursday, 30-05-2024 Max. Marks: 100
Time: 03:00 PM To 07:00 PM

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

Q.1 Choose the correct answer and fill in the blanks. **05**

1) A cantilevered part above the window is known as _____.
   a) Lintel b) Beam
   c) Sill d) Chajja

2) A continuous row of bricks either header or stretcher is known as _____.
   a) Flemish bond b) English bond
   c) header bond d) stretcher bond

3) In stone wall construction where all stones are dressed or cut to a uniform shape and size with plain surface is known as _____.
   a) Random Rubble masonry b) Ashlar masonry
   c) Brick masonry d) none of the above

4) Standard size of stabilised Brick is _____.
   a) 75mm X 100mm x 230 mm b) 50 mm X 100mm x 230 mm
   c) 100 mm X 230mm x 450mm d) 100mm x 300mm x 600mm

5) The lowest artificially prepared parts of the structure which are in direct contact with the ground and which transmit the loads of the structures to the ground are known as _____.
   a) Plinth b) Foundation
   c) Bricks wall d) Beam

Q.2 Draw and label. (ANY 2) **30**

a) Draw plan, elevation and isometric view of header bond, stretcher bond1 brick thick wall, (scale 1:10)
b) Draw plan, elevation, section and isometric view of English bond 1 brick thick wall. (scale 1:10)
c) Draw any 3 types of foundation used in building construction, (scale 1:10)

Q.3 With neat sketches write short notes on. **25**

a) Closer, queen closer, king closer.
b) Classification of stone masonry.
c) Types of joints in stone masonry.
d) Compare English and Flemish bond.
e) Retaining walls.

Q.4 Choose the correct answer and fill in the blanks. **05**

1) Black cotton soil is unsuitable for foundations because its _____.
   a) Bearing capacity is low b) Permeability is uncertain
   c) Particles are cohesive d) None of above

2) The Raw material for manufacturing brick is _____.
   a) cement b) Mud
   c) Lime d) Sand

3) The Process of taking out stones from natural rock beds is known as _____.
   a) Quarrying b) Dressing
   c) Pointing d) Extracting

4) The portion of a brick cut across the width is called _____.
   a) Closer b) Half brick
   c) Bed d) Bat

5) Structure of stone or brick built against a wall to strengthen or support it is known as.
   a) Column b) Buttress
   c) Retaining wall d) L-junction

Q.5 Answer in Detail (Any 2) **20**

a) Explain bearing capacity of soil and angle of repose.
b) What is meant by dressing of stone? Sketch various varieties of dressing.
c) Enumerate the qualities of good bricks and uses of bricks.

Q.6 Write short notes on. **15**

a) Uses of stone.
b) Types of soil.
c) Uses of bricks.

SLR-JC-4

Seat No.		Set	P

B. Architecture (Semester - II) (New) (CBCS) Examination: March/April-2024
Building Construction and Material – II (21AR2-02)

Day & Date: Friday, 24-05-2024 Max. Marks: 100
Time: 10:00 AM To 02:00 PM

Instructions: 1) Write question number correctly.
2) Draw neat sketches wherever necessary.
3) Q.no-2 has to be compulsorily drafted on sheets provided by the University.
4) Make suitable assumptions wherever necessary and mention it.
5) Figures to the right indicate full marks.

Q.1 Choose the correct Answer. **05**

1) _____ is the irregular triangular space formed between the crown and the skewback.
a) Spandril b) Skewback
c) Vouissors d) Piers

2) A _____ is a horizontal member which is placed across an opening to support the portion of the structure above it.
a) Arch b) Lintel
c) Door d) Window

3) The projecting part of the tread beyond the face of riser is known as _____.
a) Nosing b) Pitch
c) Riser d) Handrail

4) _____ are the wooden pieces which are placed horizontally on principal rafters to carry the common rafters.
a) Purlin b) Eaves board
c) Sheet d) Gutter

5) _____ is a vertical member which is employed to sub divide a window opening vertically.
a) Transom b) Mullion
c) Shutter d) Panel

Q.2 Draw and label. (Any 2) **30**

a) Draw plan, elevation and section of paneled door. Consider 1.2mtr wide opening and 2.1 meter in height.
b) Draw to appropriate scale different types of staircase as per shape (Min 5).
c) Draw to appropriate scale different types of roof as per shape (Min 5).

Q.3 With neat sketches wherever necessary write short notes on. **25**

a) Define-Tread, Riser, Baluster, Headroom, Landing.
b) Define- Principal Rafters, Common Rafters, Hip Rafter, Jack Rafter, Eaves.
c) Define- Crown, Piers, Vouissors, Arcade, Extrados.
d) Types of lintels based on material used for construction.
e) Define- Top Rail, Bottom Rail, Lock Rail, Holdfast, Frame.

Q.4 Choose the Correct Answer. **05**

1) When water is added in sufficient quantity, a chemical reaction takes place due to which quick lime cracks swells and falls into a powder. This process is known as _____.

a) Calcination b) Slaking
c) Setting d) Bulking

2) Hydraulic lime is also known as _____.

a) Slaked lime b) Fat lime
c) Water Lime d) White Lime

3) _____ is a paste prepared by adding required quantity of water to a mixture of binding material and aggregate.

a) Mortar b) Slurry
c) Plaster d) Paint

4) The proportion of lime and sand in lime mortar selected for plaster works should be _____.

a) 1:2 b) 1:4
c) 1:2:3 d) 1:5

5) The presence of moisture in sand increases the volume of sand. This phenomenon is known as the _____.

a) Bulking b) Slaking
c) Setting d) Curing

Q.5 Answer in detail. (Any 2) **20**

a) State the properties of good mortar.
b) Compare fat lime and hydraulic lime.
c) Briefly explain the tests carried out to ascertain the properties of sand.

Q.6 Write short notes on. **15**

a) Natural sources of sand
b) Uses of Mortar
c) Uses of lime

SLR-JC-5

Seat No.	

Set P

B. Architecture (Semester - II) (New) (CBCS) Examination: March/April-2024
History of Architecture- I (21AR2-04)

Day & Date: Monday, 27-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Write question number correctly.
2) Draw neat sketches whenever necessary.
3) Figures to the right indicate full marks.

Q.1 Choose the correct option. **07**

1) Great Granary and Great Bath are found in the citadel at _____.
a) Babylon b) Rome
c) Mohenjodaro d) Pataliputra

2) Palace at Persepolis was a fine example of _____ architectural style.
a) Egyptian b) West Asiatic
c) Buddhist d) Minaon

3) The gateway to a stupa is known as _____.
a) Pylon b) Torana
c) Gramadwara d) Archway

4) _____ were sculptures with body of a lion and head of a man in Egyptian architecture.
a) Centaur b) Mermaid
c) Mastaba d) Sphinx

5) Hypostyle halls were lighted through _____ windows.
a) Clerestory b) Sliding
c) Hinged d) Pivoted

6) The lion gate in the image is found at _____.

a) Palace of Tiryns b) Palace of Persepolis
c) Temple of Khons d) Palace at Knossos

7) Temple of Juno is an example of _____ architecture.
a) Minoan b) Mycenaean
c) Etruscan d) Sumerian

Q.2 Write Short Notes. (Any Three) **15**

a) Catal Huyuk
b) City of Pataliputra
c) Egyptian column
d) Mycenaean wall

Q.3 Answer in brief with detailed sketches. (Any Four) **48**

a) Explain with neat sketches the Pyramid of Cheops, Giza.
b) Enumerate the town planning principles of Indus Valley civilization. Elaborate the same with the city of Mohenjodaro as an example.
c) Describe the palace of King Minos at Knossos. Write a note on the architectural characters of Minoan architecture.
d) Explain with neat sketches Chaitya Hall at Karli.
e) Explain with neat sketches the Stone Henge at Wiltshire, England.

SLR-JC-6

Seat No.		Set	P

B. Architecture (Semester–II) (New) (CBCS) Examination: March/April-2024
Theory of Structure – II (21AR2-03)

Day & Date: Wednesday, 29-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) All questions are compulsory.
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 option. **07**

1) Poisson's ratio is defined as the ratio of _____.
a) Lateral strain to Linear strain
b) Linear strain to Lateral strain
c) Lateral stress to Linear stress
d) Linear stress to Lateral stress

2) The material which regains its shape and size after removal of loading is called as _____.
a) Plastic material b) Semi Plastic material
c) Elastic material d) Semi Elastic material

3) The moment of inertia for a rectangular cross-section b X d is _____.
a) $bd^2 / 6$ b) $bd^3 / 12$
c) $bd^3 / 16$ d) $bd^2 / 36$

4) A cantilever beam having span L subjected to UDL w throughout its length has maximum shear force of _____.
a) $w\,L^2$ b) $w\,L^2/2$
c) $w\,L$ d) $w\,L/2$

5) The variation of bending stress distribution across any section is _____.
a) Linear b) Parabolic
c) Cubic d) Hyperbolic

6) A region in a beam where bending moment changes is constant and no shear force is present is called region of _____.
a) Simple bending b) Contra shear
c) Complex bending d) Shear exchange

7) The density of concrete is _____KN/m^3.
a) 35 b) 78.5
c) 25 d) 33

Q.2 Write short notes on - (Any 3) **15**

a) Write a note on stress strain curve of mild steel.
b) Derive expression of moment of inertia of a hollow circular section.
c) Explain assumptions made in simple bending theory.
d) Enlist properties of concrete, steel, soil and brick.

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

a) A steel bar ABCD 4.8m long is loaded as shown in fig.1. Find stresses in each section and total elongation of bar. Take E = 210GPa. A1 = 1200mm^2, A2 = 2100mm^2, A3 = 1500mm^2

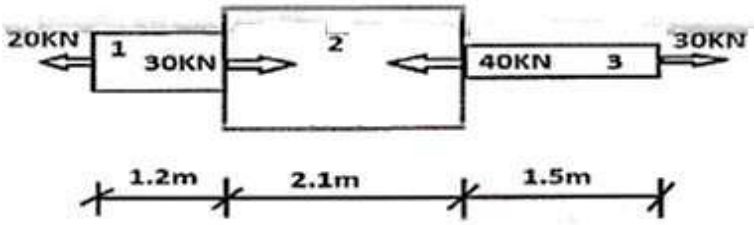


Figure-1

b) Draw SFD and BMD for an overhanging beam as shown in fig.2 below

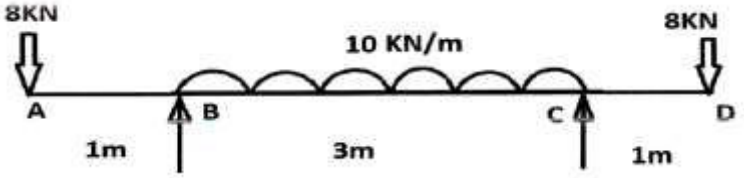


Figure-2

c) Calculate the moment of inertia of following section shown in fig.3

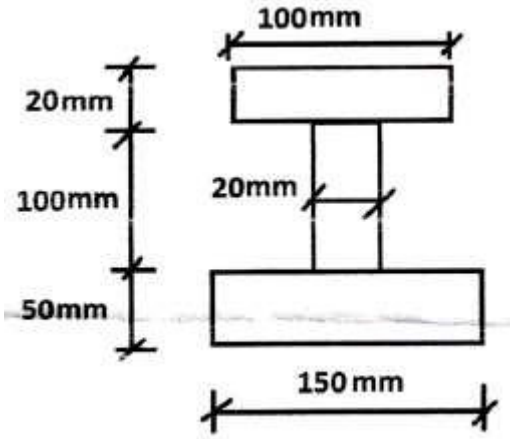


Figure-3

d) A rectangular beam 200mm wide and 400mm deep is subjected to maximum Shear force of 150 KN. Determine:

i) Average shear stress
ii) Maximum shear stress
iii) Shear stress at a distance of 80 mm above Neutral Axis

e) A rectangular beam of breadth 150 mm and depth 300 mm is simply supported over a span of 5 m. The beam is loaded with an uniformly distributed load of 8 kN/m over the entire span and a central point load of 15KN. Find the maximum bending stresses. Also show stress distribution diagram.

SLR-JC-7

Seat No.	

Set P

B. Architecture (Semester - II) (New) (CBCS) Examination: March/April-2024
Architectural Graphics and Drawing - II (21AR2-05)

Day & Date: Friday, 31-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

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

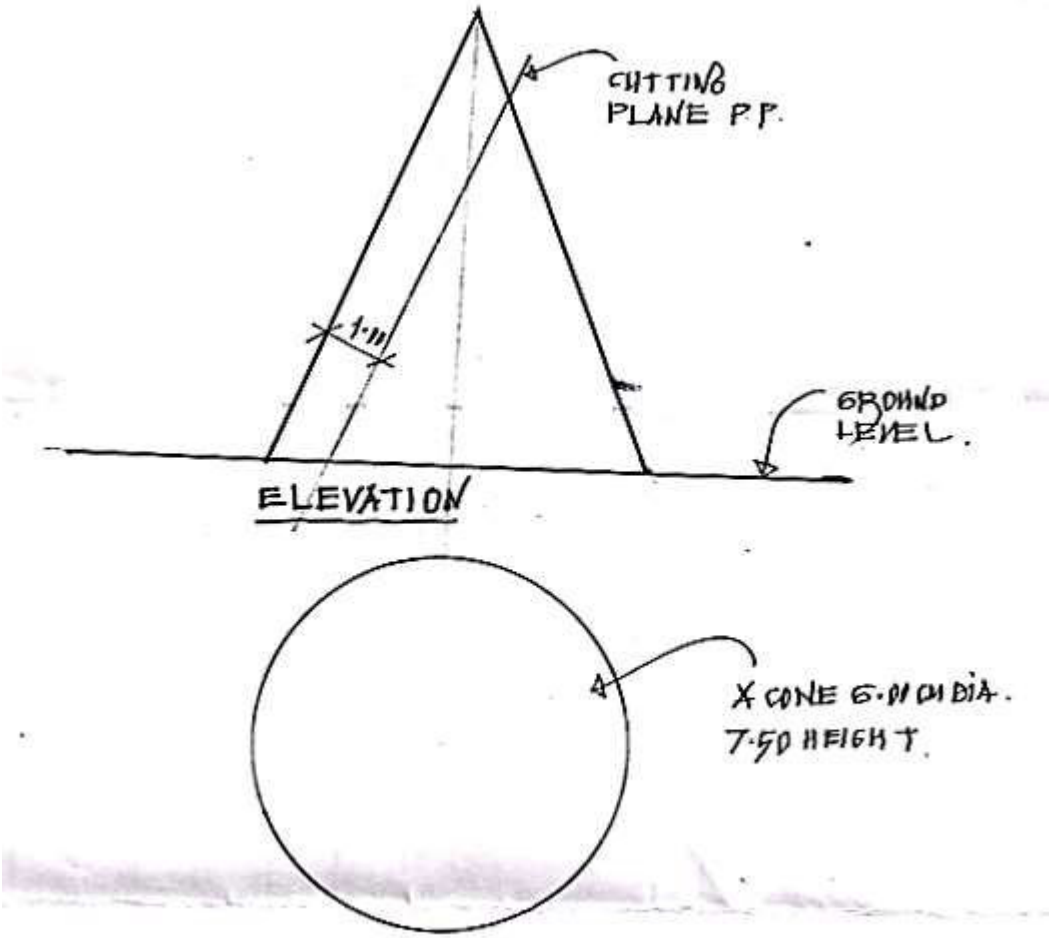
Q.2 Draw true cut portion or development of surface of cut object from Q. No. 1 of Fig. A. (Scale-1:1). **10**

Q.3 Draw the development of surfaces of the following objects in Fig. B -1 & 2 (Scale -1:1). **10**

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

Q.5 Mention the no. of surfaces of the following objects as shown in Fig. D. -1 & 2 **05**

Fig-A


CUTTING PLANE P.P.
1:1
GROUND LEVEL.
ELEVATION
X CONE 6.00 CM DIA.
7.50 HEIGHT.

