SLR-UB-1

Seat No.	

Set P

B. Architecture (Semester - I) (New) (CBCS) Examination: March/April-2023
Building Construction and Material-I (21AR1-02)

Day & Date: Thursday, 27-07-2023 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) All questions are compulsory.
5) Figures to the right indicate full marks.

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

1) Rocks are classified into igneous, sedimentary and _____.
   a) Metamorphic b) Volcanic
   c) Ashlar d) Rough

2) Actual size of the bricks is _____.
   a) 15cmx 6cmx 6cm b) 20cmx 10cm x5cm
   c) 19 cmx9cmx9cm d) 45cm x 25cm x10cm

3) _____ are relatively rigid walls used for supporting soil laterally so that it can be retained at different levels on the two sides.
   a) Compound wall b) Breast wall
   c) Retaining wall d) Partition wall

4) A brick molded with a double bullnose on end is termed as a _____.
   a) Cow Nose b) Closer
   c) Bat d) Winder

5) The lowest artificially prepared parts of the structures which are in direct contact with the ground and which transmit the loads of the structures to the ground are known as the _____.
   a) Foundation b) Basement
   c) Wall d) Door

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

a) Draw plan, elevation and isometric view of header bond, stretcher bond.
b) Draw to scale 1:10 elevation and section of ashlar fine, ashlar rough tooled masonry, ashlar quarry faced, ashlar chamfered.
c) Draw to scale any 3 types of foundation used in building construction.

Q.3 WITH NEAT SKETCHES WRITE SHORT NOTES ON **25**

a) Distinguish between English and Flemish bond
b) Define -Closer, queen closer, king closer.
c) Classification of stone masonry.
d) Any 3 Types of joints in stone masonry.
e) Retaining walls

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

1) The raw material used for manufacturing bricks is _____.
   a) Clay b) Stone
   c) Cement d) Glass

2) The structure of the brick should be _____, compact and free from any defects.
   a) Heterogeneous b) Homogeneous
   c) Granular d) Crystalline

3) The process of taking out stones from natural rock beds id known as _____.
   a) Quarry b) Excavation
   c) Mining d) Blasting

4) The average weight of the brick is about _____.
   a) 40 N-45N b) 30N-35N
   c) 50N-55 N d) 60N-65 N

5) _____ is a paste prepared by adding required quantity of water to a mixture of binding material like cement, lime and fine aggregate like sand.
   a) Mortar b) Plaster
   c) Paint d) Putty

Q.5 ANSWER IN DETAIL (ANY 2) **20**

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

Q.6 WRITE SHORT NOTES ON **15**

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

SLR-UB-2

Seat No.	

Set P

B. Architecture (Semester - I) (New) (CBCS)
Examination: March/April-2023
Theory of Structure - I (21AR1-03)

Day & Date: Friday, 28-07-2023 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

Q.1 Select the correct option from the following. **08**

1) The beam with one end fixed and another end free is called _____.
a) Fixed beam b) Cantilever beam
c) Simple beam d) Free beam

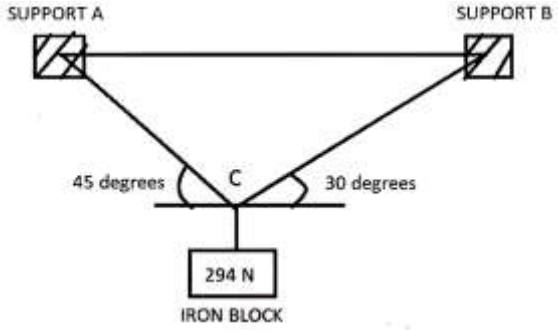
2) Two forces be in equilibrium if they are _____.
a) Equal in magnitude b) Collinear
c) Opposite in direction d) All of the above

3) A truss is called deficient if it has number of members _____ that required for perfect truss.
a) Less than b) Equal to
c) More than d) Can not be decided

4) Dead load of any structure is calculated using.
a) IS 1893 b) IS 875 Part I
c) IS 875 Part II d) IS 875 Part III

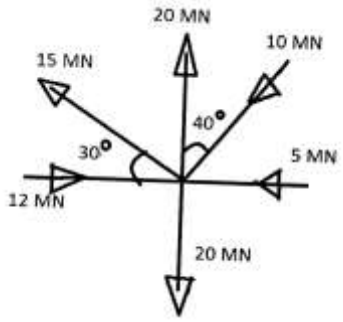
Q.2 Differentiate between Load bearing and Framed structure. **06**

Q.3 **a)** Write a note on Law of parallelogram. **06**
b) An iron block of weight 294 N is hanging from two supports A and B as shown in fig. Determine the tension developed in both the ropes. **08**



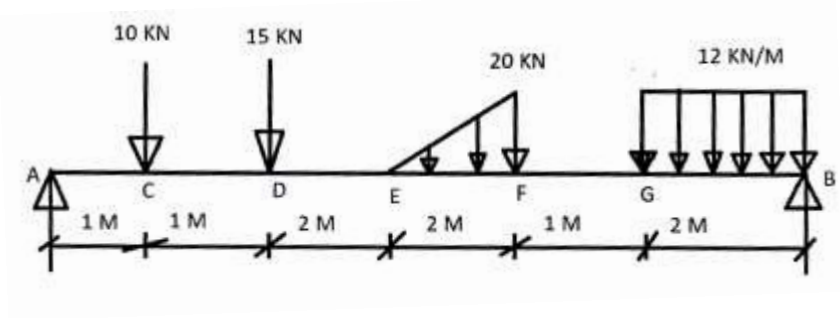
Q.4 **a)** Write a note on system of forces. **06**

b) Find the resultant in magnitude and direction for the force system as shown in fig. below. **08**



Q.5 **a)** Write a note on types of support. **06**

b) Find the support reactions for the beam as shown in fig. below. **08**



Q.6 **a)** Write a note on Varignon's theorem. **04**

b) Explain triangular law and polygonal law of finding resultant by graphical method. Explain with example. **10**

Q.7 **a)** What do you mean by Deficient, Perfect and Redundant frame. Explain with example. **06**

b) Write a note on types of loads acting on structure. **08**

SLR-UB-3

Seat No.	

Set P

B. Architecture (Semester – I) (New) (CBCS) Examination: March/April-2023
Human Settlement Planning (21AR1-04)

Day & Date: Monday, 31-07-2023 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 Choose the Correct Option? **07**

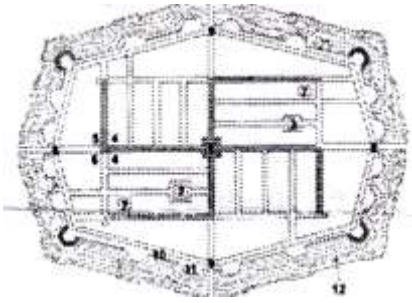
1) Which one of the following types of economic activities dominates in all rural settlements?
a) Primary b) Secondary
c) Tertiary d) None

2) Which is the most ancient town In India?
a) Hyderabad b) Agra
c) Chennai d) Varanasi

3) In which state are Ajanta and Ellora caves located?
a) Orissa b) Andhra Pradesh
c) Gujrat d) Maharashtra

4) Greece is located on a _____ which means land surrounded by water on three sides.
a) Island b) Peninsula
c) Polis d) Acropolis

5) Identify the following town planning pattern –



a) Padmaka b) Karmukha
c) Prastara d) Swastika

6) The city of Rome located in the continent of _____.
a) Europe b) Asia
c) America d) Africa

7) These rivers are called the cradles of the Chinese civilization _____.
a) Tigris And Euphrates b) Nile And Kangera
c) Shinano And Tone d) Yangtze And Hwang

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

1) Nalanda university
2) Indus valley drainage system
3) Egypt - Gift of river Nile
4) Man as a social animal

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

a) i) Agriculture - Discuss the basis of civilization.
ii) Discuss salient features of Roman Town - Timgad city.

b) Briefly explain geography of Greece.

c) What is meant by Industrial revolution? Explain its effects.

d) What are the characteristic features of rural settlement? Sketch and describe following Patterns of rural settlement -
i) Dispersed Settlements
ii) Compact Settlements

e) Sketch and explain earliest cave settlements in India - Ajanta and Ellora.

SLR-UB-4

Seat No.	

Set P

B. Architecture (Semester –II) (New) (CBCS) Examination: March/April-2023
History of Architecture – I (21AR2-04)

Day & Date: Thursday, 27-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) All questions are compulsory.
2) Draw neat illustrative sketches to support answer wherever necessary.

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

a) _____ civilization is known as the first civilization in the world.
b) _____ was placed at the entrance gates & it originated in Assyrian Civilization.
c) _____ is known as the liquid spine of Egyptian Civilization.
d) Prehistoric house with Entrance room, Living room & Storage Room is known as _____.
e) _____ planning system is implemented in Mauryan capital of Pataliputra.
f) Papyrus capital is an architectural element of _____ civilization.
g) _____ was one of the Ancient seven wonders of the world built by King Nebuchadnezzar for his Persian Wife.

Q.2 **Explain the terms: (Any3)** **15**

a) Dolmen & Menhir
b) Sphinx
c) Torana
d) Hypostyle Hall

Q.3 Describe the evolution & stages of Tomb Architecture in the ancient Egyptian Civilization. **12**

OR

Describe the evolution & stages of Buddhist Architecture in detail.

Q.4 **Answer the following :(Any Two)** **24**

a) Describe and discuss architectural characteristics of the Achaemenid Empire with an example.
b) Describe and discuss architecture of the Temple of Khons at Karnak.
c) Discuss in detail the symbolism & architecture of Stone Henge.
d) Discuss in detail the influence, exchange & relation between Hellenistic Architecture & Buddhist architecture.

Q.5 Describe in detail the complex of Great Pyramid of Giza with necessary Plans, sections. **12**

OR

Describe in detail the city of Khorsabad & architectural characteristics of Palace of Sargon

SLR-UB-5

Seat No.	

Set P

B. Architecture (Semester - II) (New) (CBCS) Examination: March/April-2023
Theory of Structure - II (21AR2-03)

Day & Date: Friday, 28-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Use of scientific calculator is allowed.
2) Q.No.1 and Q.No.2 are compulsory. Form remaining Questions solve any four.
3) Figures to the right indicate full marks.
4) Assume suitable date if necessary.

Q.1 Select the correct option for the following. **08**

1) If the material undergoes considerable deformation with rupture Then it's _____ Material.
a) Brittle b) Ductile
c) Plastic d) Elastic

2) Unit for Volumetric Strain is _____.
a) mm b) N
c) Untiless d) None of these

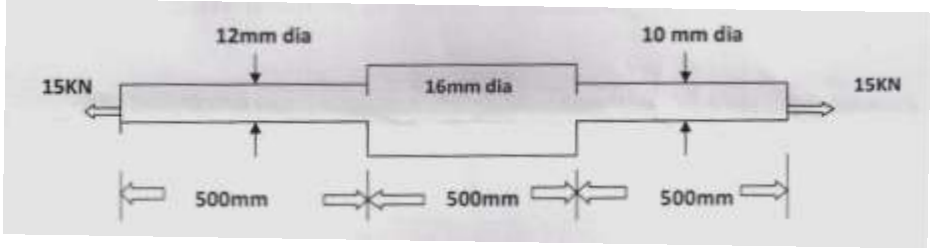
3) The property of undergoing deformation with rupture is known as _____.
a) Melleability b) Ductility
c) Plasticity d) None of these

4) Maximum Bending Moment for Simply Supported Beams Carrying UDL 'W' Over its entire span 'L' _____.
a) $WL^2/8$ b) $WL^2/4$
c) WL d) $WL/8$

Q.2 Explain Stress Vs Strain Graph. **06**

Q.3 a) Explain following terms: **06**
i) Centre of Gravity
ii) Hooke's Law
iii) Behavior of Brittle Material under Tension.

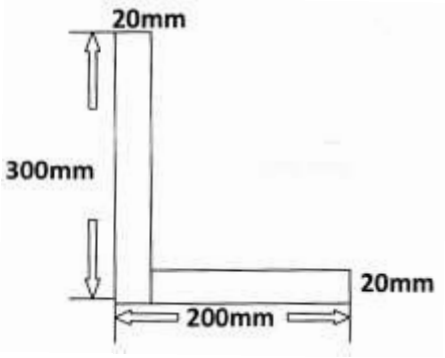
b) Determine total elongation and stresses developed in bar as Shown in figure. Take E=200 Gpa **08**



Q.4 a) Explain in detail stress-strain graph. **06**
b) In a tensile test, a piece of 40mm diameter, 400mm length stretched To 0.2mm under pull of 80 KN. If modulus of rigidity is 0.832×10^5 N/mm^2.Find E, K and poisons ratio. **08**

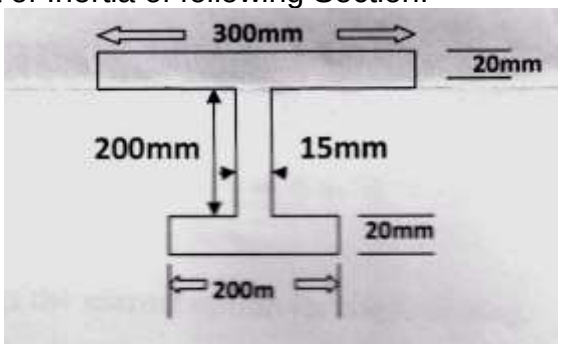
Q.5 **a)** A simply supported beam is having 8m Span. lt is carrying UDL of 30 KN/m over its entire span. It is also subjected to point loads of 30 KN, 50KN and 80KN at 2m, 3m & 6m respectively. Draw SFD And BMD. **14**

Q.6 **a)** Calculate the Moment of Intertia of following section: **10**



b) State and Explain parallel axis theorem. **04**

Q.7 **a)** Calculate Moment of Inertia of following Section. **14**



SLR-UB-6

Seat No.	

Set P

B. Architecture (Semester - II) (New) (CBCS) Examination: March/April-2023
Architectural Graphics and Drawing – II (21AR2-05)

Day & Date: Monday, 31-07-2023 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.

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 (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. **05**

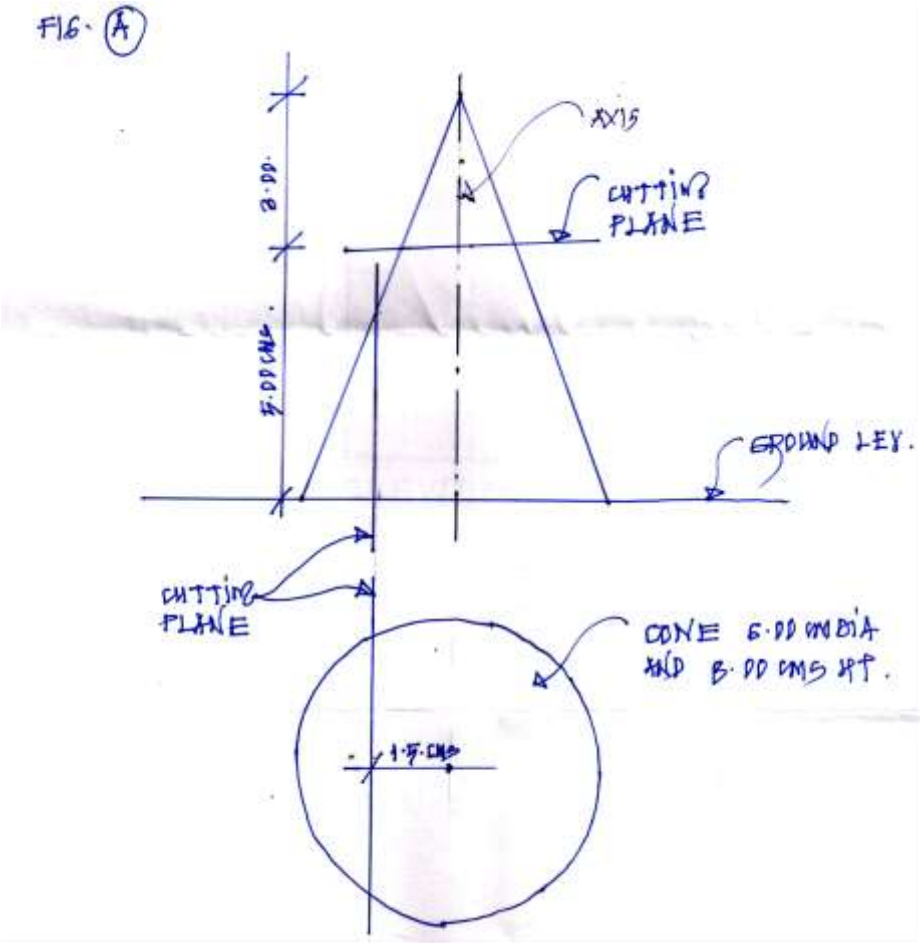
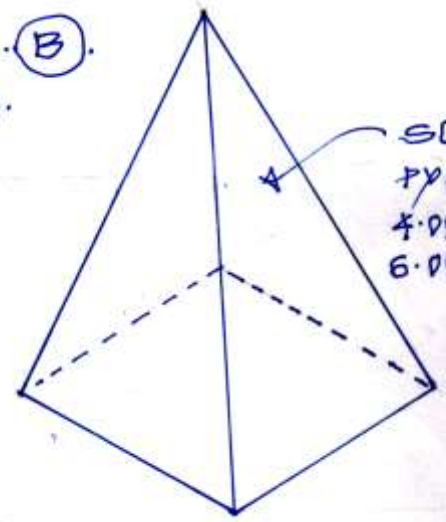


FIG. (B).

1.



2.

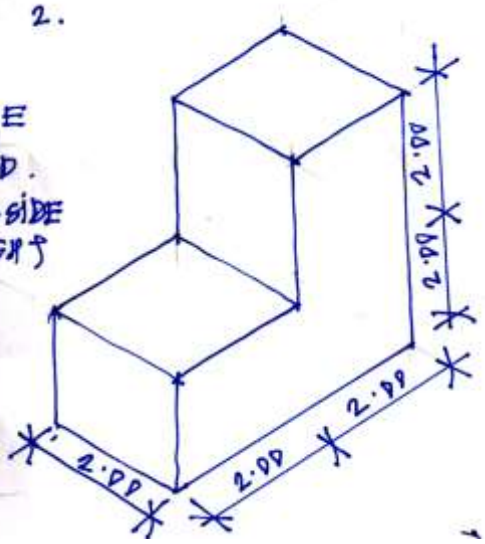
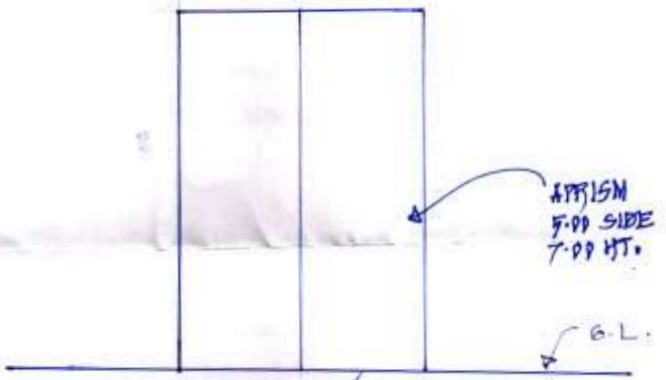
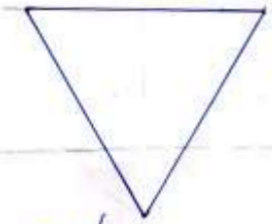


FIG. (C)



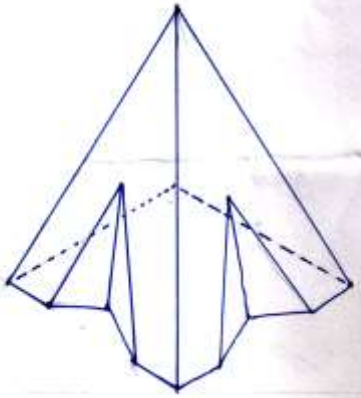
ELEVATION



PLAN.