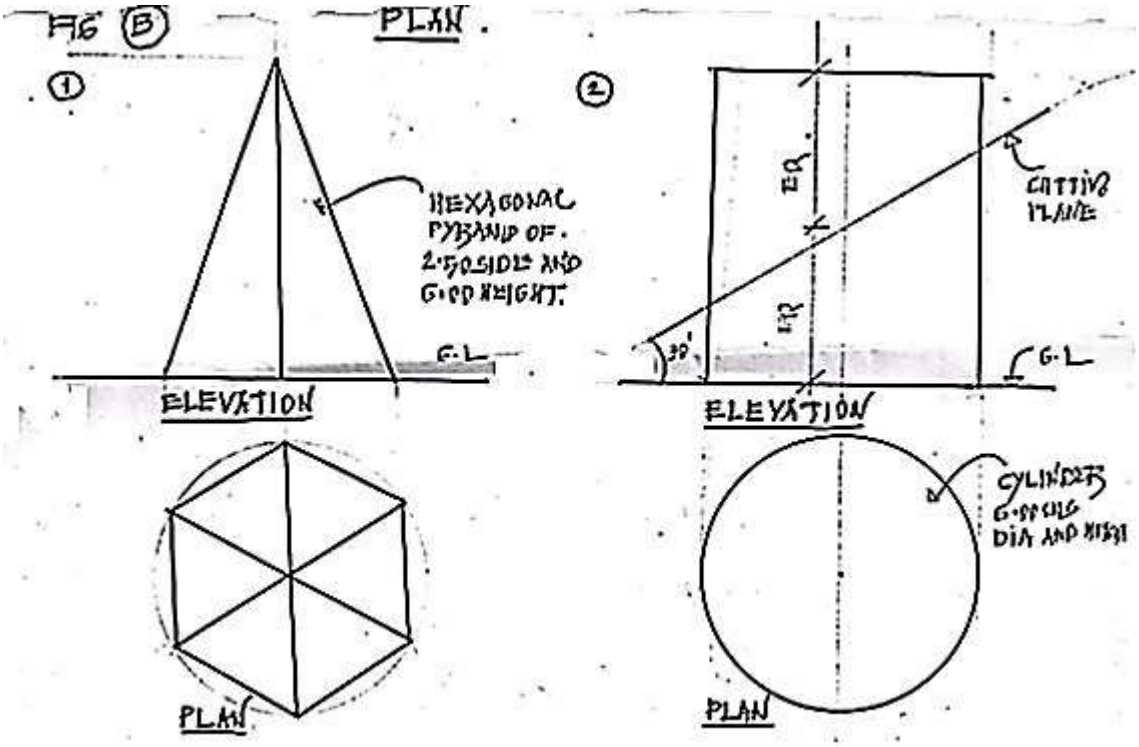


FIG (B)
PLAN.
①
HEXAGONAL PYRAMID OF. 2.50 SIDE AND 6.00 HEIGHT.
G.L
ELEVATION
PLAN
②
CUTTING PLANE
30°
G.L
ELEVATION
CYLINDER 6.00 CMS DIA AND HIGH
PLAN

Fig-C

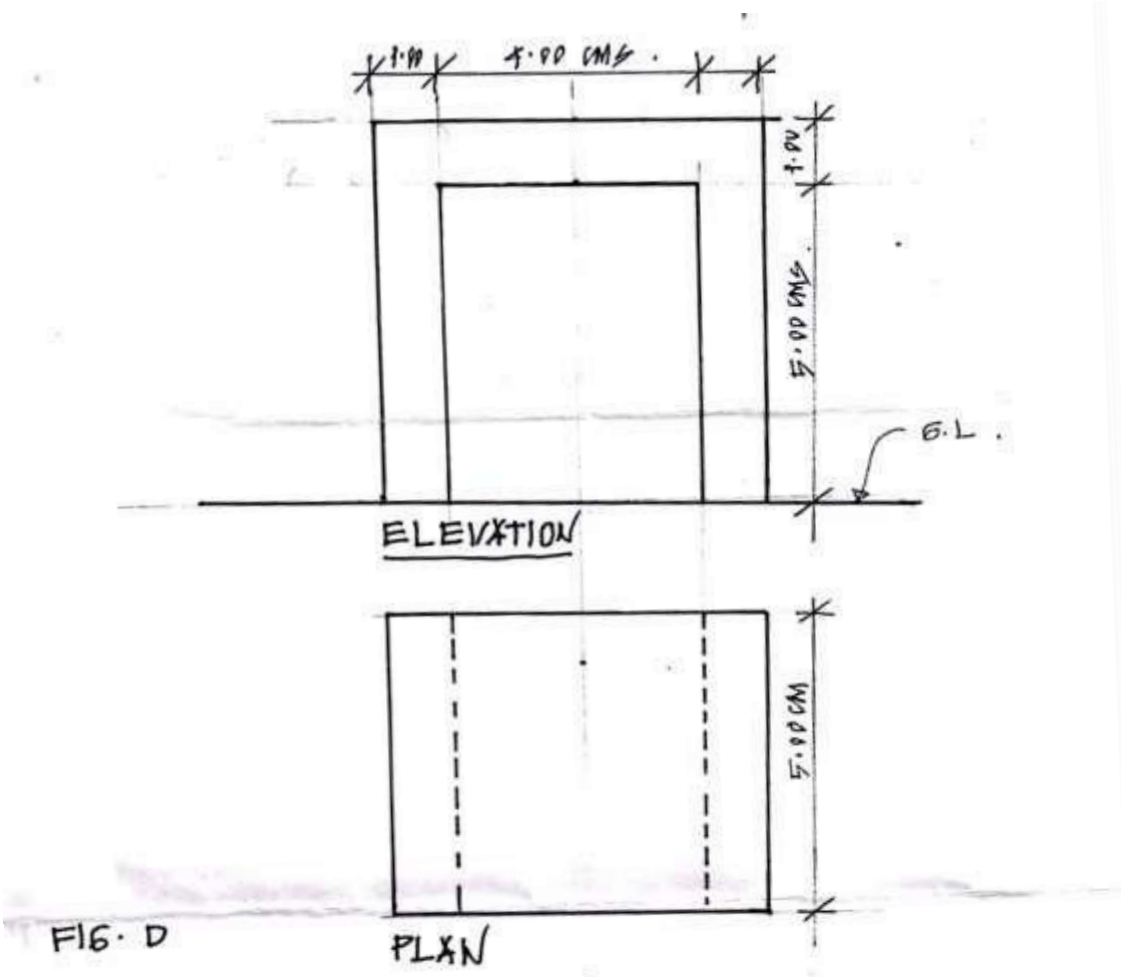
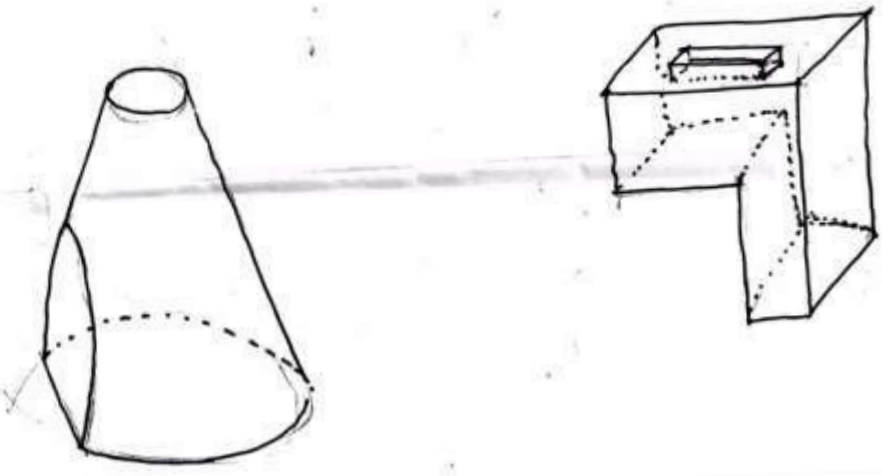


FIG. D

① ②



SLR-JC-8

Seat No.	

Set P

B. Architecture (Semester - III) (New)(CBCS) Examination: March/April -2024
Building Construction and Material- III (21AR3-02)

Day & Date: Monday, 20-05-2024 Max. Marks: 100
Time: 02:00 PM To 06:00 PM

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

Q.1 Choose the correct Answer. **05**

1) The vertical portion between each tread on the stair is called: _____.
a) Going b) Nosing
c) Winder d) Riser

2) In a king-post truss _____ prevent the purling from tilting.
a) Pole plates b) Purlins
c) Cleats d) Rafters

3) _____ flooring is just similar to Moorum flooring except that mud is used in place of Moorum.
a) Mud b) Murum
c) Stone d) Plastic

4) Due to _____ the external faces of wall become the sources of entry of dampness in structure.
a) Exposed tops of walls b) Miscellaneous causes
c) Action of rain d) Condensation

5) The steel generally used in R.C.C. work, is _____.
a) Stainless steel b) Mild steel
c) High carbon steel d) High tension steel

Q.2 Draw and label (Any 2) **30**

a) Draw a Folded type RCC staircase for a residential building where the floor height is 3.30 meters, including a 150 mm thick slab. Provide drawings for the plan and sectional elevation, (scale 1:20)
b) Draw to scale plan, sectional elevation of king post truss for span of 6.0 mtr. Draw details of joints at ends and ridge, (scale 1:20)
c) Draw scaled and detailed section of waterproofing for toilet, terrace, balcony, (scale 1:20)

Q.3 Write short notes with sketches wherever necessary. **25**

a) Bedding concrete and flooring method for waterproofing of flat roof.
b) Lean to roof.
c) Mud flooring and moorum flooring.
d) Distinguish between load bearing and framed structure.
e) Define Nosing, Pitch, Head room, Newel, Balustrade.

Q.4 Choose the Correct Answer. **05**

1) Which of the below is an example of semi rigid DPC material?

a) Plastic sheeting b) Cement concrete
c) Asphalt d) Stone

2) In order to prevent the entry of damp into a building, the course is provided are known as the _____ course.

a) termite proofing b) water proofing
c) corrosion proofing d) damp proofing

3) Which among the following is not an iron ore?

a) Hematite b) Magnetite
c) Siderite d) Pyrrhotite

4) The _____ is the cheapest flooring material and can be only adopted for ground floor.

a) Rubber b) Plastic
c) Stone d) Moorum

5) DPC stand for: _____.

a) Damp Proof Course b) Damp Proof Cutting
c) Damp Proof Cable d) Damp Proof Case

Q.5 Answer in detail (any 2) **20**

a) What is Bitumen? Give its classification and Describe forms/types of bitumen and functions of bituminous material.
b) What is cast iron? Describe its four types, properties and uses.
c) Explain marble, terrazzo, cement concrete and brick flooring.

Q.6 Write short notes on **15**

a) Describe properties of wrought iron.
b) Describe forms/types of asphalt.
c) Write short note on mild steel bars.

SLR-JC-9

Seat No.	

Set P

B. Architecture (Semester-III) (New) (CBCS) Examination: March/April-2024
Theory of Structure - III (21AR3-03)

Day & Date: Wednesday, 22-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) All questions are compulsory.
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 option. **07**

1) The Rankine's formula is valid for _____.
a) Short columns only b) Long columns only
c) Both short and long columns d) None of the above

2) The load which doesn't pass through centre of section is called_____.
a) Concentric load b) Eccentric load
c) Concurrent load d) All of the above

3) The diameter of a core section for a circular cross-section under economic loading on a column of diameter d is _____.
a) b / 6 b) d / 4
c) d / 8 d) b / 2

4) A beam with more than two supports is called _____.
a) Cantilever beam b) Simply supported beam
c) Fixed beam d) Continuous beam

5) Slope at the supports of a simple supported beam of effective span L with a UDL w throughout its length is given by _____.
a) $WL^2/16EI$ b) $WL^3/24EI$
c) $WL^2/8EI$ d) $WL^3/12EI$

6) A plane with zero shear stress but only normal stress is called _____.
a) Normal plane b) Principal plane
c) Neutral plane d) Shear plane

7) A member in truss which carries tension is _____.
a) Tie member b) Principal rafter
c) Purlin d) All of the above

Q.2 Write short notes on - (Any 3) **15**

a) Derive expression of normal, shear and resultant stress on an oblique plane for a member subjected to only shear stress.
b) Write a note on types of trusses.
c) Write short note on Clapeyron's three moment theorem.
d) Derive the expression of core of section for circular section.

Q.3 Solve the following (Any Four) **48**

a) Find the normal, shear, resultant, maximum shear stress for an oblique plane inclined at 45° from horizontal. As shown in fig.1 below, the member is subjected to 100MPa tensile and 80MPa compressive stresses. Also find location of resultant and maximum shear stress.

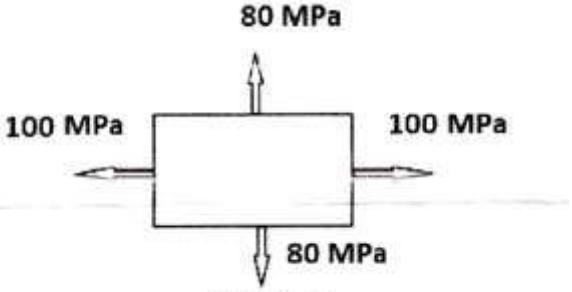


FIGURE - 1

b) Draw SFD and BMD of a continuous beam as shown in fig.2 below.

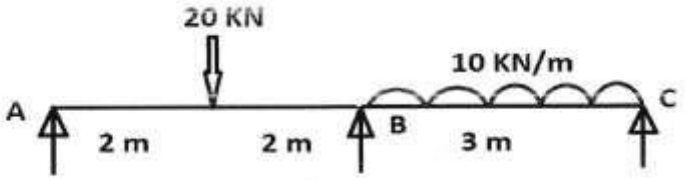


Fig.-2

c) A solid round bar 3.5m long and 40mm × 70mm in size is used as a strut, determine the crippling load. Take E=2 ×10^5N/mm^2

a) One end hinged and other end fixed.
b) One end is fixed and other end is free.
c) Both the ends are hinged.

d) A simply supported beam of span 7 m carries two point loads 220 KN and 120 KN at 2 m and 5 m from left support. Determine slope at supports and deflection at centre of beam. Take EI as constant.

e) A cast iron column of 450 mmX550mm carries a vertical load of 540 KN, at a distance of 90 mm from the centre along x-axis. Determine the maximum and minimum stress developed in the section. Also draw stress distribution diagram.

SLR-JC-10

Seat No.	

Set P

B. Architecture (Semester – III) (New) (CBCS) Examination: March/April-2024
History of Architecture- II (21AR3-04)

Day & Date: Friday, 24-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Choose the correct option. **07**

1) Identify the following - Great living Chola Temple?

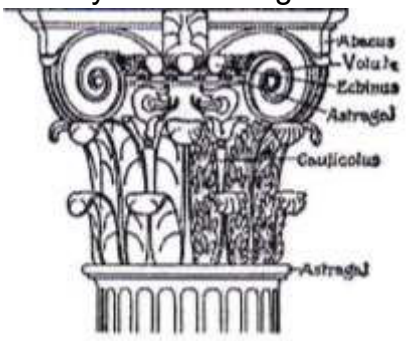
a) Gaigaikonda Cholapuram b) Virupaksa Temple
c) Vaikuntha Perumal Temple d) Brihdeshwara temple

2) The famous Konark Sun Temple is built in_____ stone.
a) Marble b) Sand stone
c) Granite d) Lime

3) Temple built in Hemadpanti Style- _____
a) Shore temple, Mahabalipuram
b) Vitthala Temple, Hampi
c) Virupaksh Temple, Kanchipuram
d) Mankeshwara temple, Nashik

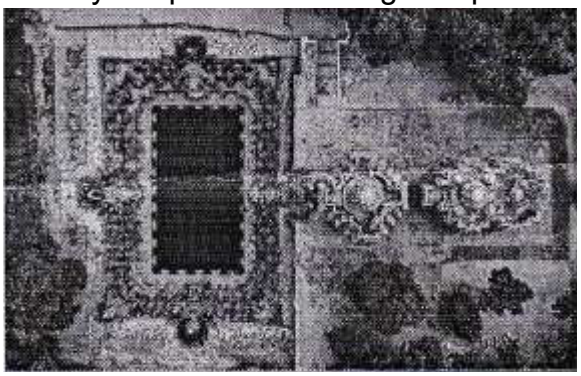
4) The one of the most famous Meenakshi Temple at Madurai is an example of _____.
a) Chalukyan Temple b) Dravidian Temple
c) Nagara temple d) Orrisan temple

5) Identify the following column capital?



a) Ionic Order
b) Corinthian Order
c) Doric Order
d) Composite order

6) Identify the plan of following Temple structure?



a) Sun temple Modera
b) Sun temple Konark
c) Martand Sun Temple, Kashmir
d) Surya temple, Marwar

7) Identify the following structure _____

a) Basilican Church of saint peter Rome
b) Hagiya Sophiya
c) Sain Marks Venice
d) Thermae at Caracalla

Q.2 Write shot note on the following. (Any 3) **15**

1) Udayagiri Caves Bhubaneshwar
2) Characteristic features of Chalukyan temple architecture
3) Parts of orisons temple
4) Greek theater at Epidaurus

Q.3 Write answer in brief (any 4)

1)		Sketch and explain salient features of Shore Temple, Mahabalipuram?	**06**
2)		Explain characteristic features of Jain temple architecture with respect to Adinath temple Ranakpur?	**12**
3)		Sketch and explain architecture of Virupaksa Temple at Pattadkal?	**12**
4)	**a)**	Sketch and explain optical any 3 corrections in Parthenon Temple Greek?	**06**
	b)	Sketch and explain characteristic features of Roman architecture?	**06**
5)	**a)**	Sketch and name the different parts of early Basilican church of saint peter Rome?	**06**
	b)	Sketch and explain Saint marks Basilica, Venice, Rome?	**06**

SLR-JC-11

Seat No.	