FIG. D.

1



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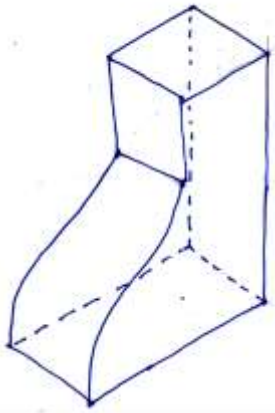


SLR-UB-7

Seat No.	

Set P

B. Architecture (Semester - II) (New) (CBCS) Examination: March/April-2023
Building Construction and Material - II (21AR2-02)

Day & Date: Sunday, 30-07-2023 Max. Marks: 100
Time: 02:00 PM To 06:00 PM

Instructions: 1) All questions are compulsory.
2) Write question number correctly.
3) Draw neat sketches wherever necessary.
4) Q.no-2 has to be compulsorily drafted on sheets provided by the university.

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

1) _____ is a highest central wedge-shaped block of an arch.
a) Span b) Rise
c) Key stone d) spandrel

2) _____ is the vertical member which is fixed between string and handrail to give support to the handrail.
a) Baluster b) Tread
c) Rise d) Waist slab

3) _____ are the wooden pieces which are placed horizontally on principal rafter to carry the common rafters.
a) Cleats b) Rafters
c) Purlins d) Eaves

4) _____ is a vertical member which is employed to sub divide a window opening vertically.
a) Rail b) Transom
c) Mullion d) Style

5) _____ is a horizontal structure supporting member which is provided over opening to support the weight of the super imposed masonry.
a) Lintel b) Chajja
c) Porch d) Portico

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

a) Draw plan, elevation, section and minimum 2 details of ledged and battened door for a suitable span, use appropriate scale.
b) Draw to appropriate scale a plan and section of staircase, label its parts.
c) Draw any 5 different types of arches and mention their applications.

Q.3 WITH NEAT SKETCHES WRITE SHORT NOTES ON **25**

a) Differentiate between arches and lintel.
b) Define- Mullion, Transom. Frame, Shutter, Hold Fast
c) Define - Tread, Riser, Baluster, Waist Slab, Headroom
d) Differentiate between flat roof and pitched roof.
e) Define Eaves, Battens, Hip, Rafter, Purlins.

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

1) The heating of lime to redness in contact with air is known as _____.
   a) Calcination b) Slaking
   c) Drying d) Plastering

2) The product obtained by slaking of quick lime is known as _____.
   a) Fat lime b) Hydrate of lime
   c) Lime mortar d) Lime paste

3) A paste prepared by adding required quantity of water to a mixture of binding material and aggregate is known as _____.
   a) Slurry b) Paint
   c) Plaster d) Mortar

4) The proportion of lime mortar selected for plaster works is _____.
   a) 1:2 b) 1:4
   c) 1:6 d) 1:1

5) _____ sand is mainly used for plastering.
   a) Fine b) Coarse
   c) Rough d) All of these

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

a) Define lime mortar and write the uses of lime mortar in construction.
b) Compare between fat lime and hydraulic lime.
c) Mention the properties of good sand.

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

a) Uses of lime
b) Preparation of hydraulic lime
c) Classification of sand

SLR-UB-8

Seat No.	

Set P

B. Architecture (Semester - III) (New)(CBCS) Examination: March/April-2023
Building Construction and Material - III

Day & Date: Saturday, 15-07-2023 Max. Marks: 100
Time: 02:00 PM To 06:00 PM

Instructions: 1) Write question number correctly.
2) Figures to the right indicate full marks.
3) Draw neat sketches wherever necessary.
4) Q.no-2 has to be compulsorily drafted on sheets provided by the university.

Q.1 Fill in the Blanks. **05**

a) The horizontal platform between two flights of a stair is known as _____.
b) The inclination of sides of a roof to the horizontal plane is known as _____.
c) _____ type of flooring is preferable for dance studio.
d) _____ wall is constructed to retain the artificial filling.
e) _____ structure comprises of slabs resting on beams supported by a network of columns.

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

a) Draw to scale plan, sectional elevation of king post truss for span of 6.0 mtr. Draw details of joints at ends and ridge.
b) Design a staircase for a residential building, the height of the floor is 3.30 meter with a slab of 150 mm thickness. You are free to choose any material draw plan, sectional elevation.
c) With neat sketch, show the construction details of timber flooring, tile flooring.

Q.3 With neat sketches write Short Notes. (Any 5) **25**

a) Any one method of waterproofing for flat roof.
b) Define - headroom, nosing, riser, tread, waist slab.
c) Distinguish between load bearing and framed structure.
d) Define flooring, skirting, dadoing, with a neat sectional sketch.
e) Define eaves, battens, hip, rafter, purlins.

Q.4 Fill in the Blanks. **05**

a) _____ indicates a paste prepared by adding a required quantity of water to a mixture of binding material and fine aggregate.
b) _____ material is used as waterproof layer, constructing roads etc.
c) The cast iron contains carbon from _____ to _____ percent.
d) _____ is also known as mineral tar.
e) An _____ may be defined as a solid naturally occurring mineral aggregate, of economic interest from which one or more valuable constituents may be recovered by certain treatment.

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

a) Define mortar and write the uses of mortar in construction.

b) Enumerate any 5 market forms of steel.

c) Give a list of materials which are commonly used as floorings and give a brief description of stone flooring and mud flooring.

Q.6 Write short notes. (Any 3) **15**

a) Cement mortar

b) Gypsum and its advantages over other materials

c) Uses of steel

SLR-UB-9

Seat No.	

Set P

B. Architecture (Semester – III) (New)(CBCS) Examination: March/April-2023
Theory of Structure – III (21AR3-03)

Day & Date: Sunday, 16-07-2023 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) Q.1 and Q.2 are compulsory. Attempt any four from remaining.

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

1) For fixed beams, Ratio of Area of Bending moment diagram due to vertical loads to Area of Bending moment diagram due to end moments is _____.
a) 1 **b)** 2
c) $1/2$ **d)** $1/3$

2) For a continuous beam ABC with fixed support at A and hinge at C, Zero span is considered at _____.
a) Right side of A **b)** Left side of A
c) Right side of C **d)** Left side of C

3) Bending stress on Neutral axis of the beam is _____.
a) Zero **b)** Maximum
c) Minimum **d)** Infinity

4) Ratio of maximum shear stress to average shear stress for circular section is _____.
a) 1 **b)** $2/3$
c) $4/3$ **d)** $3/2$

Q.2 Write the importance of soil mechanics. **06**

Q.3 **a)** Write fixed end moments of fixed beam for different loading conditions. **04**
b) Draw shear stress distribution along of beam for L section with 75 x 12mm in flange and 100 x 15 mm in web carrying 60kN shear force. **10**

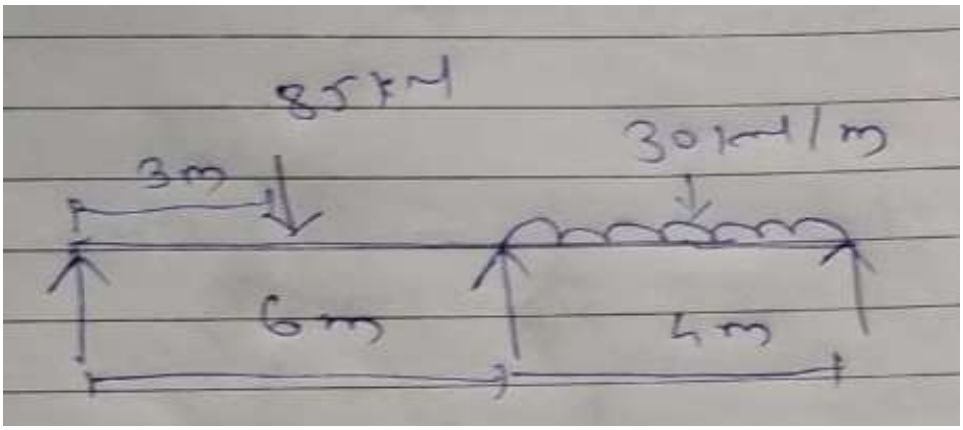
Q.4 **a)** Explain Clapeyron's theorem of three Moments. **04**
b) A cantilever is 2 m long and is subjected to an ud1 of 5 kN/m. The c/s of a cantilever is I-section as shown in Fig. Determine the maximum tensile and compressive stress developed and their position, showing stress distribution diagram. **10**

Q.5 At a point in a strained material the principal stresses are 100N/ mm2 (tensile) and 60 N/mm2 (compressive). Determine the normal stress, shear stress and resultant stress on a plane included at 50° to the axis major principal stress **14**

Q.6 **a)** **Write a short note on:-** **08**
1) Major principal stress
2) Minor principal stress
3) Maximum shear stress
4) Effect of continuity on continuous beam

b) Write down the procedure to find Normal stress, Shear stress and Resultant stress on oblique plane by using Mohr's circle method. **06**

Q.7 Draw SFD and BMD for given continuous beam ABC of uniform flexural rigidity Simple support at A,B &C. 1(AB)=6m, 1(BC=4m) Poin load 85 KN acts at centre of span AB, ud1=30 KN /m throughout span BC. **14**



SLR-UB-10

Seat No.	

Set P

B. Architecture (Semester – III) (New) (CBCS) Examination: March/April-2023
History of Architecture- II (21AR3-04)

Day & Date: Monday, 17-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) All questions are compulsory.
2) Draw neat sketches wherever necessary.
3) Q.1 and Q.2 are compulsory. From remaining questions solve any four.
4) Figures to the right indicate full marks.
5) Assume suitable data if necessary.

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

1) What type of building is the Colosseum?
a) Circus b) An Amphitheater
c) Temple d) Public Baths

2) The _____ Temple in Hampi has 56 Musical Pillars also known as the Sa Re Ga Ma Pillars.
a) Kailashnath Temple b) Hazara Rama Temple
c) Papanath Temple d) Vitthala Temple

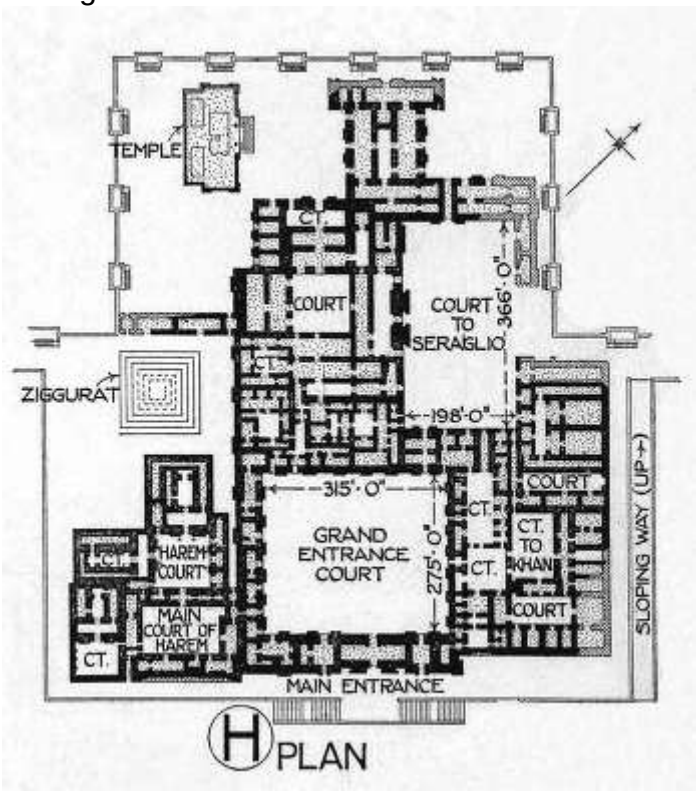
3) Which temple was built exclusively for the family members of Vijaynagara kings?
a) Pampa Devi Temple b) Vitthala Temple
c) Virupaksh Temple d) Hazara Rama Temple

4) _____ is the main entrance of the citadel Tyrin's of Mycenae.
a) The Brandenburg Gate b) Istar Gate
c) Triumphal Arch d) Lion Gate

5) Identify the following structure?

a) Parthenon Greek b) Pantheon Rome
c) Temple of Juno Sospita Rome d) None of the Above

6) Identify the following Plan?



a) Citadel of Tiryns **b)** Palace of Sargon Khorshabad
c) Tharmae of Caracalla **d)** Colosseum

7) This Choumuk temple at Ranakpur dedicated to the first Tirthankara _____.
a) Parshvanatha **b)** Adinatha
c) Sambhava **d)** Mahaveer

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

1) Star shaped temple
2) Vimana of brihdeshwara temple, Tanjore
3) Urushringas
4) Dome of Hagiya Sophia

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

1) **a)** Sketch and explain Surya Temple, At Osia Marwar? **06**
b) Sketch and explain cave temple architecture with reference to Udaygiri caves? **06**

2) **a)** Explain characteristic features of Orissan temple architecture? **06**
b) Sketch and explain Papanath temple at Pattadkal? **06**

3) What is mean by Rock Cut Temple architecture? Sketch and explain Kailashnath temple, at Ellora? **12**

4) **a)** Sketch and explain Vaikuntha Perumal temple at Kanchipuram? **06**
b) Sketch and explain Greek theater at Epidaurus? **06**

5) **a)** Sketch plan of basilican church of St. Peter Rome, define the component parts of the same. **06**
b) Sketch and explain Roman temple - Temple of Juno Sospita? **06**

SLR-UB-11

Seat No.	

Set P

B. Architecture (Semester–III) (New) (CBCS) Examination: March/April-2023
Architectural Graphics and Drawing- III (21AR3-05)

Day & Date: Tuesday, 18-07-2023 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 one point perspective view for the object given below by observing following points/conditions (Figure - A). **20**