Set P

B. Architecture (Semester - III) (New) (CBCS)
Examination: March/April-2024
Architectural Graphics and Drawing- III (21AR3-05)

Day & Date: Monday, 27-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Draw perspective view for the object in Figure - A observing following points/conditions. **20**

Q.2 Draw sociography of the following object in Figure - B observing the source of the light is in conventional direction on the vertical and horizontal planes in plan and elevation. **20**

Q.3 Draw perspective view of the object in Figure-C along with shade and shadow Considering the source of light is in conventional direction on the vertical and Horizontal planes of the given object. **25**

FIGURE- A)

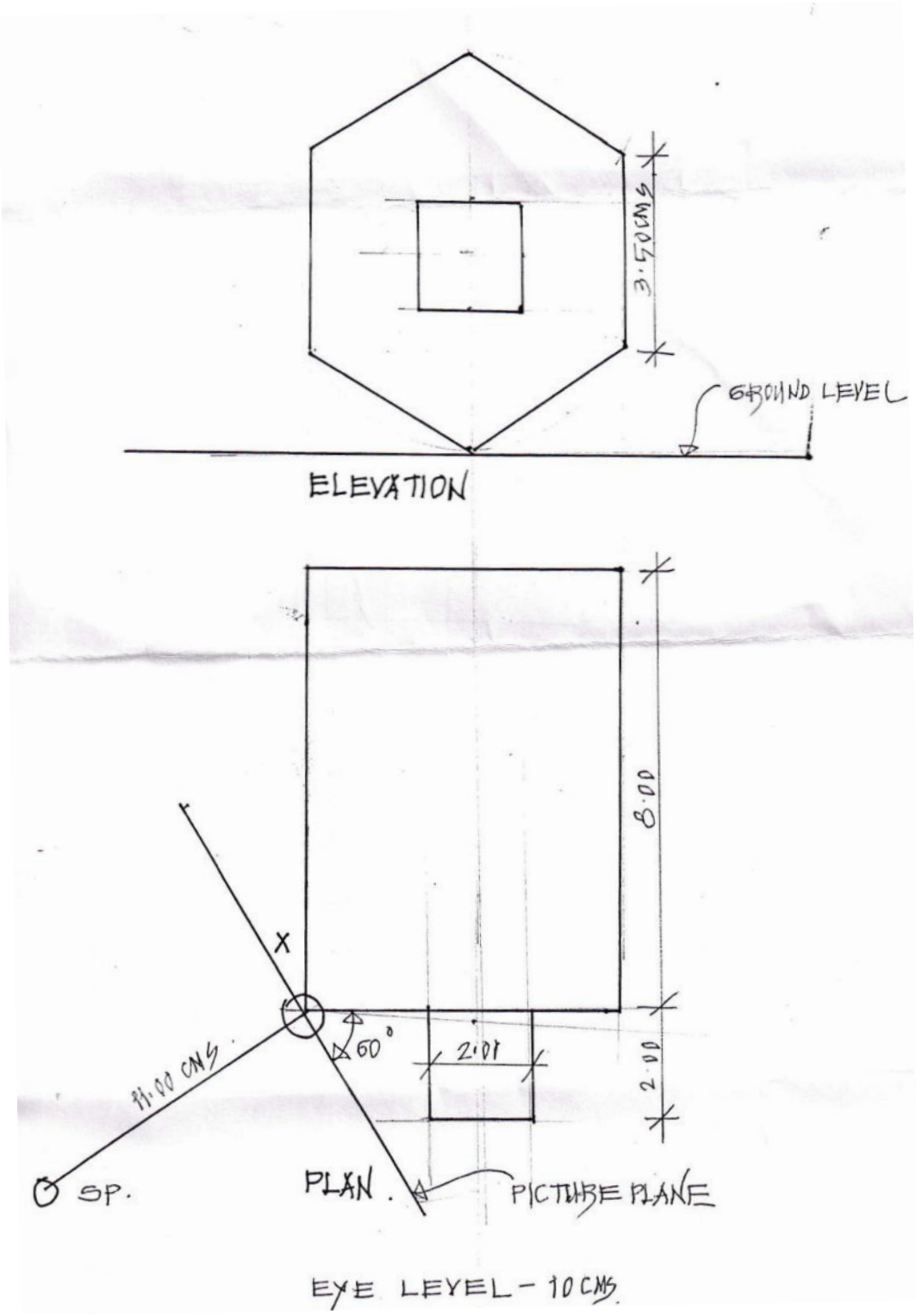

3.50 CMS
GROUND LEVEL
ELEVATION
8.00
2.00
2.00
60°
X
11.00 CMS
SP.
PLAN
PICTURE PLANE
EYE LEVEL - 10 CMS

FIGURE- B)

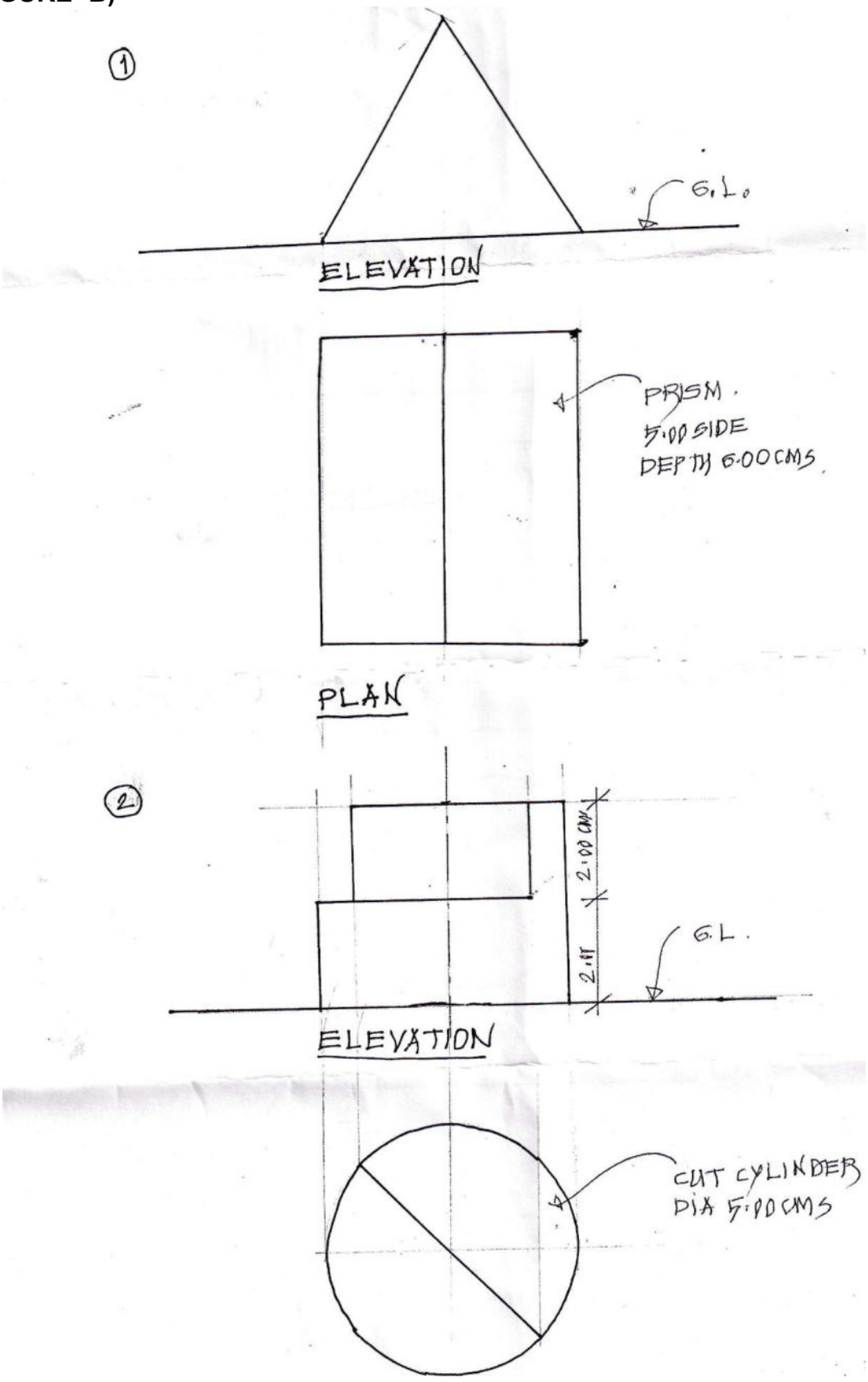
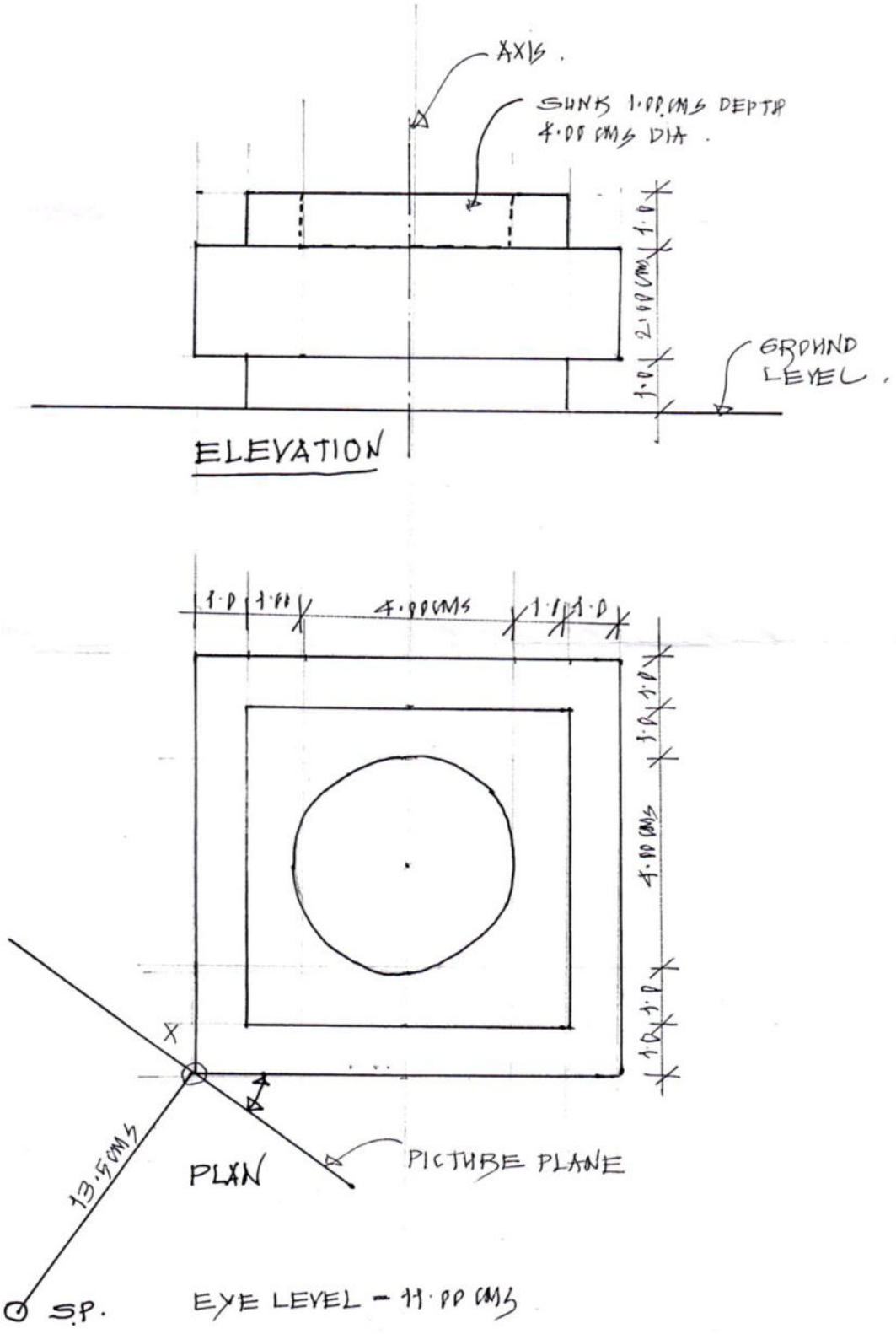

1
G.L.
ELEVATION
PRISM.
5.00 SIDE
DEPTH 6.00 CMS.
PLAN
2
2.00 CMS
2.00
G.L.
ELEVATION
CUT CYLINDER
DIA 5.00 CMS

FIGURE- C)


AXIS .
SUNK 1.00 CMS DEPTH
4.00 CMS DIA .
GROUND LEVEL .
ELEVATION
4.00 CMS
X
13.5 CMS
PLAN
PICTURE PLANE
S.P.
EYE LEVEL - 11.00 CMS

SLR-JC-12

Seat No.	

Set P

B. Architecture (Semester–III) (New) (CBCS) Examination: March/April-2024
Building Services –I (21AR3-07)

Day & Date: Wednesday, 29-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Fill in the blanks from the options given below. **07**

1) _____ is a type of pipe fitting which is generally used to close pipe opening during inspection and repairs.
a) Elbow b) Coupler
c) Cap d) Reducer

2) _____ measures and records the quantity of water consumed by the consumer.
a) Water meter b) Thermometer
c) Pulsimeter d) Oximeter

3) The 50mm dia. vent pipe attached to trap to maintain the water seal is known as _____.
a) Soil pipe b) Cowl
c) Anti-siphonage pipe d) Waste pipe

4) The component which is used to control the temperature in electric hot water geysers is called _____.
a) Solder b) Thermostat
c) Iron d) Gravity
e) Tester

5) In vertical drainage system, the waste water pipe at the bottom is released into _____.
a) Gully trap b) Intercepting trap
c) Bottle trap d) Manhole

6) In continuous horizontal drainage system, the distance between two inspection chambers must not exceed by _____.
a) 7m b) 20m
c) 50m d) 10m

7) When a separate vent pipe is provided in vertical drainage system, it is known as _____.
a) Single stack system b) One pipe system
c) Two pipe system d) None of these

Q.2 Write Short Notes. (Any Three) **15**

a) Pumping system of water distribution for towns/cities with sketch.
b) Insulation of hot water supply system.
c) Floor/Nahani trap with sketch.
d) Submersible pump with sketch.

Q.3 Answer in Brief. (Any Four) **48**

a) Design OHT (overhead water tank) for an apartment of 150 persons, considering the water consumption as 135 L /day/person. Draw plan and section of OHT and label its components.

b) Explain Ball valve, Gate valve and Float valve with neat sketches.

c) Explain with sketches safety features necessary to be adopted in hot water storage and supply system.

d) Draw 12 special fittings (specials) used in vertical drainage system.

e) Explain ‘Manhole’ and ‘oil and grease trap’ with neat sketches.

SLR-JC-13

Seat No.	

Set P

B. Architecture (Semester - III) (New) (CBCS)
Examination: March/April-2024
Climatology and Environment – I (21AR3-08)

Day & Date: Friday, 31-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) All questions are compulsory.
2) Figure to the right indicate full marks.
3) Draw neat sketches wherever necessary.
4) Calculator to be allowed in the Examination Hall.

Q.1 Choose the correct answer. **07**

1) The dry bulb or true air temperature value is taken in _____.
a) Shade b) Terrace
c) Rain d) Snow

2) Relative humidity is expressed in _____.
a) Percentage b) Ratio
c) Proportion d) None of these

3) The earth takes around _____ to complete one rotation around its own axis.
a) 24.00hrs b) 8.00hrs
c) 10.00hrs d) 12.00hrs

4) The direction of the wind is measured by _____.
a) Wind Vane b) Wind Data
c) Wind Graph d) Whirl wind

5) _____ is defined as the integration in time of weather conditions.
a) Climate b) Weather
c) Storm d) Cloudy

6) Thermal balance exists when met-evp$\pm$cnd $\pm$cnv$\pm$rad = _____.
a) Zero b) Less Than Zero
c) More Than Zero d) None of These

7) The Earth's axis is tilted _____ degrees from the plane of its orbit around the sun.
a) 23.5 b) 45
c) 90 d) 60

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

a) Earths thermal balance.
b) Temperature.
c) Bio-climatic chart.
d) Conduction, Convection and Radiation.

Q.3 Answer in brief with detailed sketches wherever necessary. (any 4) **48**

a) Explain in brief the factors causing deviations of the urban climate from the regional macroclimate.

b) Write in brief the Characteristics of Hot and dry climate with an example in Indian tropical continent region.

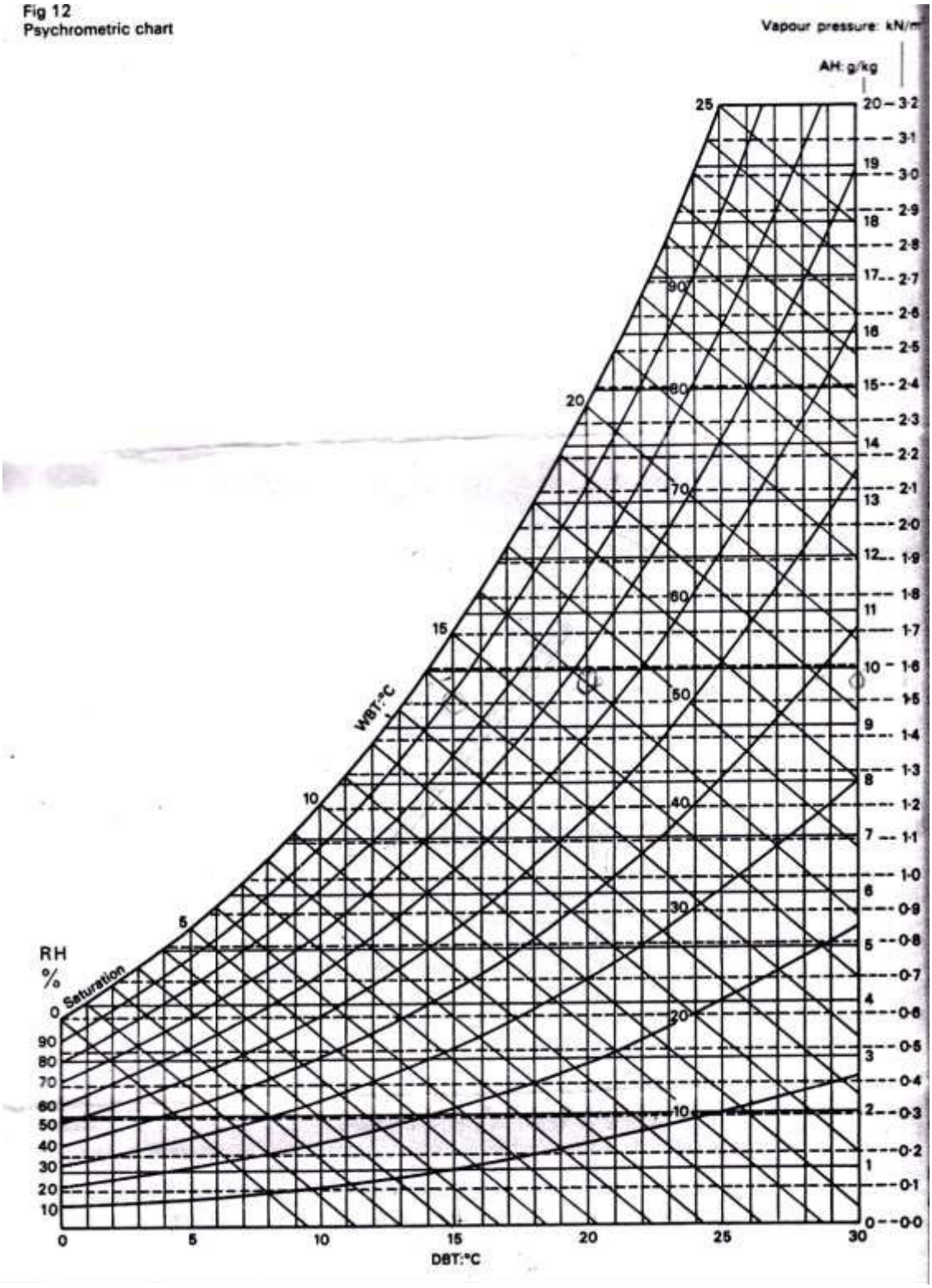
c) What are the various indices of thermal comfort? Explain any 3 in detail.