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

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

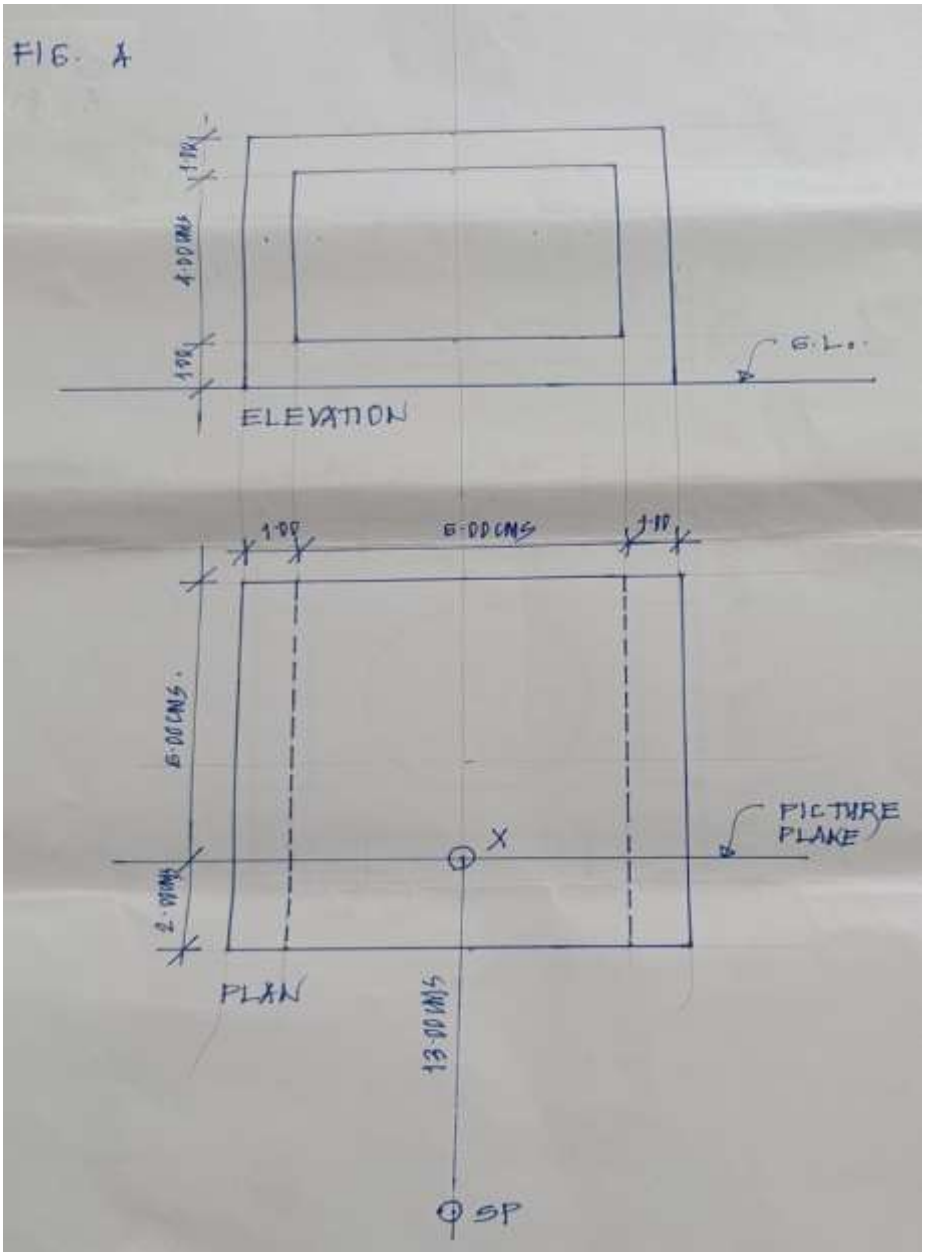


FIG. A
G.L.
ELEVATION
PICTURE PLANE
X
PLAN
SP

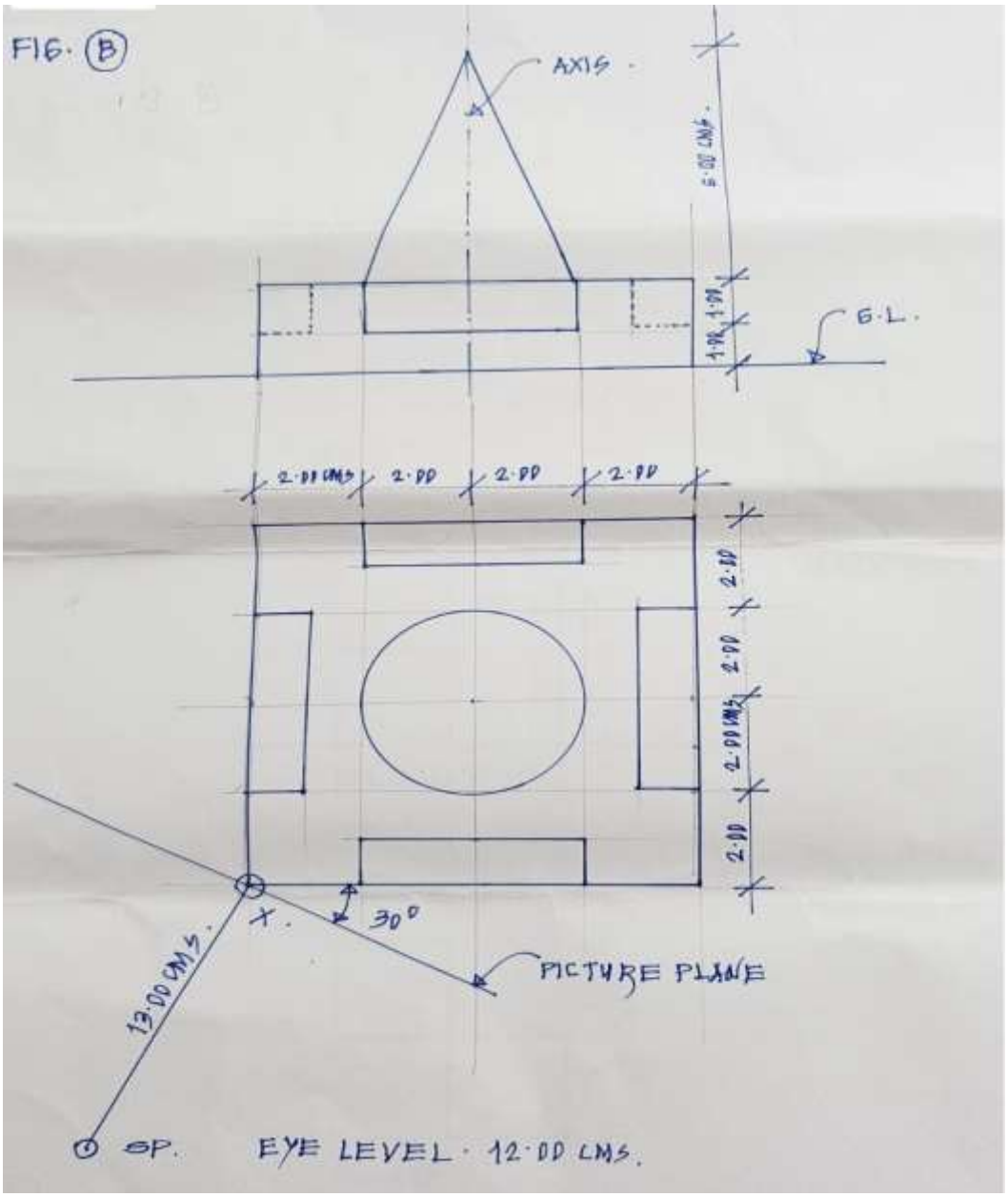
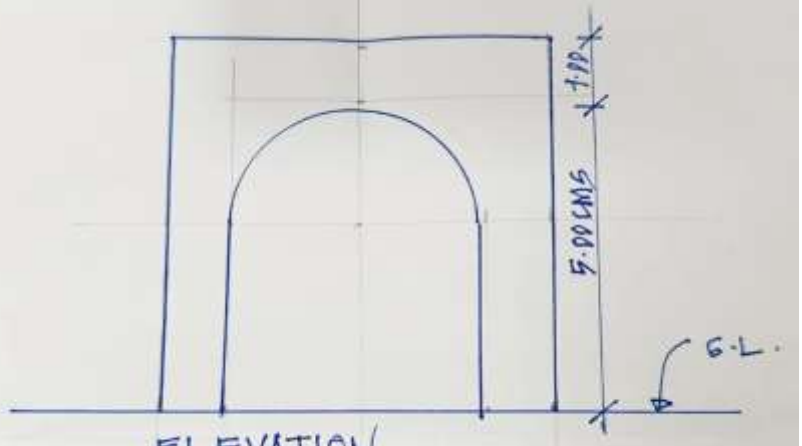


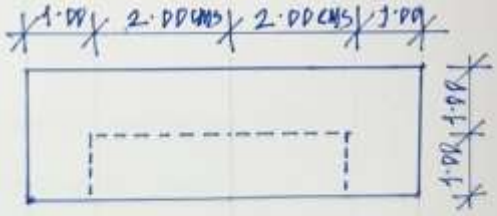
FIG. (B)
AXIS.
G.L.
2.00
2.00
2.00
2.00
2.00
2.00
2.00
30°
PICTURE PLANE
13.00 CMS.
EYE LEVEL · 12.00 CMS.

FIG. (C)

1.

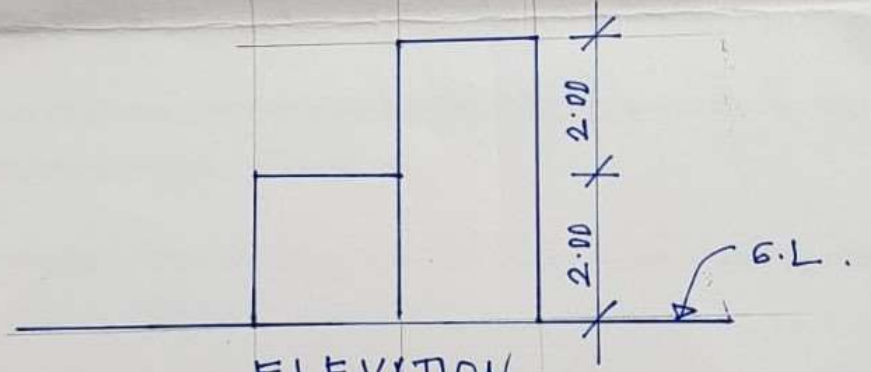


ELEVATION

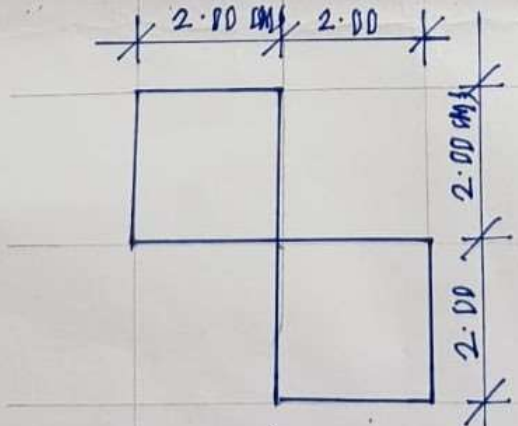


PLAN

2.



ELEVATION



PLAN

SLR-UB-12

Seat No.	

Set P

B. Architecture (Semester – III) (New) (CBCS) Examination: March/April-2023
Building Services –I (21AR3-07)

Day & Date: Wednesday, 19-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Q.NO.1 and Q.NO.2 are compulsory.
2) Solve any 4 questions from the remaining.
3) Figures to the right indicate full marks.

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

a) _____ is used to measure and record the quantity of water consumed.
b) _____ pump uses rotation to impart velocity to a liquid.
c) when water is raised directly from water mains without pumps to sanitary fixtures, then the water supply system is called _____.
d) _____ valve uses a hollow, perforated and pivoting ball to control the flow of water.
e) Wash basin uses _____ trap.
f) The pipe which carries human waste from water closets to sewer line is called _____ pipe.
g) _____ system acts as soil pipe. waste water pipe and vent pipe in vertical drainage system.

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

a) Tapping of water from Municipal drains.
b) Overhead water storage tank with section sketch.
c) Nahani (floor) trap with sketch.
d) Anti siphonage action with sketch.

Q.3 Explain with sketches any 6 types of pipe fittings (specials) used in plumbing work. **12**

Q.4 a) Explain water distribution system at town/city level. **06**
b) Explain any 3 water supply pipes. **06**

Q.5 Explain vertical drainage pipe system with neat sketches. **12**

Q.6 a) Explain any 3 drainage pipes according to function and any 3 drainage pipes according to method of manufacturing. **12**

Q.7 a) Explain Ball valve, Gate valve and Float valve with neat sketches. **06**
b) Explain Rural Sanitation in India. **06**

SLR-UB-13

Seat No.	

Set P

B. Architecture (Semester - III) (New) (CBCS) Examination: March/April-2023
Climatology and Environment – I (21AR3-08)

Day & Date: Thursday, 20-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

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

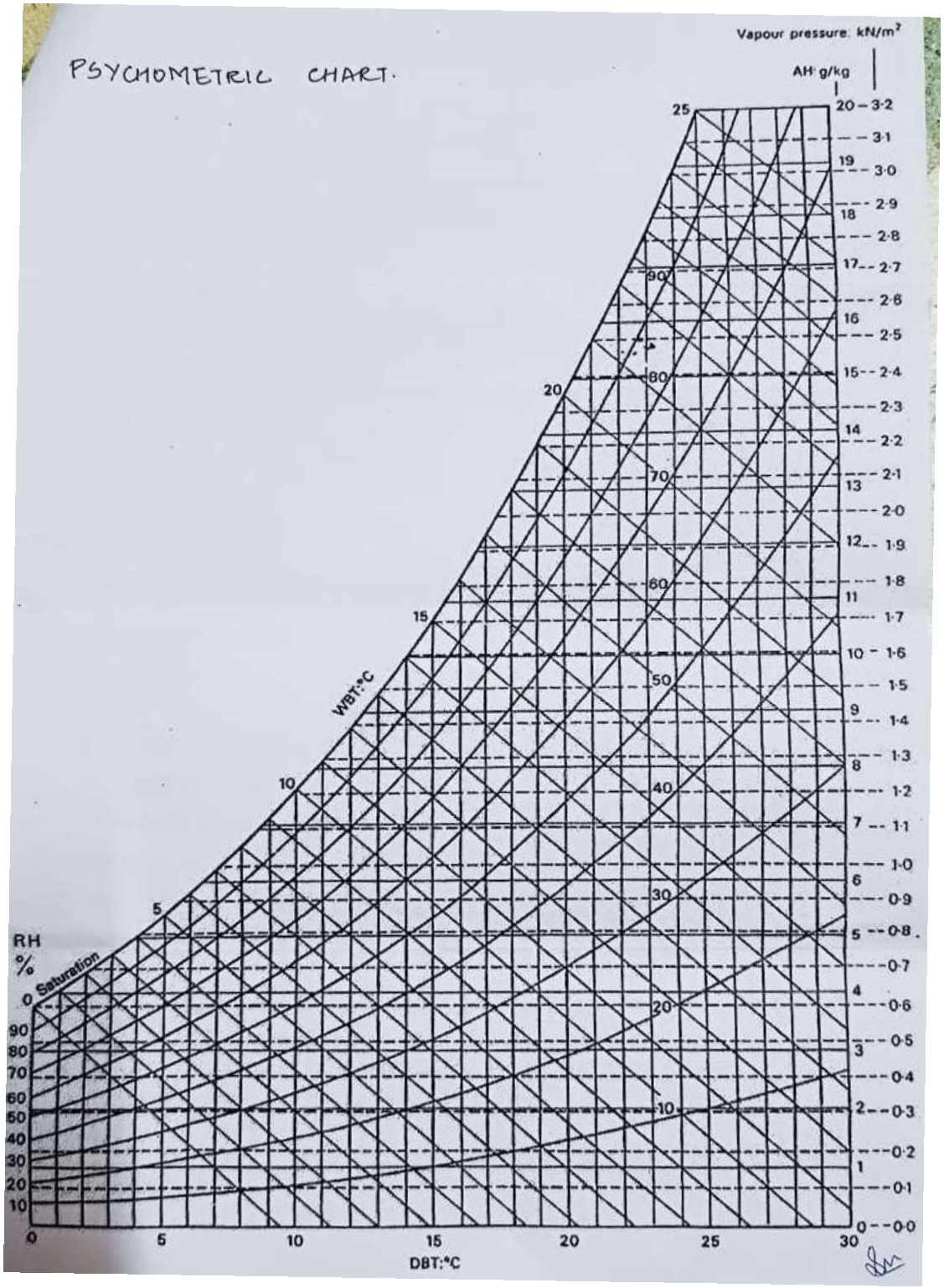
a) On _____ areas along 23.5* N latitude experience longest day on earth
b) _____ is due to heat transmission from body to air in contact with skin.
c) Equinox is _____.
d) V. Olgyay constructed /presented in a graphical way a _____chart to explain comfort zone.
e) Thermal balance exists when met-evp + cnd + cnv + rad = _____.
f) The normal human body temperature range is _____.
g) Humidity is measured with_____.

Q.2 WRITE SHORT NOTES - (ANY-3) **15**

a) Earths tilt axis.
b) Bio climatic chart
c) Human body's heat loss
d) Temperature.

Q.3 WRITE IN BRIEF - (ANY-4) **48**

a) 1) List the classification of tropical climate. **04**
2) Briefly explain the characteristics of any warm and humid climate. **08**
b) Explain the design considerations for building in hot and dry climate with neat sketches.
c) Describe heat exchange process of building with outdoor environment.
d) What are the various indices of thermal comfort? Explain any 3 in detail.
e) 1) Find AH, DBT,RH when VP-1.0 KN/m2 ,WBT - 15*C.
2) Find VP, WBT, RH when, AH- 6 g/kg, DBT -17*0.


PSYCHOMETRIC CHART.
Vapour pressure: kN/m²
AH: g/kg
WBT:°C
DBT:°C
RH %
Saturation
0
5
10
15
20
25
30
10
20
30
40
50
60
70
80
90
0-0.0
1-0.1
2-0.3
3-0.5
4-0.6
5-0.8
6-0.9
7-1.1
8-1.2
9-1.4
10-1.6
11-1.7
12-1.9
13-2.0
14-2.2
15-2.4
16-2.5
17-2.7
18-2.8
19-3.0
20-3.2

SLR-UB-16

Seat No.		Set	P

B. Architecture (Semester - III) (Old) (CBCS) Examination: March/April-2023

Theory of Structure- III (7022304)

Day & Date: Sunday, 16-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Q. No. 1 and Q. No. 2 is compulsory. from remaining questions solve any four.
2) Figures to the right indicate full marks.
3) Assume suitable data if necessary.

Q.1 Select the correct option from the following. **08**

1) Shear stress in beam is zero at _____.
a) Neutral axis **b)** cross section
c) Junction **d)** Extreme fibres

2) shear stress distribution over rectangular section is _____.
a) Parabolic **b)** Elliptical
c) Triangular **d)** trapezoidal

3) Two span beam having one of its ends fixed, can be called as _____.
a) Simply supported **b)** Cantilever beam
c) Continuous beam **d)** Propped cantilever

4) Bending stress distribution in beam is _____.
a) Parabolic **b)** Linear
c) Cubic **d)** Quadratic

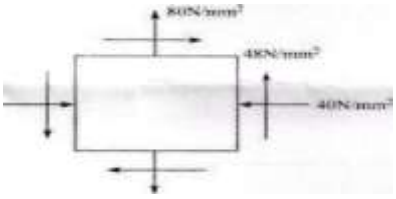
Q.2 Write the importance of soil mechanics in building construction. **06**

Q.3 **a)** Explain the principle of Superposition in analysis of Fixed beam **04**

b) For a rectangular beam of rectangular cross section, carrying point load at centre, Maximum bending stress is 12 N/mm2 and maximum shear stress is 1 N/mm2.Find span to depth ratio **10**

Q.4 **a)** Explain any one method of analysis of Continuous beam. **04**
b) A rectangular beam of breadth 100 mm and depth 200 mm is simply supported over a span of 4 m. The beam is loaded with an uniformly distributed load of 5 kN/m over the entire span. Find the maximum bending stresses. **10**

Q.5 Various stresses are acting on object as shown in figure. Find out maximum shear stress and resultant stress on the plane of maximum shear stress. **14**

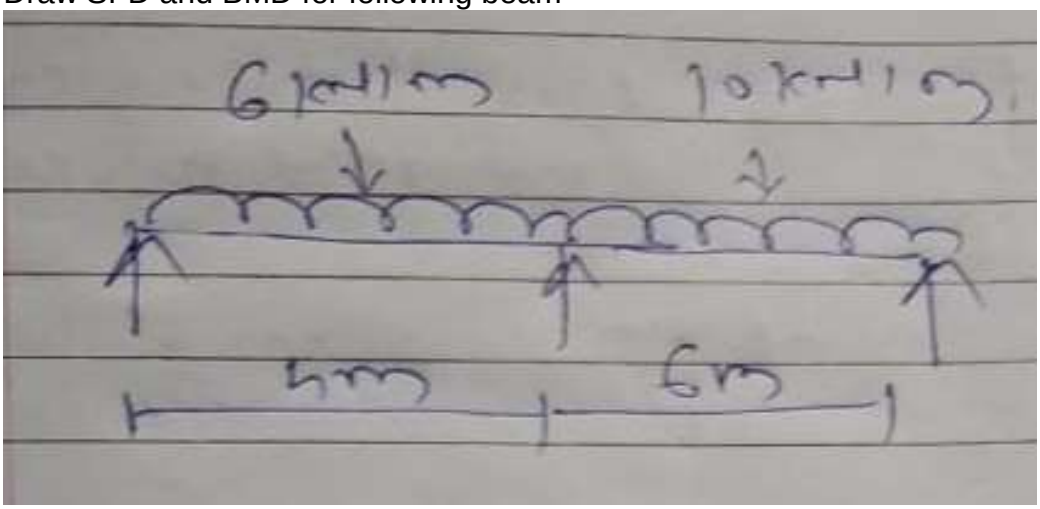


Q.6 **a)** **Write a short note on** **08**

1) Major principal stress
2) Minor principal stress
3) Maximum shear stress
4) Effect of continuity on continuous beam

b) Explain Mohrs circle method **06**

Q.7 Draw SFD and BMD for following beam **14**



SLR-UB-18

Seat No.	