Q.4 a) Find AH, DBT, RH when VP-1.8 kN/m2, WBT -20*C.

b) Find AH, WBT, RH when VP-1.5 kN/m2, DBT - 30*C.

Q.5 A 5x 5 m and 2.5m high office is located on an intermediate floor of a large building, therefore it has only one exposed wall facing South, all other walls adjoint rooms kept at the same temperature Ti=20*C the ventilation rate is three air changes per hour, three 100 W bulbs are in continuous use to light the rear part of the room, which is used by four clerical workers, (assume 140 Watts). The exposed 5x2.5 m wall consists of a single glazed window 1.5 x 5 m =7.5 m2 U=4.48W/m2 deg C And a clinker concrete spandrel wall ,200 mm, rendered and plastered, 1x 5 m =5m2, U= 1.35 W/m2 deg C
Calculate the amount of heat to be removed by installing a cooling equipment

Fig 12
Psychrometric chart



SLR-JC-14

Seat No.		Set	P

B. Architecture (Semester - IV) (New) (CBCS) Examination: March/April-2024
Building Construction and Material- IV (21AR4-02)

Day & Date: Thursday, 16-05-2024 Max. Marks: 100
Time: 10:00 AM To 02:00 PM

Instructions: 1) Write question number correctly.
2) Draw neat sketches wherever necessary.
3) Q. No-2 has to be compulsorily drafted on sheets provided by the university.
4) Make suitable assumptions Wherever necessary and mention it
5) Figures to the right indicate full marks

Q.1 Choose the correct Answer. **05**

1) For normal works the recommended proportion of cement, sand and coarse aggregate is _____.
a) 1:1:2 b) 1:2:2
c) 1:3:5 d) 1:2:4

2) _____ is used as reinforcement in RCC work.
a) Steel b) Cement.
c) Water. d) Sand

3) RCC slab is designed as a one-way slab if the ratio of spans is more than ____.
a) 2 b) 4
c) 6 d) 8

4) _____ is used to allow concrete to set into desired structural shapes, (beams, columns, slabs, shells) required for building.
a) Scaffolding b) Shoring
c) Formwork d) None of the above

5) A foundation is called as _____ if its depth is less than or equal to its width.
a) Shallow b) Deep.
c) Both A & B d) Neither A nor B

Q.2 Draw and label (Any 2) **30**

a) A shop is to be provided with rolling shutter. Draw plan, elevation and section of rolling shutter to a suitable scale, Size of the opening is 5.00 m × 3.00 m.
b) Draw in- plan and section showing full reinforcement for a square R.C.C. Column 60cm × 60 cm resting on square footing.
c) Draw to a suitable scale showing reinforcement details in a simply supported beam, fixed beam and cantilever beam.

Q.3 Write short notes on- **25**

a) Advantages of RCC Framed Structure over load bearing structures.
b) Differentiate between one way and two-way RCC slab.
c) Market forms of steel.
d) Differentiate between Singly reinforced beam and Doubly reinforced beam.
e) Foundation and its types.

Q.4 Choose the Correct Answer. **05**

1) The initial setting time for ordinary Portland cement is about _____ minutes.

a) 30 min. b) 60 min
c) 45 min d) 25 min

2) _____ is a mixture of cement, sand, pebbles or crushed rock and water.

a) Cement Concrete b) Plan Cement Concrete
c) Reinforced Cement Concrete d) Fibre Reinforced Concrete

3) _____ Percentage of aggregates are required in concrete in terms of volume.

a) 50-60 b) 60-75
c) 45-60 d) -75-90

4) The ratio of cement and sand in a cement mortar used for plastering works, is _____.

a) 1:4 b) 1:2
c) 1:1 d) 1:6

5) _____ is the process of maintaining satisfactory temperature and moisture conditions in concrete long enough for hydration to develop the desired concrete properties.

a) Curing b) Mortar
c) Painting d) Plastering

Q.5 Answer in detail (Any 2) **20**

a) Mention the important properties of cement.
b) What is meant by curing of concrete? Mention its purposes? Mention the period of curing for ordinary Portland cement.
c) What is plaster of Paris? Mention its properties and uses.

Q.6 Write short notes on. **15**

a) Uses of cement
b) Properties of concrete
c) Plastering method - smooth, rough, textured, grit plaster etc.

SLR-JC-15

Seat No.	

Set P

B. Architecture (Semester -IV) (New) (CBCS) Examination: March/April-2024
History of Architecture – III (21AR4-04)

Day & Date: Saturday, 18-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Choose the correct option. **07**

1) Rashatrapati Bhawan is designed by architect _____.
a) Herbert Baker b) Edwin Lutyens
c) John Bastard d) Thomas Archer

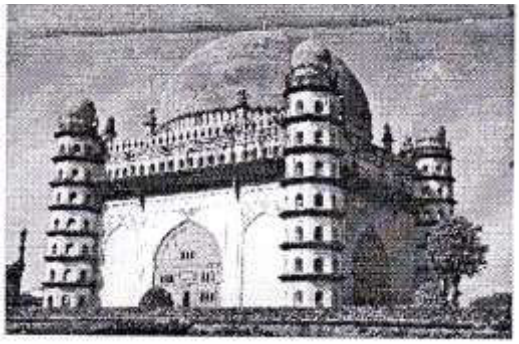
2) Saint Peters Piazza at in Rome designed by architect _____.
a) Marcus Vitruvius Pollio b) Hadrian
c) Gian Lorenzo Bernini d) Donato Bramante

3) Once known as 'Kingsway' during the British rule, _____ that rules from Rashatrapati Bhavan on Raisina Hill through Vijay Chowk and India Gate, National War Memorial to National Stadium, Delhi.
a) Raj path b) Jan path
c) Gandhi path d) Nehru path

4) Identify following structure.

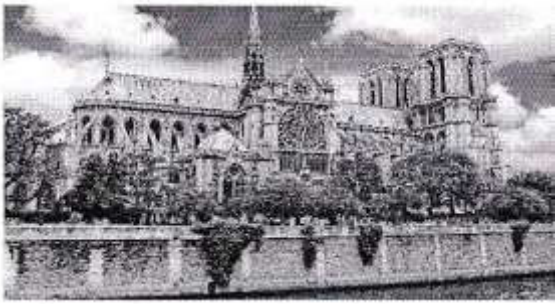
a) Tomb of Sikander Lodhi b) Tomb of Ghiyasuddin Tughlaq
c) Tomb of Mubarak Shah Sayyid d) Tomb of Humayun

5) Identify the following historic monument.



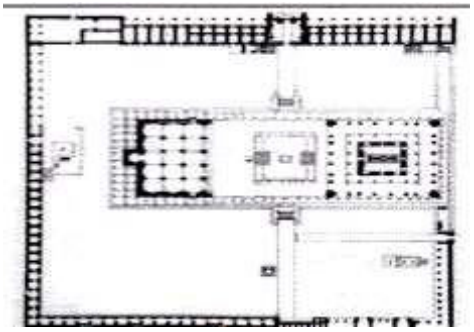
a) Shish Gumbad b) Gol-gumbad
c) Bara gumbad d) Arab Sarai

6) Identify the following structure.



a) Saint Peter Rome
b) Pisa cathedral
c) Notre dame
d) Villa Rotunda by Palladio

7) Identify the following plan of historic structure.



a) Ibrahim Rauza
b) Jodhabais Palace
c) Diwane Am
d) Madrassa of Gawan

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

a) Villa Rotunda By Palladio
b) Industrial revolution and its effect on building industry
c) Bauhaus School of architecture
d) Shalimar Bagh

Q.3 Answer in brief with detailed sketches. (Any Four) **48**

a) Explain with neat sketches the Quwwat-ul-Islam Mosque complex and its extension by various dynasties?
b) What are the essential parts of an Indian Mosque? Explain with neat sketches, mentioning the significance of each part?
c) What are the special features of Jami Magid of Gulbarga? Explain with neat sketches.
d) 1) Sketch and explain salient features of colonial buildings?
2) Sketch and explain Parliament houses New Delhi?
e) 1) Explain characteristic features of Romanesque Architecture?
2) Sketch and explain Leaning tower of Pisa.

SLR-JC-16

Seat No.	

Set P

B. Architecture (Semester - IV) (New) (CBCS) Examination: March/April-2024
Theory of Architecture (21AR4-05)

Day & Date: Tuesday, 21-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Assume suitable data if necessary.

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

1) De Architectura was written by _____.
a) Voillet Le Duc b) Andrea Palladio
c) Vitruvius d) Laugier

2) _____, treatise on architecture by John Ruskin.
a) The seven lamps of architecture
b) De Architectura
c) The Four Elements of Architecture
d) Mayamata

3) In Mayamata, the word Maya means- _____, Mata means- _____.
a) architect, opinion b) architect, value
c) artist, value d) architectural, value

4) Four elements of architecture according to Gottfried Semper are _____, Roof, _____ Substructure.
a) Earth, Beam b) Hearth, Enclosure
c) Plinth, Column d) Beam, Ceiling

5) _____ famous building designed by Japanese architect Kenzo Tange.
a) Villa Rotonda b) Villa Rosa
c) Notre-Dam de Paris d) Yoyogi National Gymnasium

6) Erich Mendelsohn's Einstein Tower is the best example of _____ in architecture.
a) Modernism b) Brutalism
c) Post modernism d) Expressionism

7) Concepts of Space in Traditional Architecture is a treatise published by _____.
a) Ar. Yatin Pandya b) Ar. Hassan Fathy
c) Ar. Kenzo Tange d) Ar. Robert Venturi

Q.2 Write Short Note (Any Three) **15**

a) Deconstructivism
b) Primitive hut
c) Seven Lamps of architecture
d) Robert Venturi and his design philosophies.

Q.3 Write answer in brief (Any Four) **48**

a) Write a note on "De Architectura" by Vitruvius.

b) Write a brief about Andrea Palladio.

c) Write about Metabolism movement by Kenzo Tange. Explain with one his project with sketches.

d) What is the contribution of Christopher Alexander to the architecture also write about his pattern language book.

e) Explain in brief about Charles Correa and his design principles with one example. Support your answer with sketches.

SLR-JC-17

Seat No.	

Set P

B. Architecture (Semester - IV) (New) (CBCS) Examination: March/April-2024
Theory of Structure – IV (21AR4-03)

Day & Date: Saturday, 25-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Use of scientific calculator, steel table and IS 875 is allowed.
2) All questions are compulsory.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.

Q.1 Fill in the blanks from the option given below **07**

1) The main advantage of steel member is its _____.
a) High strength b) Gas and water tightness
c) Long service life d) All options are correct

2) The wind load analysis can be done by using _____.
a) IS 875 part I b) IS 875 part II
c) IS 875 part III d) IS 875 part IV

3) The type of welding used to connect two plates by over lapping is _____.
a) Lap joint b) Butt joint
c) Bolted joint d) None of the above

4) The gross diameter of a 14mm nominal diameter rivet is _____.
a) 15.5mm b) 16mm
c) 16.5mm d) 15mm

5) A tie is a _____.
a) Tension member b) Compression member
c) Torsion member d) Flexural member

6) A compression member always tends to buckle in the direction of _____.
a) Axis load b) Perpendicular to the axis of load
c) Minimum cross section d) Least radius of gyration

7) The member of roof truss which supports the purlin is called as _____.
a) Sag rod b) Main strut
c) Principal rafter d) Principal tie

Q.2 Write Short Notes. (Any Three) **15**

a) Write a note on area calculation of steel tension member.
b) Explain about the criteria of failure of rivet.
c) Differentiate between riveted and welded connections.
d) Write a note on effective length of column.

Q.3 Solve any Four of the following. **48**

a) Determine the rivet value of 20mm diameter rivets connecting 10mm plate and is in
1) single shear
2) double shear
The permissible stresses for the rivets in shear and bearing are 85 MPa and 250 MPa resp.

b) Design a Simply supported beam of length 4.8m which is carrying UDL of 50 KN/m. Effective length of compression flange of beam is also 4.8m. The ends of beam are not free to rotate at the bearings.

c) Design a rolled steel I section column to carry an axial load of 900 KN. The column is 3.5m long and adequately restrained in position but not in direction at both the ends.

d) Find the forces in the members of following truss.

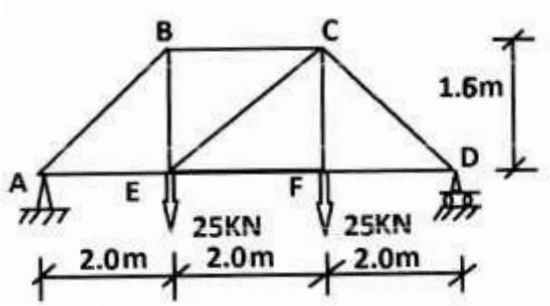


Figure - 1

e) 1) Write a note on working stress method and limit state method.
2) What are the loads considered in the design of steel structures? Explain in brief.

SLR-JC-18

Seat No.	

Set P

B. Architecture (Semester–IV) (New) (CBCS) Examination: March/April - 2024
Building Services – II (21AR4-07)

Day & Date: Tuesday, 28-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Fill in the blanks from the options given below in the bracket. **07**

1) _____ type of lift is used to vertically transport food items from kitchen.
a) Dumb waiter b) Scissors
c) Passenger d) Stretcher

2) Lux is the unit of _____.
a) Luminous flux b) Luminous intensity
c) Intensity of illumination d) None of the options

3) 2 wires are used in _____ connection.
a) Single phase b) Three phase
c) Two phase d) Four phase

4) _____ ventilation is easily affected by outdoor climate and occupant behavior.
a) Artificial b) Natural
c) Hybrid d) Mechanical

5) Tungsten filament is used in _____ lamp.
a) LED b) Neon
c) Incandescent d) Fluorescent

6) Electric fan used in house is a _____ ventilation device.
a) Mechanical b) Natural
c) Sustainable d) Poor

7) An electronic device has a resistance of 15 ohms and a current of 30A, then the voltage across the device will be _____.
a) 20V b) 300V
c) 1.5V d) 450V

Q.2 Write Short Notes on. (Any Three). **15**

a) Advantages of LED lamps over other lamps.
b) Mechanical ventilation and its benefits.
c) Sodium discharge lamp.
d) Counter weight of lift with sketch.

Q.3 Attempt the following Questions. (Any Four) **48**

a) Draw Plan and section through Passenger lift and label its components. Explain any 6 components.

b) Give any 8 points of comparison between Cleat wiring, Casing Capping wiring, Batten wiring and Conduit wiring.

c) Draw a neat diagram of Three phase electric supply and explain in detail.

d) Draw a neat section through window air conditioner and label it. Explain its components and operation?

e) Draw diagram of a luminaire showing its components and explain any 6 components and write factors to be considered in the design of a lighting scheme?

SLR-JC-19

Seat No.	

Set P

B. Architecture (Semester – IV) (New) (CBCS)
Examination: March/April -2024
Climatology and Environment - II (21AR4-08)

Day & Date: Thursday, 30-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Question One and Two are compulsory.
2) Solve any Four from Question Three to Seven.
3) Figures to right indicates full marks.
4) Make suitable assumption whenever necessary and mention in your answer book.

Q.1 Choose the correct Answer. **07**

1) A white light passing through a red glass, emerges as a _____ light.
a) White b) Red
c) Blue d) None of above

2) When a light absorbing body (called a black body) is heated, it first glows deep red, then cherry red, then orange until finally it becomes ____ hot.
a) blue-white b) Black
c) green d) none of above

3) People tend to be comfortable within a fairly narrow range of temp. & relative humidity called the "_____",
a) livable zone b) passive zone
c) comfort zone d) None of the above

4) In valleys wind blows _____ during the day.
a) uphills b) Latral
c) downhills d) None of the above

5) To determine architectural responses that produce thermal comfort in your climate, is derived by using _____.
a) Bioclimatic chart b) Sunpath diagrame
c) Wind rose d) None of the above

6) An object is, technically, said to be " _____ " when it does not exhibit selective absorption.
a) Blank b) Transparent
c) Colourless d) None of the above

7) _____ -value tells us how well a surface with stand heat transfer.
a) R b) K
c) U d) None of the above

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

1) Land wind Sea wind.
2) Light Shelves.
3) Exterior surface colour of building.
4) Bio-climatic Chart.

Q.3 a) Give Importance of sun penetration in cold climates and how to achieve it? **04**

b) From the given SUNPATH Diagram, for 28° N, find the Azimuth **08**

May 9 a.m.

September 3 p.m.