Set P

B. Architecture (Semester–III) (Old) (CBCS) Examination: March/April-2023
Architectural Graphics- III (7022302)

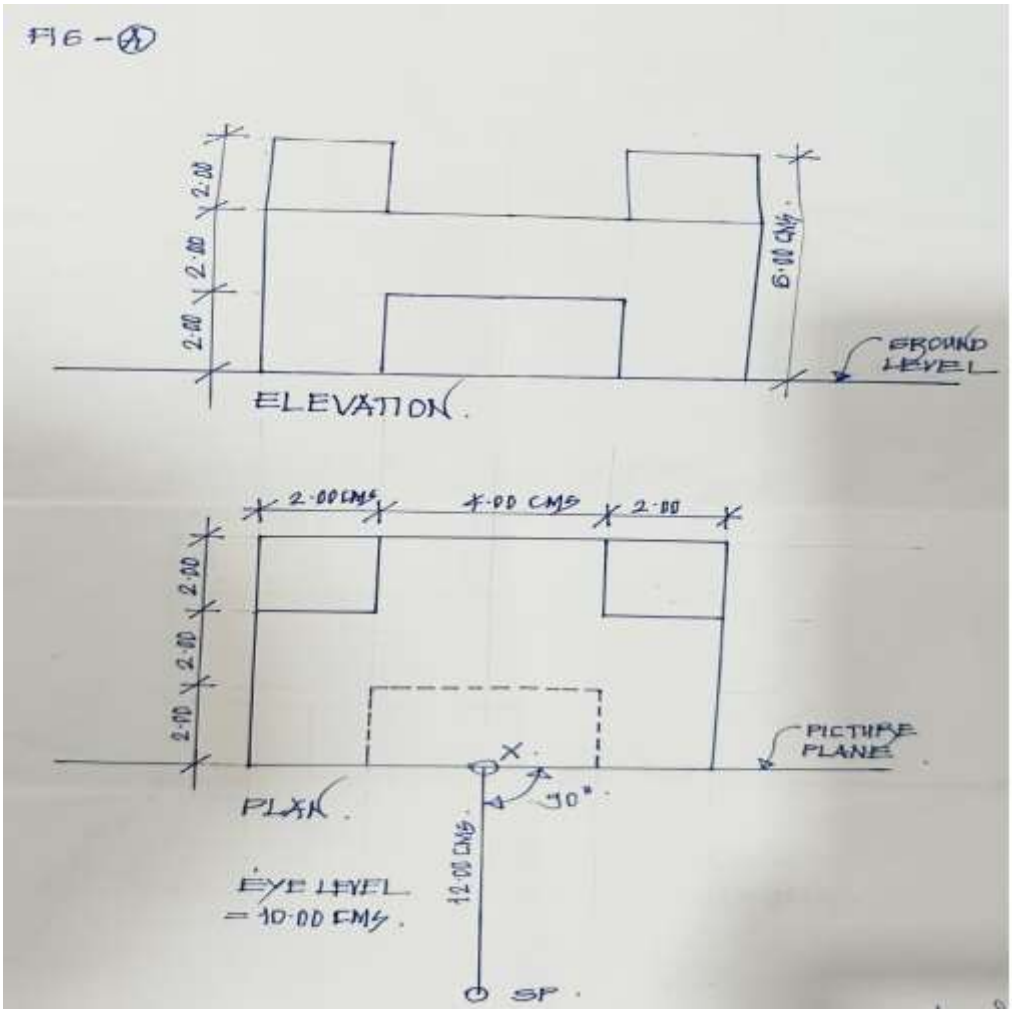
Day & Date: Tuesday, 18-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

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

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



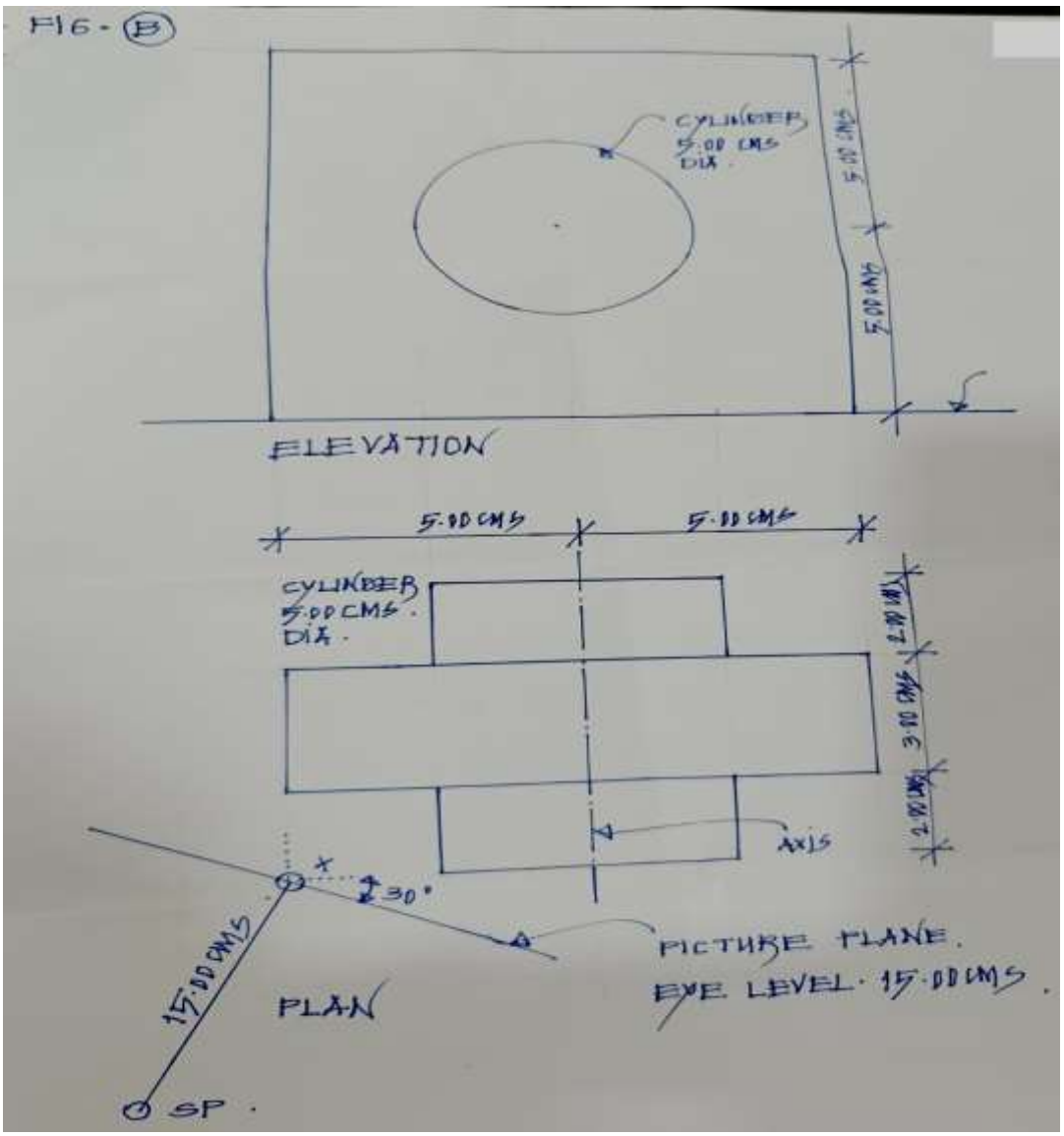


FIG - (B)
CYLINDER
5.00 CMS
DIA.
5.00 CMS
5.00 CMS
ELEVATION
5.00 CMS
5.00 CMS
CYLINDER
5.00 CMS.
DIA.
3.00 CMS
2.00 CMS
AXIS
30°
PICTURE PLANE.
EYE LEVEL. 15.00 CMS.
15.00 CMS
PLAN
SP.

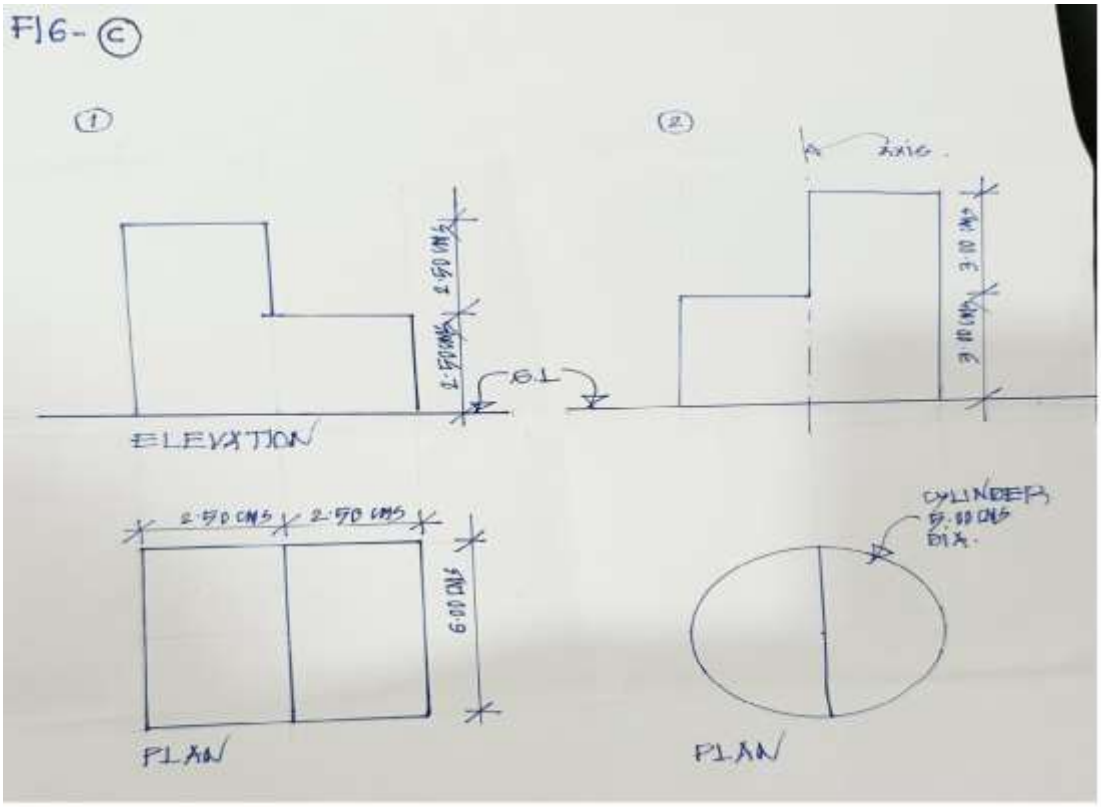


FIG - (C)
(1)
(2)
AXIS.
2.50 CMS
3.00 CMS
6.1
ELEVATION
2.50 CMS
2.50 CMS
6.00 CMS
CYLINDER
5.00 CMS
DIA.
PLAN
PLAN

SLR-UB-21

Seat No.	