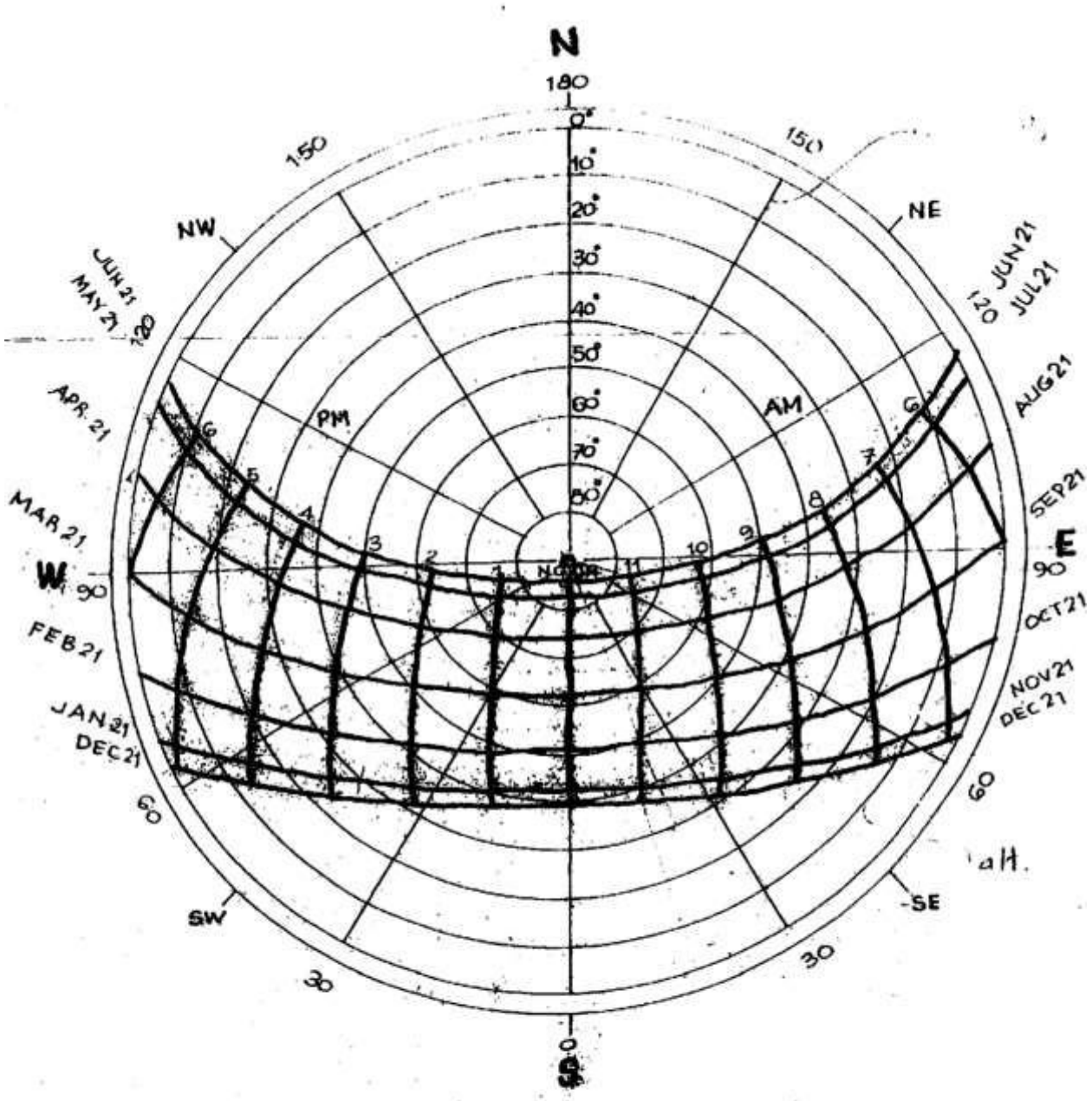
Q.4 Explain Hot and Dry Climate and give any three bioclimatic design strategies to be used in Hot and Dry climate. **12**

Q.5 a) Explain Heat Flow Through The Envelope. **05**

b) Explain with sketches LOCATING OUTDOOR ROOMS in site planning. **07**

Q.6 Explain with sketches Solar Envelope and how they are plot. **12**

Q.7 Explain with sketches Day light designing in Hot and Dry climate. **12**



SUNPATH DIAGRAM, 28° NORTH LATITUDE.

SLR-JC-20

Seat No.	

Set P

B. Architecture (Semester–IV) (CBCS) Examination: March/April-2024
Architectural Graphics – IV (7022402)

Day & Date: Friday, 17-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

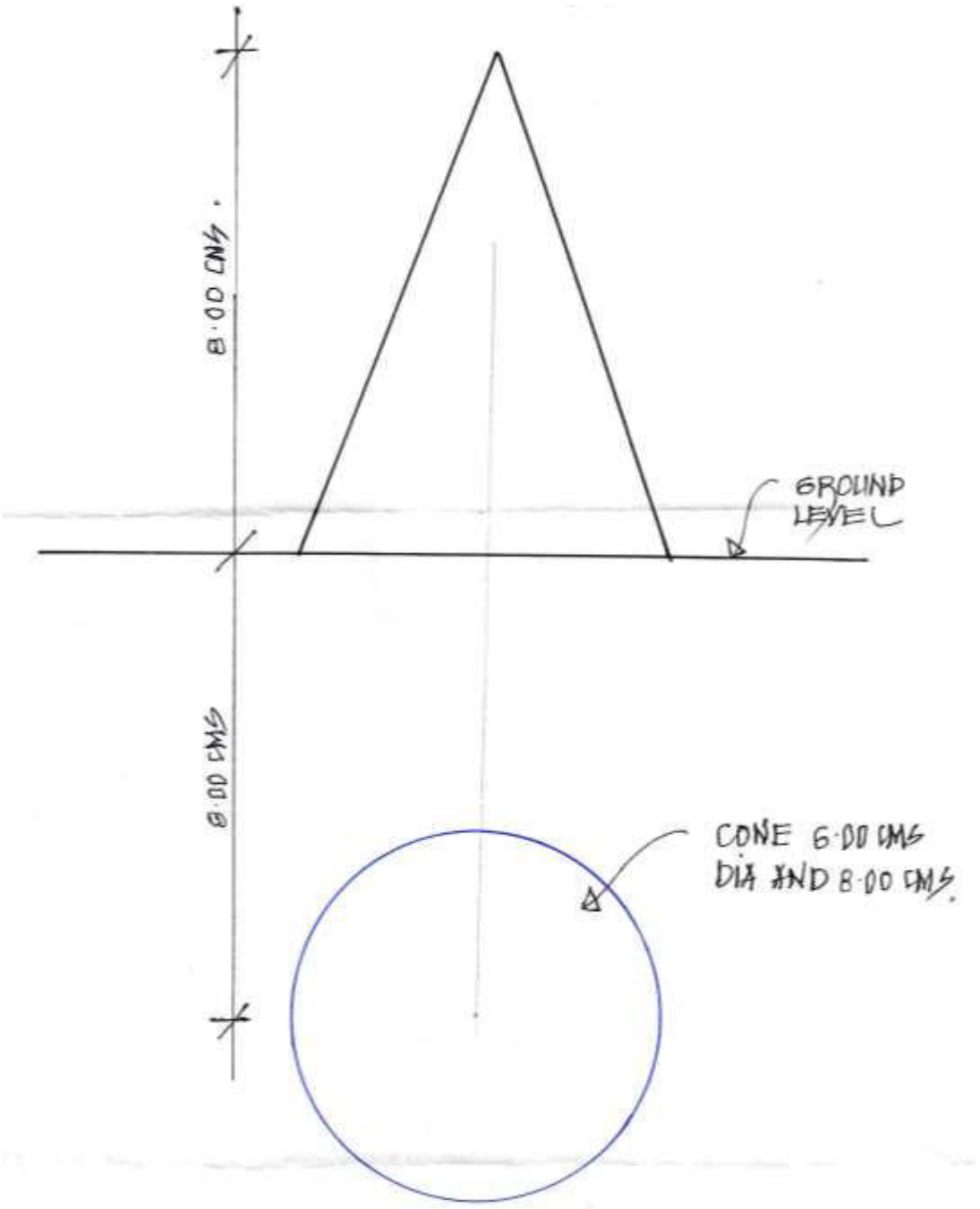
Instructions: 1) All questions are compulsory.
2) Retain all construction lines.
3) Figures to the right indicates full marks.
4) Five marks are reserved for neatness and good drafting quality.
5) Make suitable assumptions wherever required.

Q.1 Draw shades and shadows of the Dia. A in plan and elevation considering the source of light is in conventional direction on the vertical and horizontal planes of the object. **10**

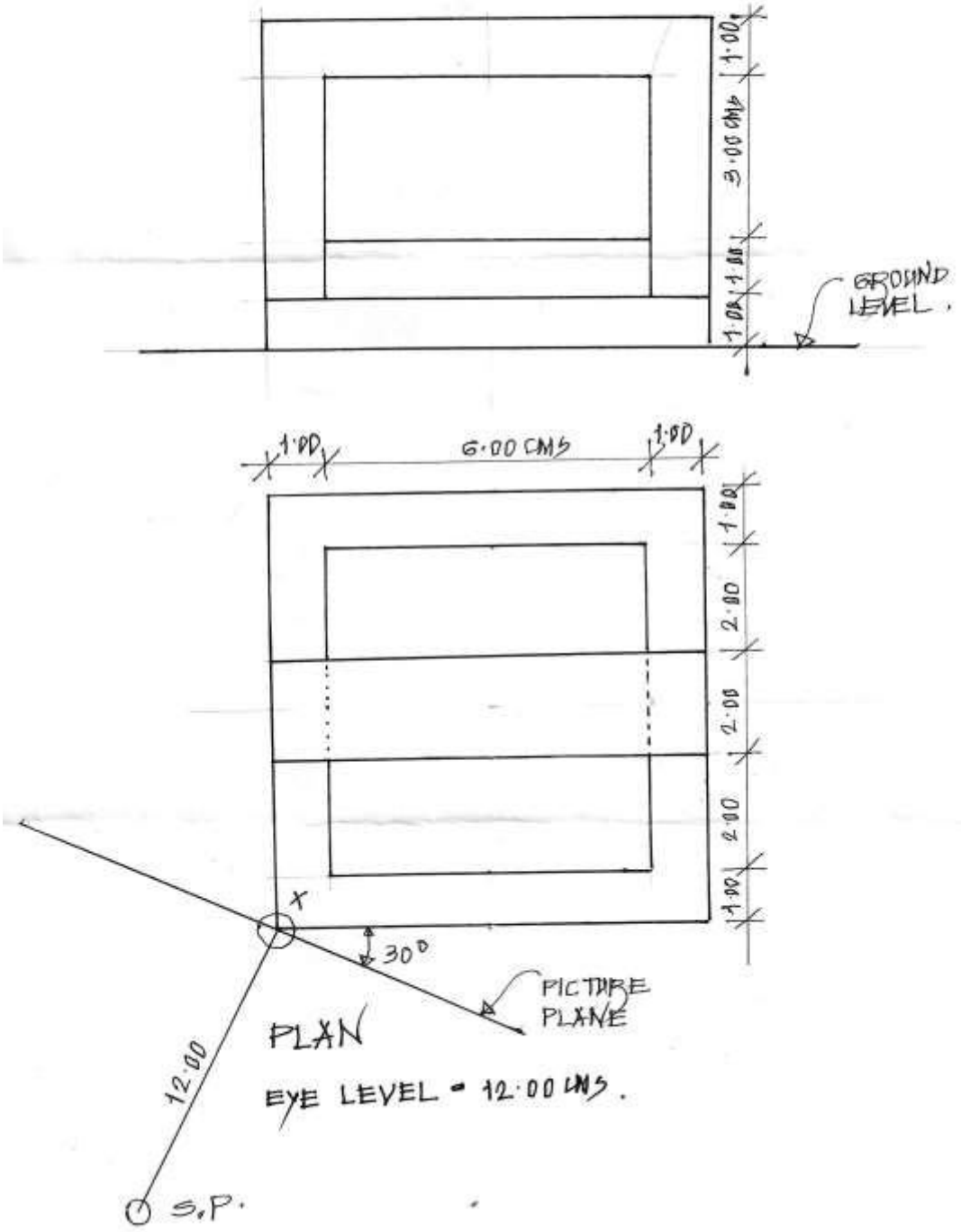
Q.2 Draw perspective view of the given object by observing points in Dia. B **20**
a) A plane makes an angle as shown in Figure
b) The picture plane touches the object at X
c) Station point is 120 mm away from the 'X'
d) The eye level is 120 mm above ground level

Q.3 Dia. C shows plan and elevation of the object as shown in the figure and draw perspective view observing the following points. **35**
a) Picture plane passes through 'X'
b) Station point is 110 mm away from picture plane.
c) Eye level is 110 mm away and above ground level and draw shades and shadows in perspective view.

DIA-A



DIV-B


1·00
3·00 CMS
1·00
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GROUND LEVEL.
1·00
6·00 CMS
1·00
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2·00
2·00
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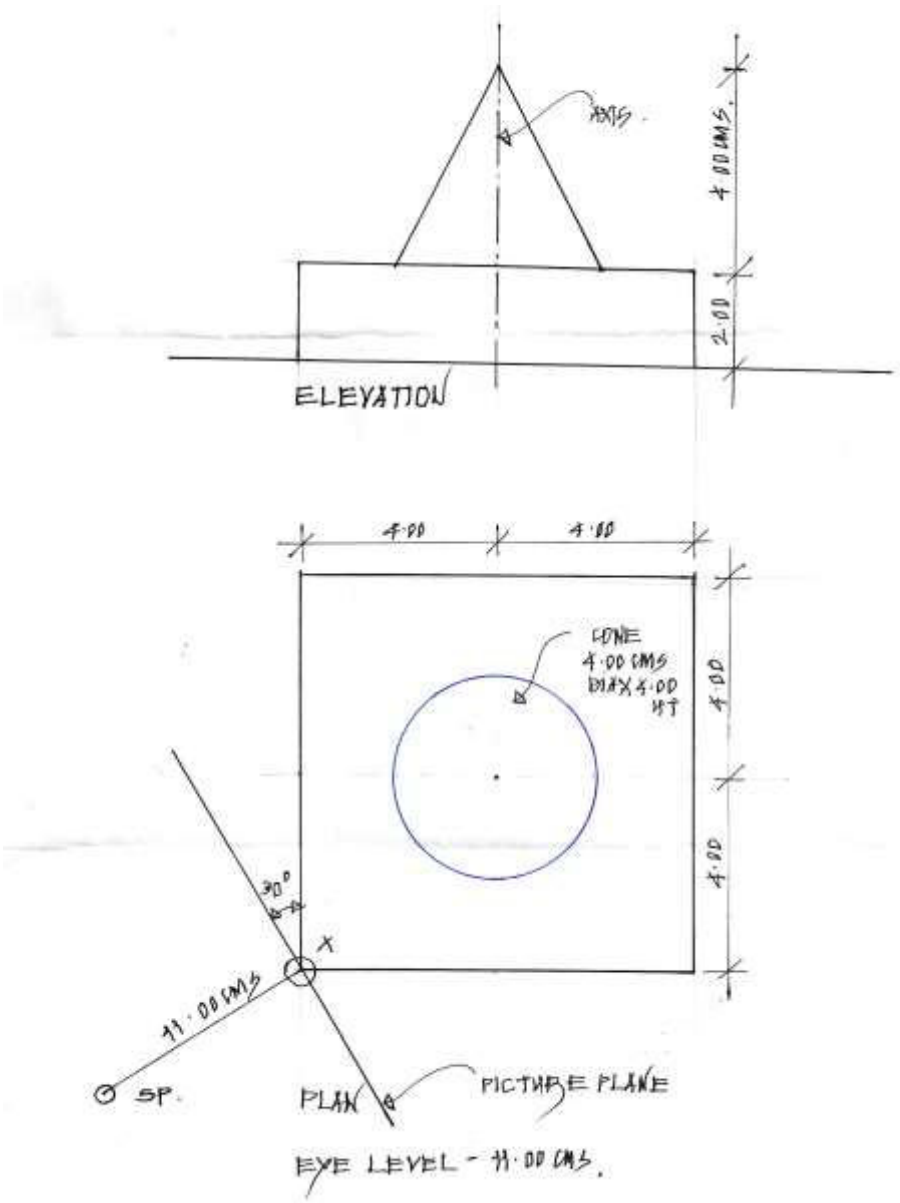
X
30°
PICTURE PLANE
PLAN
EYE LEVEL = 12·00 MTS.
12·00
S.P.

DIA-C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PLAN
PICTURE PLANE
EYE LEVEL - 11·00 CMS.

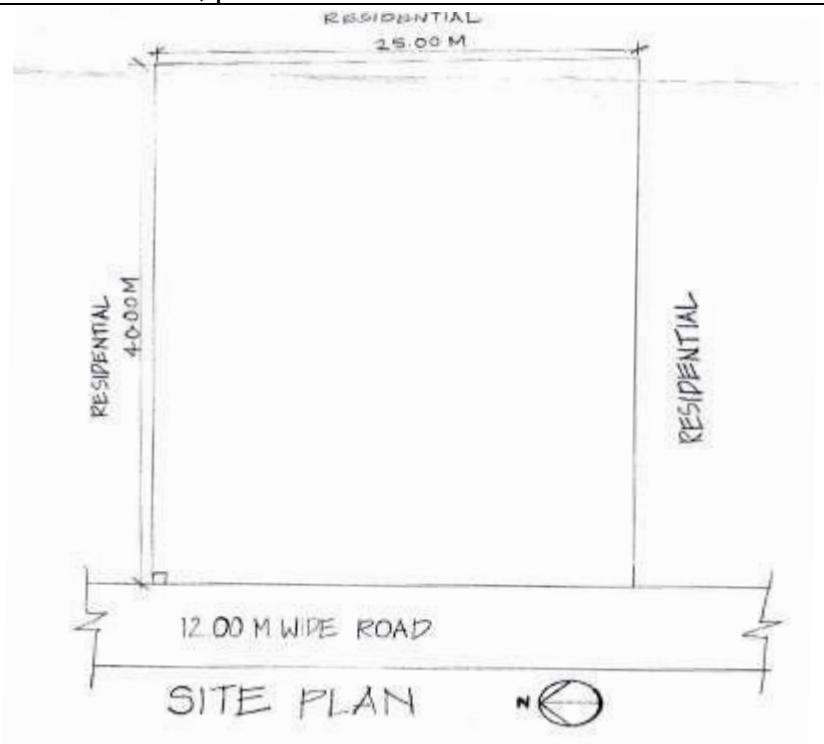
SLR-JC-21

Seat No.		Set	P

B. Architecture (Semester - V) (New) (CBCS) Examination: March/April-2024
Architectural Design -V (21AR5-01)

Day & Date: Wednesday, 15-05-2024 Max. Marks: 100
Time: 10:00 AM To 04:00 PM

Instructions: 1) Make suitable assumptions wherever necessary and mention on drawing.
2) Figures to the right indicate full marks.

Q. No		PROJECT TITLE: **PRE-PRIMARY SCHOOL**	Marks
1	DESIGN BRIEF	A NGO in Solapur City wants to start a Pre-Primary School for Kids in a Residential Neighborhood in the City.	100
	PROPOSED SITE	About the site: Site is located at residential colony in Solapur. Please refer to attached site; plan for details.	
			
		Setbacks for Site Front Setback - 6.00 m Rear and Side Setback - 3.00 m	

	DESIGN PROGRAM	ENTRANCE LOBBY	10	SQM	
		OFFICE AND WAITING	25	SQM	
		PRINCIPAL CABIN	15	SQM	
		STAFF ROOM	30	SQM	
		MEETING ROOM/AV ROOM	25	SQM	
		CLASSROOMS 4 NOS. TOTAL FOR LKG AND UKG	25	SQM	
		TOILETS FOR GIRLS. AND BOYS	30	SQM	
		TOILETS FOR STAFF	AS REQURED		
		ADEQUATE PLAY AREA SHOULD BE PROVIDED ALONG WITH DRINKING WATER AND OTHER FACILITIES AS REQUIRED.			
		ADEQUATE PARKING FOR 4 AND 2 WHEELERS FOR STAFF AND VISITORS			
	DRAWING REQUIREMENT	1) Concept			15
		2) Site Plan			25
		3) All Floor Plans (Including Terrace if Applicable) Technically Complete			25
		4) One Elevations			10
		5) Two Sections			15
		6) Sketches, Details if any to explain scheme			05
		7) Neatness, Drafting etc.			05
		Note: Site Plan -1:100 Scale			
		All Floor Plans, Elevation and Section 1:50 Scale			

SLR-JC-22

Seat No.	

Set P

B. Architecture (Semester–V) (New) (CBCS) Examination: March/April-2023
Theory of Structure-V (21AR5-03)

Day & Date: Saturday, 25-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Use of Scientific Calculator and IS 456-2000 is allowed.
2) All questions are compulsory.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.

Q.1 Choose the Correct Option. **07**

1) For a circular column section, minimum number of main steel bars required is _____.
a) 4 b) 6
c) 8 d) 10

2) If Ly/Lx ratio of a slab is greater than 2, then it is a _____.
a) Short span b) Waffle slab
c) One way slab d) Two Way slab

3) Minimum depth assumed at edge of foundation is _____.
a) 100 mm b) 150 mm
c) 125 mm d) 200 mm

4) For a cantilever beam, the ratio of the span of the beam to its effective depth should not exceed _____.
a) 10 b) 20
c) 26 d) 7

5) If concrete is of M20 grade, 20 represents _____.
a) Mix design b) Characteristic load
c) Characteristic strength d) None of the above

6) The diameter of the longitudinal bars of the column should never be less than _____.
a) 6 mm b) 8 mm
c) 10 mm d) 12 mm

7) In the design of staircases, loads coming from following elements are considered _____.
a) Steps b) Waist slab
c) Floor finish d) All of the above

Q.2 Write Short Notes on the following. (Any Three) **15**

1) Write note on working stress method and limit State Method.
2) Explain under reinforced, balanced and over reinforced section.
3) Write down design steps for Two Way Slab.
4) Explain types of Staircases.

Q.3 Answer the following in Details. (Any Four) (12 Marks Each) **48**

1) Design simply supported two way slab for a room of 2.8m × 4m with 230 mm thick wall. Assume live load of 2.75KN/m^2 and floor finish of 1.1KN/m^2. Use M20 grade of concrete and Fe415 steel.

2) Design simply supported slab for a hall of 3m X 7.5m with 230mm thick wall. Assume live load of 3 KN/m^2 and floor finish of 1.2 KN/m^2. Use M20 grade of concrete and Fe415 steel.

3) A simply supported beam of length 3.5m is carrying UDL of 25 KN/m inclusive of self-weight. Analyze and design the beam. Use M20 grade of concrete and Fe415 steel.

4) Design a rectangular column of 4.2m unsupported length, restrained in position and direction at both ends to carry an axial load of 980KN. Use M20 grade of concrete and Fe415 steel.

5) Design footing to carry 720KN load. Take safe bearing capacity of soil as 175KN/m^2. Use M20 grade of concrete and Fe415 steel.

SLR-JC-23

Seat No.	

Set P

B. Architecture (Semester – V) (New) (CBCS) Examination: March/April-2024
History of Architecture –IV (21AR5-04)

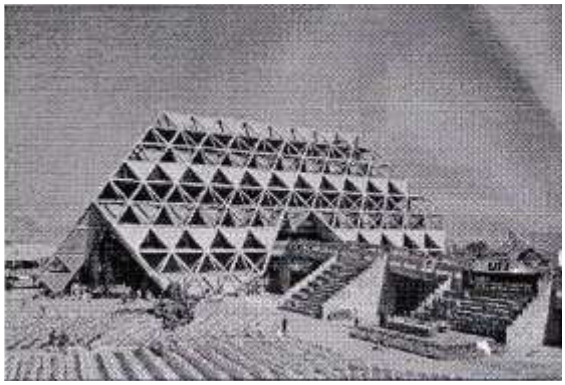
Day & Date: Tuesday, 28-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Choose the correct option. **07**

1) Casa Mila apartment in Spain is an Example of _____ Architectural movement.
a) High Tech Architecture b) Art Nouveau
c) Deconstructivism d) Post Modern

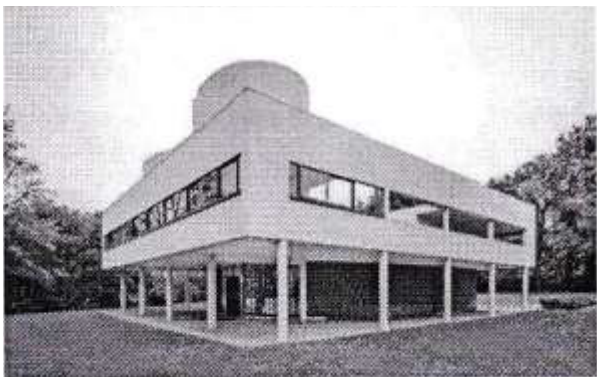
2) Hall of Nations building in Delhi is designed by architect _____.



a) B.V. Doshi b) Achyut Kanvinde
c) Laurie Baker d) Raj Rewal

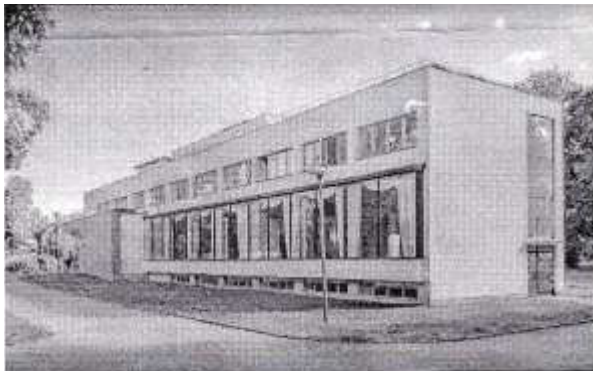
3) The first Indian Architect who own Pritzker Prize _____.
a) Raj rewal b) Charles Korre
c) B.V. Doshi d) Ar. Le Corbusier

4) Identify the following structure.



a) Falling Water b) AT & T building
c) Vila Savoy d) Vanna venturi house

5) Following library is considered a milestone in the history of modern architecture designed by Architect _____.



a) Renzo Piano
b) Norman Foster
c) Alvar Alto
d) Philip Johnson

6) Guggenheim museum at Bilbao designed by Architect _____.

a) Philip Johnson
b) Zaha Hadid
c) Frank Gehry
d) Norman Foster

7) Identify the following postmodernist structure _____.

a) HSBC building, Hong Kong
b) At & T building, New York
c) Bhopal development Authority Headquarters
d) IBA Housing, Germany

Q.2 Write short notes (Any 3) **15**

1) Guggenheim Museum, Bilbao
2) Zaha Hadid - Queen of Curves
3) Mill owner's association building, Chandigarh
4) Barcelona Pavilion

Q.3 Answer in brief with detailed sketches – (Any 4) **48**

1) a) Define postmodernism with example Vanna venturi house?
b) Discuss how through the work, ar. Laurie baker has practiced Gandhis principles?

2) Explain design principles of Renzo Panno through his project - Pompidou center?

3) Explain the basic concepts employed by Achyut Kanvinde in making of Nehru science center.

4) a) Sketch and explain Kanchenjunga Mumbai?
b) Sketch and explain Sangath, Ahmedabad?

5) Explain characteristic of national congress building, Brasil. Explain what role it plays in the evolution of ideas of architectural history?

SLR-JC-24

Seat No.	

Set P

B. Architecture (Semester - V) (New) (CBCS)
Examination: March/April-2024
Building services – III (21AR5-07)

Day & Date: Thursday, 30-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Fill in the Blanks. **07**

1) Sound intensity falls _____ dB with each doubling of distance from line source.
a) 3 b) 6
c) 9 d) 0

2) _____ shape auditorium is ideal design.
a) Fan b) Round
c) Elongated d) Ellipse

3) _____ m must be travel distance of exit routs on every floor.
a) 40 b) 30
c) 20 d) 10

4) The physical process by which sound passes around obstructions & through small openings is called "_____".
a) reflection b) absorption
c) diffraction d) None of the above

5) A power-driven set of stairs arranged like an endless belt that ascend or descend continuously known as _____.
a) revelator b) lift
c) escalator d) none of the above

6) Sound pressure level is expressed in _____.
a) dB b) meter
c) kg d) none

7) Noise criteria for recording room is _____.
a) quite zone b) moderate
c) noisy zone d) live zone

Q.2 Write Short Note. (Any Three) **15**

a) Explain sprinkler and smoke detector.
b) Sound echo's and sound diffusion.
c) The mechanics of absorption.
d) Image source.

Q.3 Solve Any Four of the following. **48**

a) Explain any four components of lift. **12**

OR

Explain any four components of escalator.

b) Explain in detail Exit doorways design in fire safety. **12**

c) Explain celling design of auditorium with help of Ray Diagram. **12**

d) Explain with sketched Sound Fields in an Enclose Space. **12**

e) Calculate total absorption required and design a multipurpose hall for capacity of 200 people consider volume 4.5 m3 /person and Rt=0.8; use following absorption coefficient; give conceptual section and plan. **12**

1) pop -0.26
2) glass wool-0.15
3) occupied seat- 0.42
4) curtain 0.2
5) unoccupied seat-0.18
6) mineral fiber panel-0.53

SLR-JC-27

Seat No.	

Set P

B. Architecture (Semester -V) (Old) (CBCS) Examination: March/April -2024
Theory of Structure-V (7023501)

Day & Date: Saturday, 25-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Use of scientific calculator, steel table and IS 875 is allowed.
2) All questions are compulsory.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.

Q.1 Choose the Correct Option. **07**

1) The main advantage of steel member is its _____.
a) High strength b) Gas and water tightness
c) Long service life d) All options are correct

2) The wind load analysis can be done by using _____.
a) IS 875 part I b) IS 875 part II
c) IS 875 part III d) IS 875 part IV

3) The type of welding used to connect two plates by over lapping is _____.
a) Lap joint b) Butt joint
c) Bolted joint d) None of the above

4) The gross diameter of a 14mm nominal diameter rivet is _____.
a) 15.5mm b) 16mm
c) 16.5mm d) 15mm

5) A tie is a _____.
a) Tension member b) Compression member
c) Torsion member d) Flexural member

6) A compression member always tends to buckle in the direction of _____.
a) Axis load b) Perpendicular to the axis of load
c) Minimum cross section d) Least radius of gyration

7) The member of roof truss which supports the purlin is called as _____.
a) Sag rod b) Main strut
c) Principal rafter d) Principal tie

Q.2 Write Short Notes. (Any Three) **15**

a) Write a note on area calculation of steel tension member.
b) Explain about the criteria of failure of rivet.
c) Differentiate between riveted and welded connections.
d) Write a note on effective length of column.

Q.3 Attempt the following Question. (Any Four) **48**

a) Determine the rivet value of 20mm diameter rivets connecting 10mm plate and is in
1) single shear
2) double shear
The permissible stresses for the rivets in shear and bearing are 85 MPa and 250 MPa resp.

b) Design a Simply supported beam of length 4.8m which is carrying UDL of 50 KN/m. Effective length of compression flange of beam is also 4.8m. The ends of beam are not free to rotate at the bearings.

c) Design a rolled steel I section column to carry an axial load of 900 KN. The column is 3.5m long and adequately restrained in position but not in direction at both the ends.

d) Find the forces in the members of following truss.

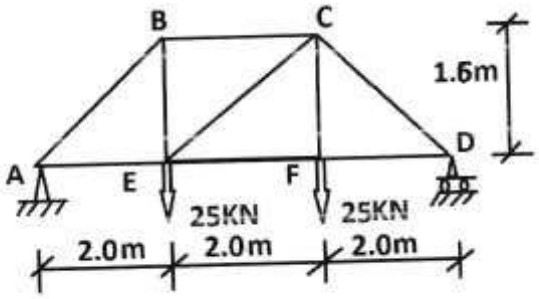


Figure - 1

e) 1) Write a note on working stress method and limit state method.
2) What are the loads considered in the design of steel structures? Explain in brief.

SLR-JC-28

Seat No.	

Set P

B. Architecture (Semester–V) (Old) (CBCS) Examination: March/April-2024
Building services–III (7023503)

Day & Date: Tuesday, 28-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Choose the Correct Option. **07**

1) Removal of inside air and supply of fresh outside air in a closed room is known as _____.
a) Ventilation b) Absorption
c) Adsorption d) Transmission

2) Candela is the unit of _____.
a) Luminous flux b) Luminous intensity
c) Wavelength d) None of the above

3) In which component of the chilled water system, the return air and the fresh air mixture is filtered?
a) Fan coil unit b) Ducting grill
c) Compressor d) Evaporator

4) _____ are the working fluids in air conditioners, chillers and refrigerators.
a) Refrigerants b) Liquid
c) Gas d) Carbon dioxide

5) The process of addition of the certain required amount of water from air is known as _____.
a) Cooling b) Dehumidification
c) Humidification d) Heating

6) The process of direct transmission of heat through a material is known as ____.
a) Conduction b) Radiation
c) Thermal insulation d) Thermal energy

7) The general temperature difference between inside and outside of a room is not more than _____.
a) 3°C b) 5°C
c) 6°C d) 8°C

Q.2 Write Short Notes. (Any Three) **15**

a) Neon lamps
b) Plenum system
c) Fire Alarm system
d) Humidification process in Air Conditioning

Q.3 Answer the following Questions. (Any Four) **48**

a) Explain in detail various types of Wrings used in Electrical System.

b) Explain the necessity of providing fire Protection System in the building and write a note on automatic sprinklers in fire Protection System.

c) State the importance of Ventilation in a building and explain types of Mechanical Ventilation Systems.

d) Explain in detail the functioning of Escalators.

e) Explain why filters are used in air conditioning system and explain various types of filters used in A.C.

SLR-JC-32

Seat No.		Set	P

B. Architecture (Semester–VI) (New) (CBCS) Examination: March/April - 2024
Building services – IV (21AR6-07)

Day & Date: Monday, 20-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Choose the correct answer. **07**

1) The maximum quantity of dissolved oxygen present in wastewater is called _____.
a) Maximum dissolved oxygen b) Saturated dissolved oxygen
c) Peak dissolved oxygen d) Optimal dissolved oxygen

2) The biochemical treatment of sewage effluents is essentially a process of _____.
a) Oxidation b) Dehydration
c) Reduction d) Alkalinization

3) The pathogens can be killed by _____.
a) Nitrification b) Chlorination
c) Oxidation d) None of the above

4) The disposal of sewage from the septic tank is done by which of the following?
a) Clarifier b) Soak pit
c) Aerated lagoon d) lamp hole

5) In which sludge treatment process, the organic solids are converted into more stable form?
a) Dewatering b) Thickening
c) Digestion d) Conditioning

6) The process of decomposition of biodegradable solid waste by earthworms is called _____.
a) Land fills b) Shredding
c) Vermi-composting d) Composting

7) Which of the following is a biological method of disposal of municipal solid waste?
a) Land fills b) Shredding
c) Pulverization d) Composting

Q.2 Write short note on (Any 3) **15**

a) Screening In Sewage Treatment Plant
b) Septic Tank
c) Industrial Waste
d) Swimming Pool

Q.3 Solve the following (Any Four) **48**

a) Write a Note on Natural Methods of Sewage Disposal and Explain Dilution Method with the Help of Neat Sketch.

b) Draw and Explain with the Help of Neat Sketch, Layout and Working of a Typical Sewage Treatment Plant.

c) Discuss the methods of garbage collection and method of solid waste management for urban areas.

d) What are different types prives where draw a neat sketch of aqua privy and explain its working.

e) With the help of neat sketch explain working of spetic tank and state advantages and disadvantages of spetic tank.

SLR-JC-33

Seat No.	

Set P

B. Architecture (Semester - VI) (New) (CBCS) Examination: March/April-2024
Theory of Structure-VI (21AR6-03)

Day & Date: Wednesday, 22-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Use of scientific calculator is allowed.
2) All questions are compulsory.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.
5) IS 456:2000 and IS 3370 allowed.

Q.1 Fill in the blanks from the option given below. **07**

1) A pile transfers load majorly by the action of _____.
a) Fixity b) Friction
c) Compression d) All of the above

2) The retaining walls are constructed to retain _____.
a) Water b) Earth
c) Fluid d) Gas

3) The Indian standard code used for the design of water retaining structures is _____.
a) IS 3370 b) IS 456
c) IS 800 d) IS 875

4) As per IS 456:2000 Nominal cover for footing is _____.
a) 40mm b) 50mm
c) 25mm d) 70mm

5) The minimum thickness for base slab of retaining wall is _____.
a) 300mm b) 150mm
c) 450mm d) None of these

6) The water retaining structure must be _____.
a) Leak proof b) Crack proof
c) Both (a) and (b) d) None of these

7) Combined footing is provided when, _____.
a) One of the dimensions of the Footing is restricted to some lower value
b) The distance between two columns is small
c) The S.B.C. of soil is low
d) All of these

Q.2 Solve any Three of the following. **15**

a) What do you mean by raft foundation? Also classify its types.

b) State design steps of water tanks by IS code method.

c) An RCC column of multi-storeyed building transfers following service loads on the pile cap of pile foundation. Propose the arrangement of pile and determine the loads on the piles. The service loads are:

P = 1600 kN

Mx = 400 kNm about major axis

Column size = 400mm × 600mm

d) State Preliminary proportioning of retaining wall.

Q.3 Solve any three of the following. **48**

a) What are pile foundations? Give its detailed classification with neat sketches.

b) Determine the plan dimensions of a combined footing for two axially loaded columns with following data if

1) width is not restricted
2) width is restricted to 2.5m

Columns	C1	C2
Type	Interior	Interior
Size	400mm × 400mm	400mm × 400mm
P	1000kN	1200kN
Spacing	3 m c/c from C1 to C2	
SBC	150kN/m^2	

c) Design a retaining wall to retain the earth 4m high. The top surface is horizontal behind the wall. The soil behind the wall is well drained medium dense sand with following properties:
Unit weight = 17 kN /m^3
Angle of internal friction = 30^0
The material under the wall is the same as above with S.B.C. of 150 kN /m^2.
The coefficient of friction between base and soil is 0.55. Design the wall using M20 grade concrete and Fe415 grade steel.

d) Design a circular water tank with flexible base and open at top for a capacity of 600000 liters resting on ground. The materials are M30 grade concrete and HYSD reinforcement of grade Fe415.

SLR-JC-34

Seat No.	

Set P

B. Architecture (Semester - VI) (New) (CBCS) Examination: March/April-2024
Urban planning (21AR6-05)

Day & Date: Friday, 24-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Fill in the blanks. **07**

1) In Greek _____ a market place situated at the Centre of the town.
a) Forum b) Agora
c) Acropolis d) Open space

2) _____ is an example of Sumerian city.
a) City of Ur b) City of Babylon
c) El kahun d) Both a & b

3) The population of Basic Village is _____.
a) 400-500 b) 100-200
c) 1000-2000 d) 50-100

4) In 1903 the first garden city of _____ was started around 35 miles away from London.
a) Letchworth b) Paris
c) America d) Welwyn

5) A ventilating device known as _____ system was used on the roof of Egyptian Civilization.
a) Mulguf b) Ventilator
c) Window d) Opening

6) Gandhinagar is situated on the bank of river _____.
a) Sabarmati river b) Ganga river
c) Yamuna river d) Nile river

7) New Delhi was planned by eminent town planner _____.
a) Sir Edwin Lutyens, Sir Herbet baker
b) Ar. Charles Correa
c) Sir Ebenezer Howard
d) Sir Patrick Geddes

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

a) Stages in town development derived by Lewis Mumford.
b) Characteristics of Roman civilizations with an example.
c) Distribution of Land uses.
d) Sir Patric Geddes

Q.3 Mention various types of town plans with neat sketches described in the book ‘Mansara Shipa-shastra’ (Ancient Indian Vedic Civilization). **12**

Q.4	Describe internal spatial structure of the city. Explain concentric zone theory, Sector theory and multiple nuclei theory with appropriate examples and sketches.	**12**
Q.5	Explain with neat sketches the Urban planning of Chandigarh.	**12**
Q.6	What is the importance and objectives and requirements of Urban roads and how are they classified.	**12**
Q.7	What is the impact of Industrial Revolution on planning? Explain with examples.	**12**

SLR-JC-35

Seat No.	

Set P

B. Architecture (Semester - VI) (New)(CBCS)
Examination: March/April – 2024
Estimating Specifications & Costing - I (21AR6-06)

Day & Date: Monday, 27-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Use of scientific calculator is allowed.
2) All questions are compulsory.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.

Q.1 Choose the correct alternative from the following options. **08**

1) While preparing Abstract sheet the contingencies charges added _____% of Total amount.
a) 3-5 b) 7-10
c) 1-2 d) 3-8

2) Quantity of sand required for 10Cum of brickwork in CM (1:6) is _____.
a) 1.7 Cum b) 2.7 Cum
c) 3.7 Cum d) 4.7 Cum

3) Unit of Reinforcement is _____.
a) Kg or Metric Ton b) Meter
c) Cubic Meter d) Numbers

4) Unit of Railing is _____.
a) Square Meter b) Running Meter
c) Cubic Meter d) Numbers

Q.2 Solve any two of the following. **12**

a) Enlist types of estimates.
b) The cost of construction of a college building is 3 crores for a capacity of 600 students and area of construction is about 2500 m^2. Prepare approximate estimate of a newly proposed college building for 3500 students with the area 14000 m^2. Use plinth area method.
c) State factors affecting process of rate of analysis.

Q.3 Calculate quantity of any five - 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 in soft murum in foundation.
b) PCC bed in foundation (1:4:8)
c) UCR masonry in foundation and plinth in CM (1:6)
d) DPC in cement concrete
e) Mosaic tiled flooring in all rooms
f) B.B.M. masonry in superstructure in CM (1:6)

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

a) Excavation in soft murum in foundation, Rs 500/- per cum
b) PCC bed in foundation (1:4:8), Rs. 5600/-per cum
c) UCR masonry in foundation and plinth in CM (1:6), Rs. 3700/-per cum
d) DPC in cement concrete, Rs. 800/- per sq. m
e) Mosaic tiled flooring in all rooms, Rs. 1685/- per sq.m
f) B.B.M. masonry in superstructure in CM (1:6), Rs. 4700/-per cum

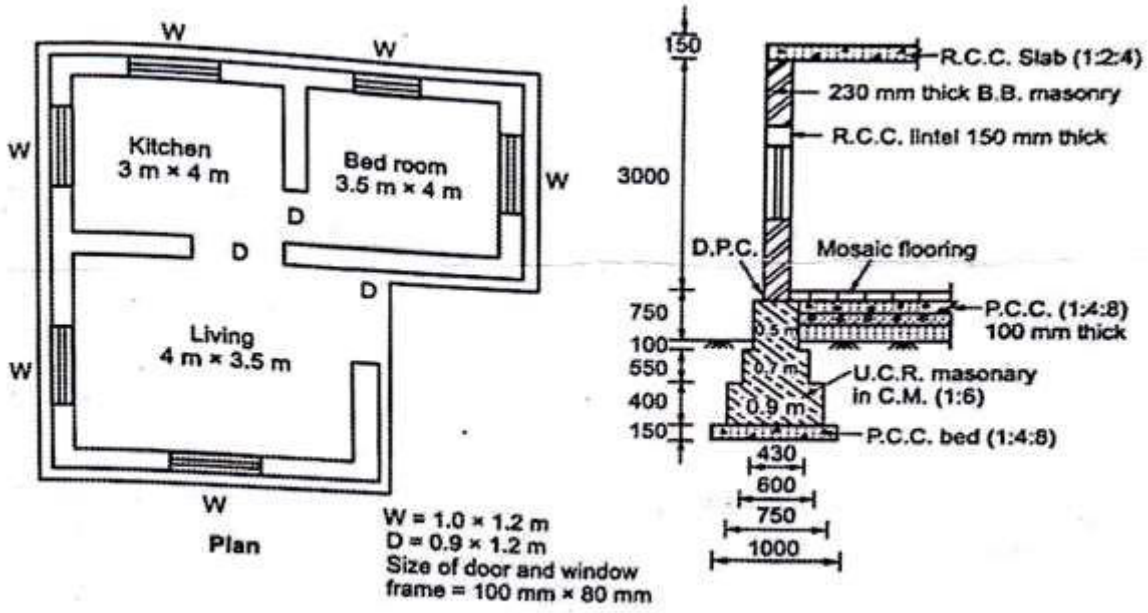


fig.1

SLR-JC-36

Seat No.	

Set P

B. Architecture (Semester - VI) (Old) (CBCS) Examination: March/April-2024
Estimating Specifications & Costing – I (7023602)

Day & Date: Monday, 20-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks
3) Assume suitable data, if necessary
4) Use of non-programmable calculator is allowed.

Q.1 Choose the correct option. **08**

1) Mode of measurement For DPC is _____.
a) Square meter b) Cubic meter
c) Running meter d) Nos

2) Mode of measurement For 10 cm thick brickwork _____.
a) Square meter b) Cubic meter
c) Running meter d) Nos

3) IS1200 PART IV is related to measurement of _____.
a) Formwork b) Brick masonry
c) Stone masonry d) Plastering

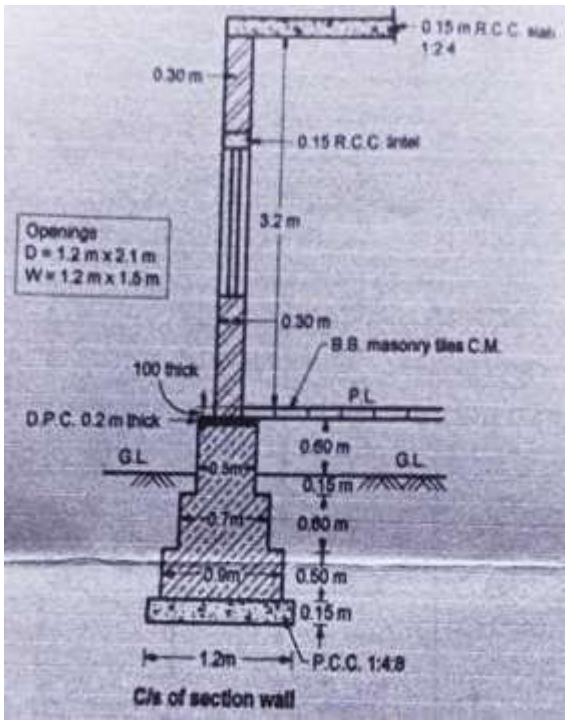
4) Flooring is measured in _____.
a) Square meter b) Cubic meter
c) Running meter d) Nos

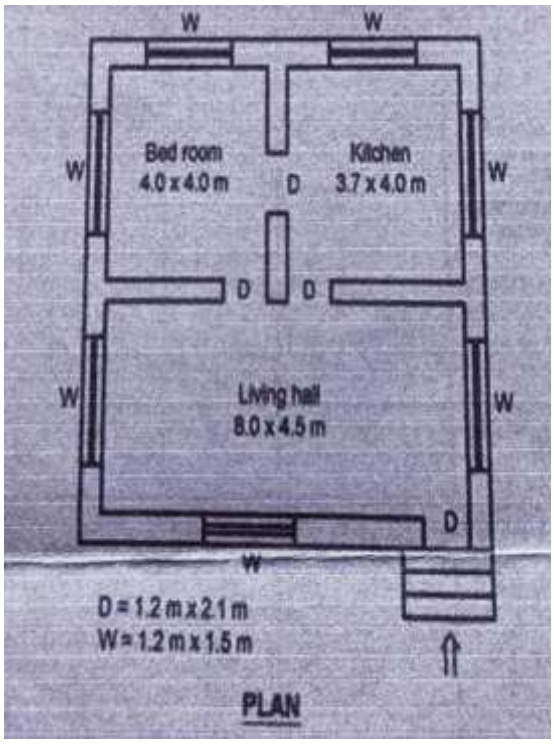
Q.2 Answer Any Two of the following questions. **12**

a) Differentiate between Revised and Supplementary estimate.
b) Calculate the quantity of Coarse Aggregate, Cement and Sand required for PCC of grade M 20.
c) Enlist Different methods of approximate estimation, explain any one in detail.

Q.3 Workout quantities of the following items of work. **35**

a) Earthwork in excavation
b) P.C.C. in foundation bed
c) U.C.R. masonry in foundation and plinth
d) Brick masonry
e) Internal plaster
f) Internal flooring
g) Doors and windows





Q.4 Prepare Abstract sheet for following quantities. **15**

a) Earthwork in excavation
b) P.C.C. in foundation bed
c) U.C.R. masonry in foundation and plinth
d) Brick masonry
e) Internal plaster
f) Internal flooring.
g) Doors and windows

SLR-JC-37

Seat No.	

Set P

B. Architecture (Semester - VI) (Old) (CBCS) Examination: March/April-2024
Theory of Structure – VI (7023601)

Day & Date: Wednesday, 22-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Use of scientific calculator and IS 456-2000 is allowed.
2) All questions are compulsory.
3) Figures to the right indicates full marks.
4) Assume suitable data, if necessary.

Q.1 Choose the correct answer. **07**

1) The partial safety factor for concrete as per IS 456-2000 is _____.
a) 1.5 b) 1.15
c) 0.87 d) 0.466

2) The characteristic strength of concrete is measured at _____.
a) 14 days b) 28 days
c) 91 days d) 7 days

3) In a singly reinforced beam, if the stress in concrete reaches its allowable limit earlier than the steel reaches its permissible limit, the beam section is called _____.
a) Critical b) Under reinforced
c) Over reinforced d) Economic

4) For a simply supported beam, the ratio of the span of the beam to its effective depth should not exceed _____.
a) 10 b) 20
c) 26 d) 7

5) The minimum percentage of steel in RCC slabs using mild steel reinforcement is given by _____.
a) 0.35 % b) 0.12 %
c) 0.15 % d) 0.30 %

6) A column is regarded as long column if the ratio of its effective length and lateral dimension exceeds _____.
a) 20 b) 25
c) 15 d) 12

7) The weight of a foundation is assumed as which of the following?
a) 5% of the load above b) 15% of the load above
c) 10% of the load above d) 12% of the load above

Q.2 Solve any Three of the following. **15**

a) Write a note on assumptions made in analysis and design of flexural member.
b) Define characteristic load and characteristic strength.
c) Differentiate between limit state and working stress methods of design.
d) Write a note on effective length of column.

Q.3 Solve the following (Any Four) **48**

a) Design simply supported two way slab for a room of 4m × 5m with 230 mm thick wall. Assume live load of 3.5 KN/m2 and floor finish of 1.1 KN/m2. Use M20 grade of concrete and Fe415 steel.

b) Design simply supported slab for a hall of 3.2m × 7.0m with 230mm thick wall. Assume live load of 3.5KN/m2 and floor finish of 1.2 KN/m2. Use M20 grade of concrete and Fe415 steel.

c) A simply supported beam of length 4.5m is carrying UDL of 32 KN/m inclusive of self-weight, Analyze and design the beam. Use M20 grade of concrete and Fe415 steel.

d) Design a rectangular column of 4.8m unsupported length, restrained in position and direction at both ends to carry an axial load of 1200KN. Use M20 grade of concrete and Fe415 steel.

e) Design footing to carry 750KN load. Take safe bearing capacity of soil as 180KN/m2. Use M20 grade of concrete and Fe415 steel.

SLR-JC-38

Seat No.	

Set P

B. Architecture (Semester - VI) (Old) (CBCS) Examination: March/April-2024
Urban Planning (7023604)

Day & Date: Friday, 24-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Fill in the blanks. **07**

1) Letchworth and Welwyn are the examples of _____.
a) Garden City b) industrial town
c) satellite town d) natural growth

2) The capital city of _____ was planned by two Indian planners H.K. Mewada Prakash M. Apte.
a) New Delhi b) Punjab ,
c) Jaipur d) Gandhi Nagar

3) Chandigarh city is divided into ____sectors.
a) 7 sectors b) 4 sectors
c) 47 sectors d) 27 sectors

4) _____ proposed the concept of Garden city.
a) Sir Ebenezer Howard b) Sir Patrick Geddes
c) Le-Corbusier d) C.A Doxiadis

5) C.A Doxiadis advocated theory of _____.
a) Ekistics b) ribbon development
c) plan viosin d) broad acre

6) _____ is an independent housing unit with separate facilities for living, cooking and sanitary requirements.
a) Tenement b) semi-detached house
c) Chawl d) Row house

7) _____ defines the uses to which various parts of the town will be put.
a) Use zoning b) Height zoning
c) Density zoning d) Zoning power

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

a) Garden cities
b) Ebenezer Howard
c) Rectangular street pattern
d) Height zoning

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

a) Write a note on concept of Neighbourhood Planning.

b) Explain in brief the urban planning idea of Gandhinagar.

c) What are the main objectives of traffic management?

d) Explain the concept growth of towns and mention the six stages in town development are suggested by Lewis Mumford.

e) What is importance and objectives of urban roads and how are urban roads classified?

SLR-JC-39

Seat No.	

Set P

B. Architecture (Semester - VI) (Old) (CBCS)
Examination: March/April-2024
Building Services - IV (7023603)

Day & Date: Monday, 27-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Fill in the Blanks. **07**

a) _____ It involves decomposition of organic wastes by microbes by allowing the waste to stay accumulated in a pit for a long period of time.

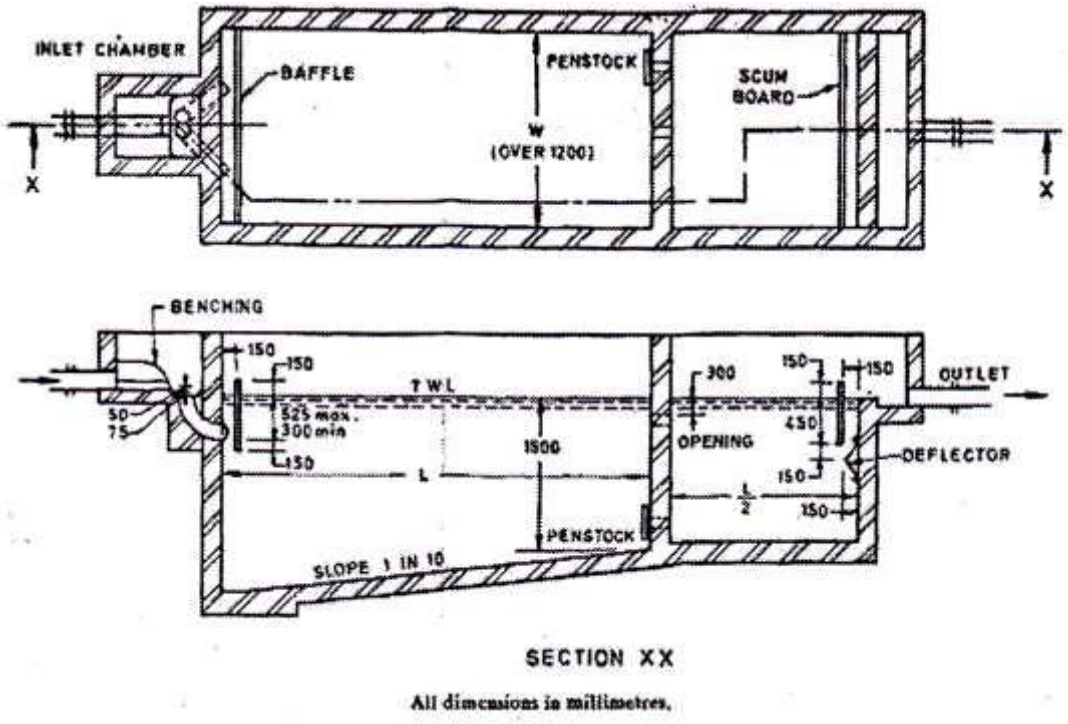
b) _____ or latrines are constructed so as to dispose off the human excreta without water carriage system/ conservancy system.

c) Bod indicates _____ is the amount of oxygen consumed by the micro-organisms for biochemical oxidation of the decomposable matter at specific temperature within the specific time.

d) A _____ system is a network of pipes, pumping stations, and appurtenances that convey sewage from its points of origin to a point of treatment and disposal.

e) In _____ system both domestic sewage and storm water collected together.

f) identify the following



SECTION XX

All dimensions in millimetres.

g) A _____ is an inclined channel in the tall building, in which refuse can be passed down from the opening of each floor to the central refuse room on the ground floor of a building.

Q.2 Write Short Notes on the following. (Any Three) **15**

a) Pit privy.
b) Natural methods of sewage disposal.
c) Incineration
d) Separate system of sewerage.

Q.3 Answer the following in detail. (Any Four) -12 Marks Each **48**

1) a) Draw a layout and flow diagram of Sewage Treatment Plant? State the functions of each unit.? **12**

2) a) Sketch and explain Imhoff tank? **06**
b) Discuss about Bio *Gas Plant?* **06**

3) a) Explain impact of solid waste on environment? **06**
b) Explain the following methods of collection of municipal solid waste - curb system and alley system. **06**

4) a) Define Solid Waste and what it includes? State the sources of solid waste. **06**
b) Define and explain the term composting and vermicomposting. **06**

5) a) Define Hazardous Waste? explain its characteristics. **06**
b) How waste water is generated? List the steps of typical wastewater treatment? **06**

SLR-JC-42

Seat No.	

Set P

B. Architecture (Semester – VI) (Old) (CBCS) Examination: March/April-2024
Building by laws (7023611)

Day & Date: Wednesday, 29-05-2024 Max. Marks: 50
Time: 10:00 AM To 01:00 PM

Instructions: 1) Question No 1 & No 2 are compulsory.
2) Write any three questions from remaining four questions.
3) Make suitable assumptions wherever necessary.

Q.1 Choose the correct options. **05**

1) Minimum width of habitable room is _____m.
   a) 3 b) 1.8
   c) 2.1 d) 2.4

2) Balcony permitted at first floor is not more than ____% of built-up of same floor area.
   a) 15 b) 20
   c) 1.1 d) 10

3) For the building height above _____m fire stair is mandatory.
   a) 16 b) 21
   c) 12 d) 24

4) Height of the stilt is not less than ____m.
   a) 3 b) 2.4
   c) 2.1 d) 1.8

5) Minimum width of stair case is _____m for residential building.
   a) 1.2 b) 1.6
   c) 0.9 d) 1.8

Q.2 Write short notes on: **09**

a) Public / Semi - public Building
b) Mezzanine floor
c) Land-locked Plot

Q.3 **a)** Explain need and requirements of open spaces. **06**
b) Explain commencement certificate and procedure to produce it. **06**

Q.4 Explain site plan and its containts in brief. **12**

Q.5 **a)** Explain INDUSTRIAL ZONE and uses permissible in industrial zone. **06**
b) Explain INTERIOR & EXTERIOR CHOWK and how they are used? **06**

Q.6 **a)** What is parking space and what are general space requirement for parking? **06**
b) Explain uses permissible in basement. **06**

SLR-JC-43

Seat No.	

Set P

B. Architecture (Semester - VII) (CBCS) Examination: March/April-2024
Professional Practice - I (7024701)

Day & Date: Thursday, 16-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

Q.1 Choose the correct option. **07**

1) An _____ carries responsibility on account of confidence placed in his judgement and integrity.
a) engineer b) architect
c) contractor d) arbitrators

2) The _____ documents occupy important position not only from the view point of contractors and employers, but also to the architects.
a) tender b) contracts
c) valuation d) building by laws

3) _____ tender is an offer to execute the work based on rates of different item of work.
a) cost rate b) item rate
c) Lump-sum d) none of the above

4) The contractor agrees to carry out the complete _____ work of all the items of the work at the rates quoted by the contractor.
a) labour b) material
c) construction d) all of the above

5) The amount or earnest money varies from _____ of the estimated cost of the project.
a) 3 to 4 % b) 1 to 2%
c) 4 to 5 % d) 0 to 3%

6) Indian contract Act was enacted in the Year _____.
a) 1875 b) 1863
c) 1872 d) 1870

7) The _____ is the National body of Architects in the country.
a) COA b) IIA
c) Both a & b d) Neither a nor b

Q.2 Write Short Notes (Any Three) **15**

a) Earnest money
b) Explain invitation of tender
c) Role of COA
d) Retention amount

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

a) Explain Cost plus percentage and cost-plus fixed fee contract.
b) Mention different types of tender and explain any two in detail.
c) What are the owner's expectation from architect?
d) Describe the Structure of an Architect's office.
e) Explain Lump-sum contract & Item rate contract.

SLR-JC-44

Seat No.	

Set P

B. Architecture (Semester – VII) (CBCS) Examination: March/April - 2024
Theory of Structure - VII (7024702)

Day & Date: Tuesday, 18-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) All question are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Assume suitable data if necessary.

Q.1 Choose the correct answer. **07**

1) Raft foundation is used if _____.
a) SBC of soil is low b) Loads on structure is heavy
c) Both A and B d) None of the above

2) Which of the following type of losses are not developed in post tensioned concrete members?
a) Shrinkage b) Friction
c) Creep d) Relaxation of steel

3) To increase the strength of masonry wall _____ is provided as an earthquake-resisting measure.
a) Rubber band b) Lintel band
c) Plastic band d) Metal band

4) The analysis of _____ includes dividing the slab in column strip and middle strip.
a) Waffle slab b) Ribbed slab
c) Soid slab d) Flat slab

5) The diameter of under reamed bulb in a pile foundation is normally _____ that of the diameter of a pile.
a) 2 times b) 2.5 times
c) 1.5 times d) 3 times

6) The type of structure consisting of curved sheets of metal is termed as _____.
a) Framed structure b) Load bearing structure
c) Shell structure d) Plate structure

7) The types of cranes used in construction of structures are _____.
a) Tower cranes b) Derrick cranes
c) Mobile cranes c) All of the above

Q.2 Write Short Notes (Any Three) **15**

a) Write a note on the classification of piles.
b) What do you mean by flat slab? Explain with neat sketch.
c) Write a note on design procedure of raft foundation.
d) Explain losses developed in prestressed concrete members.

Q.3 Attempt the following Question (Any Four) **48**

a) 1) What do you mean by rigid and portal frames.
2) Explain shell structure.

b) Design a reinforced concrete water tank for a capacity of 30000 litres if the depth of slab is restricted to 3 m. with flexible base. The tank is resting on the firm level ground. The tank is open at top with free board of 200mm. Use M20 concrete and Fe 415 steel.

c) Calculate the stresses at mid span of a beam subjected to 20KN/m udl. The prestressing force is 1500KN passing through an axis at 75 mm below the longitudinal axis of beam. The beam is having width 600mm and depth 800mm. The span of beam is 6m. Also draw stress distribution diagram.

d) Explain in detail gantries and cranes.

e) Write note on earthquake proof design and construction procedure.

SLR-JC-45

Seat No.		Set	P

B. Architecture (Semester - VII) (CBCS) Examination: March/April - 2024
Estimating Specification & Costing- II (7024703)

Day & Date: Tuesday, 21-05-2024 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) All questions are compulsory.
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 option. **07**

1) The administrative head of public works department who is directly responsible to government is _____.
a) Assistant engineer b) Executive engineer
c) Superintending engineer d) Chief engineer

2) When actual cost of construction plus certain profit is paid to the contractor then such a contract is known as _____.
a) Unscheduled contract b) Nominated contract
c) Work order d) Cost plus percentage contract

3) Which of the following is not measured in cubic meter _____?
a) Brick Work b) Concrete work
c) Excavation work d) Pinth

4) EMD is _____.
a) Earlier Material deposit b) Earnest Money deposit
c) Easy Material dumping d) Earlier Money deposit

5) Which of the following is not type of tender?
a) Open Tender b) Closed Tender
c) Local Tender d) Global Tender

6) What is the weight in kg per meter length for 12mm diameter steel bar _____?
a) 1.80 b) 0.80
c) 0.89 d) 1.50

7) Which of the following documents are necessary for sanction of building construction project?
a) Tender document b) Contract
c) Specifications d) All of the above

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

a) Write a note on hook and bend lengths considered in the calculation of steel quantity.
b) What do you mean by tender? Explain with its types.
c) Write a note on item rate and percentage rate contract.
d) Explain brief and detailed specifications.

Q.3 Calculate quantity of any six following item of work and enter the same in standard format of measurement sheet with brief description of item. (Refer figure1) **30**

a) Excavation in foundation
b) Brick masonry work in superstructure
c) Concrete in RCC beam
d) Concrete in RCC slab
e) Internal flooring in all rooms.
f) Internal Sand faced plaster in CM(1:6)
g) Concrete in RCC Footing.

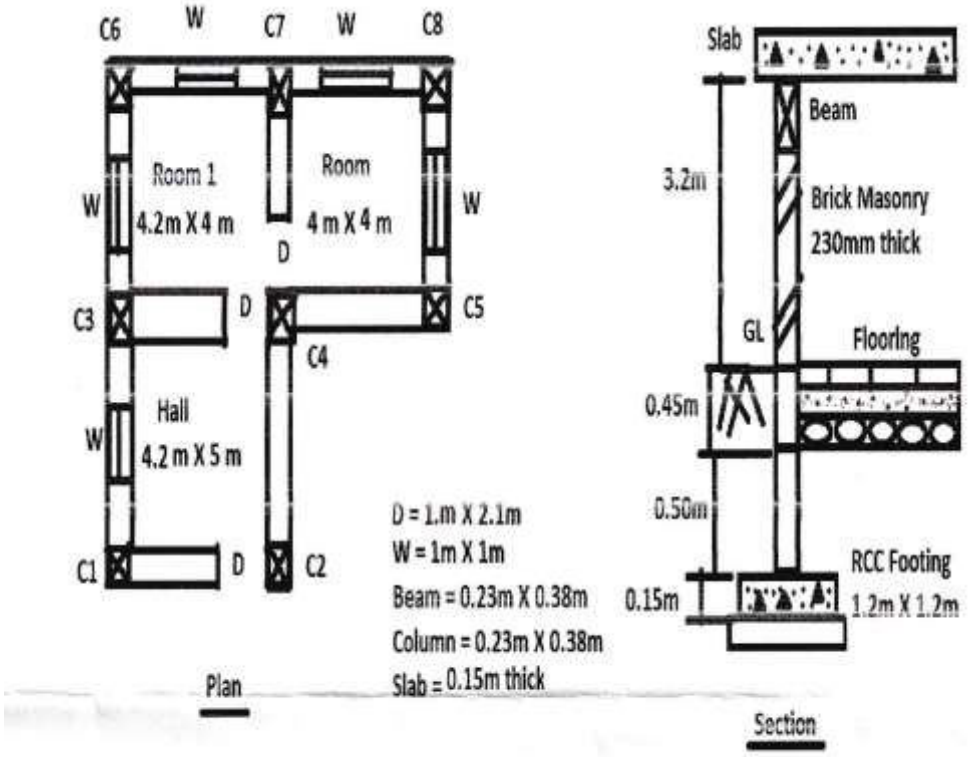


Figure - 1

Q.4 Write specifications of any two items of work from following. **18**

a) Excavation in hard rock
b) First class brick work in CM 1:6 mortar
c) Plastering with CM 1:4

SLR-JC-46

Seat No.		Set	P

B. Architecture (Semester - VIII) (CBCS) Examination: March/April-2024
Prof. Practice - II (7024801)

Day & Date: Wednesday, 15-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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) The _____ is a single document in which, like a network, the information contained in various Indian Standards is woven into a pattern of continuity and cogency with the interdependent requirement of sections carefully analyzed and fitted in to make the whole document a cogent continuous volume.
2) _____ means the quotient obtained by dividing the area covered by P line and the net area of the plot.
3) The land acquisition act was enacted in _____.
4) _____ is a popular form of alternative dispute resolution that is used by many individuals and businesses to resolve disagreements in place of pursuing a lawsuit.
5) NBC stands for _____.
6) _____ is the final decision taken by the arbitrator in written format.
7) The number of assessors in competition are always _____ in number.

Q.2 Write Short Notes (Any Three) **15**

a) Explain in brief about Arbitral Tribunal.
b) Explain the Principles of land acquisition act.
c) Explain in detail about Duties and Responsibilities of an Arbitrator.
d) What are the Shortcomings of Land Acquisition Act.
e) What are continuous and discontinuous easement.

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

a) Differentiate between Mediation, Conciliation and arbitration.
b) Write in brief the necessity of land acquisition and mention the process taken in acquisition under Land Acquisition Act-1894.
c) What is Arbitration? Explain the advantages and disadvantages of settling the disputes by this method.
d) Describe the factors considered for child labour under Labour act.
e) What are the objectives and Guidelines to conducting Architectural Competition.
f) Explain the factors considered for labour under labour act.

SLR-JC-47

Seat No.	

Set P

B. Architecture (Semester - VIII) (CBCS) Examination: March/April - 2024
Project Management (7024802)

Day & Date: Friday, 17-05-2024 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Fill the blanks from the options given below. **07**

1) _____ is denoted by dotted line in a network diagram.
a) Non critical activity b) Dummy activity
c) Critical activity d) Delivery activity

2) The _____ taxes are those, the burden of which can't be shifted to another person.
a) Semi direct b) Direct
c) Indirect d) Nominal

3) _____ is activity-oriented technique.
a) PERT b) CPM
c) WBS d) None from the option

4) In PERT, Standard deviation is calculated by taking _____ of Variance.
a) decimal b) square-root
c) addition d) square

5) The average vertical distance between level of excavation and to the place of spreading or heaping is called _____.
a) Lid b) Lift
c) Lead d) Leaf

6) _____ study is the improvement in performance both in terms of quality and quantity of output by analyzing the body posture, body movement and hand movement.
a) Motion b) Time
c) Sigma d) Cardio

7) Bar chart was introduced by _____ around 1900 AD.
a) Hennery Gantt b) Jenfer Gantt
c) Henry Simon d) Mattews

Q.2 Write short notes (any 3). **15**

a) Differentiate between Time study and Motion study.
b) Milestone chart with its importance.
c) Construction Quality control.
d) Stages of Construction project Programming.

Q.3 Attempt the following questions. (any 4)

a) Explain what do you understand by Material Procurement and factors to be considered for Material Procurement. **12**

b) Explain Construction Site Layout Considerations. **12**

c) Explain use of computers by using software's in Construction Project Management. **12**

d) Define Work Breakdown Structure (WBS) and explain its Purpose and types. Draw Work breakdown structure for a small Bungalow. **12**

e) PERT problem **12**

1) Complete the following table by calculating 'Expected time' and 'Variance'
2) Draw network diagram by calculating Earliest and Latest time.
3) Identify critical path.
4) Calculate expected project duration for critical path.
5) Calculate project length variance for critical path.
6) Calculate project length standard deviation.

Activity	Estimated duration (weeks)			Calculation of 'Expected time' and 'Variance'	
	Optimistic (to)	Most likely (tm)	Pessimistic (tp)	Estimated time (te)= $\frac{to + 4tm + tp}{6}$	$\sigma^2 = \left[\frac{tp - to}{6}\right]^2$
A-B	6	7	8		
A-C	3	5	7		
A-D	4	7	10		
B-E	2	3	4		
C-F	3	4	11		
D-F	4	8	12		
D-G	3	3	9		
F-G	6	6	12		
E-H	5	8	11		
G-H	3	3	9		