Set P

B. Architecture (Semester–IV) (New) (CBCS) Examination: March/April-2023
Theory of Structure – IV

Day & Date: Saturday, 15-07-2023 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) Short columns fail due to _____.
a) Crippling b) Crushing
c) Buckling d) Bending

2) Due to eccentric load _____ stresses are produced.
a) Direct b) Bending
c) Both a) and b) d) None of the above

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

4) Allowable axial compressive stress in unreinforced brick masonry walls is ____.
a) $0.20\ fm$ b) $0.25\ fm$
c) $0.5\ fm$ d) $0.60\ fm$

5) Which of the following is not statically determinate beam?
a) Simply supported b) Cantilever
c) Fixed d) All of the above

6) Fixed end moment for beam with UDL throughout its length is _____.
a) PL/8 b) $w\ L^2 / 12$
c) $w\ L^2 / 24$ d) $w\ L^3 / 30$

7) Methods of design of structural component are _____.
a) Working stress method b) Limit state method
c) Both a) and b) d) None of the above

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

a) Working stress and limit state method.
b) Types of retaining walls. Explain any 4.
c) Allowable stresses in masonry structures.
d) No tension condition of a rectangular section.

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

a) Determine crippling load of T section of dimensions 10 cm X 10 cm X 2 cm and length of 5 m when it is used as strut with both ends of its ends hinged. Take Young's modulus E = 2 X 10^5 N/mm^2.

b) A beam of length 6m is simply supported at its ends and carries two point loads of 48KN and 40KN at a distance of 1m and 3m respectively from left support. If E = 2 X 10^5 N/mm^2 and I = 85 X 10^6 mm^2, Find the deflection under each load.

c) A column is rectangular in cross section of 300mm X 400mm in dimensions. The column carries an eccentric point load of 360KN as shown in fig. Calculate the stresses at all four corners. (Refer fig.-1)

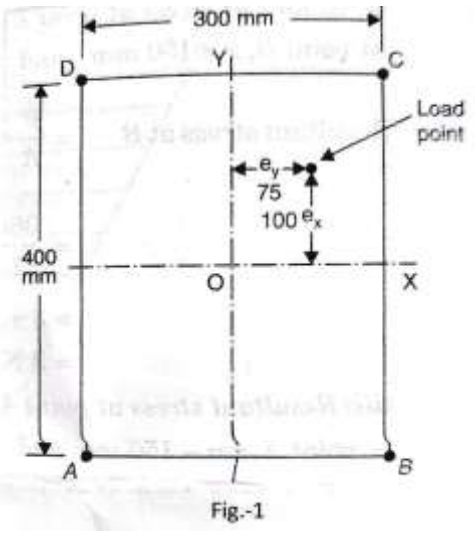


Fig.-1

d) Write a note on Rankins's Theory of retaining walls.

e) Write a note on types of masonry construction based on material.

SLR-UB-22

Seat No.	

Set P

B. Architecture (Semester – IV) (New) (CBCS) Examination: March/April-2023
History of Architecture- III (21AR4-04)

Day & Date: Sunday, 16-07-2023 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) The first experiment of Gothic Architecture is made in _____.
a) Italy b) England
c) France d) Netherlands

2) In _____ vaulting the main ribs from equal angle with each other and of same curvature and are connected at different height by horizontal lierne ribs.
a) Barrel Vaulting b) Ribbed Vaulting
c) Fan Vaulting d) Groins vault

3) Bauhaus school is located in _____.
a) Venice b) Dessau
c) France d) Dresden

4) A triangular segment of a spherical surface, filling in the upper corners of a room, in order to form, at the top, a circular support for a dome is called as _____.
a) Pendentives b) Arches
c) Lintel d) Squinches

5) Mihrab is on _____ side.
a) East b) West
c) North d) South

6) The Indo-Saracenic Architecture is combination of which all styles of Architecture?
a) Neo-Gothic, Baroque & Rajasthani
b) Neo-Classical, Art Deco & Islamic
c) Gothic Revival, Neo classical, Indo-Islamic and Hindu Architecture
d) None of above

7) In front of Mihrab, an open place without roof called _____.
a) Sahn b) Sanctuary
c) Mimbar d) Liwans

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

1) Pendentives and Squinches
2) Bara Gumbad
3) Chhatrapati Shivaji Maharaj Terminus (Victoria Terminus)
4) Rashtrapati Bhawan

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

1) Explain Imperial Style of Islamic Architecture in India with example of tomb of ghiyas-ud-din tughlaq.

2) Explain architecture of Bauhaus School.

3) Explain the characteristics of Indo-saracenic architecture in India with example Victoria Memorial, Kolkata.

4) Explain architecture of Ibrahim Rouza, Bijapur.

5) Explain Mughal Style Architecture with example Humayun's Tomb. Period- mid-16th to the late 17th century.

SLR-UB-23

Seat No.	

Set P

B. Architecture (Semester – IV) (New)(CBCS) Examination: March/April-2023
Theory of Architecture (21AR4-05)

Day & Date: Monday, 17-07-2023 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Q.1 and Q.2 are compulsory. From remaining questions solve any four.
2) Figures to the right indicate full marks.
3) Assume suitable data if necessary.

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

1) The name of Vitruvius' treatise on architecture was _____.
a) Four Elements of Architecture **b)** Seven Lamps of Architecture
c) De Architectura. **d)** Pattern language

2) _____ is famous for its stately symmetry, classical elements, and grand appearance.
a) Palladian **b)** Deconstructivism
c) Renaissance **d)** Antiquity

3) _____ (1849) treatise on architecture by John Ruskin.
a) Four Elements of Architecture **b)** Seven Lamps of Architecture.
c) De Architectura. **d)** Essay on architecture

4) _____ was the architect behind the restoration of Notre Dame in the nineteenth century.
a) Leon Battista Alberti **b)** Viollet Le Due
c) Saarinen **d)** Charles Jencks

5) Ar. Kenzo-Tange earn the _____ Architecture Prize in 1987.
a) Pritzker **b)** RIBA
c) Aga khan **d)** Padma Bhushan

6) Robert Venturi published his treatise _____ in Architecture in 1966.
a) Four Elements of Architecture **b)** Seven Lamps of Architecture
c) De Architectura **d)** Essay on architecture

7) Christopher alexander is best for his _____ book.
a) Complexity and Contradiction **b)** Seven Lamps of Architecture
c) De Architectura **d)** Pattern Language

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

1) The 6 Principles of Vitruvius.
2) Palladian architecture
3) Deconstructivism
4) Metabolist movement

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

1) Explain the relation between the human body and design of temple.
2) Why is Laurie Baker known as Gandhi of Indian architecture?
3) Explain critical regionalism and six points on architectural resistance by Kenneth Frampton.
4) What are the four elements of architecture according to Gottfried Semper?
5) Explain the theory of renaissance in architecture.

SLR-UB-24

Seat No.	

Set P

B. Architecture (Semester–IV) (New) (CBCS) Examination: March/April-2023
Building Services – II (21AR4-07)

Day & Date: Tuesday, 18-07-2023 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.

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

1) Voltage = Current x _____.
a) Volts b) Ampere
c) Resistance d) Lux

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

3) Air conditioning involves _____.
a) control of temperature-humidity & airflow
b) only humidity
c) purity of air
d) temperature control

4) In traction lift _____, is used to balance the weight of car.
a) driving ropes b) counter weight
c) buffers d) motor

5) The process of extraction of the certain required amount of water from air is known as _____.
a) heating b) cooling
c) dehumidification d) humidification

6) Tungsten filament is used in _____ lamp.
a) LED b) neon
c) incandescent d) fluorescent

7) An electronic device has a resistance of 20 ohms and a current of 15 A, then the voltage across the device will be _____.
a) 20V b) 300V
c) 1.5V d) 250V

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

a) Advantages of LED lamps over other lamps.
b) Mechanical ventilation and its benefits.
c) Types of lifts.
d) 5 Advantages and 5 Disadvantages of conduit wiring system.

Q.3 Attempt the following questions (Any 4)

a)	Draw a neat diagram of Three phase electric supply and explain in detail.		**12**
b)	1)	Draw any 3 arrangements of Escalators.	**03**
	2)	Explain working of escalator with sketch.	**09**
c)	1)	Draw a neat section through window air conditioner and label it.	**04**
	2)	List down its indoor and outdoor components.	**04**
	3)	Explain function of each component with reference to refrigeration cycle.	**04**
d)	Explain any 3 types of lamps with sketch.		**12**
e)	Give any 8 points of comparison between Cleat wiring, Casing Capping wiring, Batten wiring and Conduit wiring.		**12**

SLR-UB-25

Seat No.	

Set P

B. Architecture (Semester – IV) (New) (CBCS) Examination: March/April-2023
Climatology and Environment – II (21AR4-08)

Day & Date: Wednesday, 19-07-2023 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

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

1) Stack ventilation through rooms is increased by _____ distance between high & low.
a) Greater **b)** Shorter
c) Opposite **d)** None of the above

2) _____ that can tolerate temperature swings can be located between protected rooms and undesired heat & cold.
a) Cooling zone **b)** Stratification zone
c) Heat producing zone **d)** Buffer zone

3) _____ Organisations of interwoven buildings and planting can be used to reduce the ambient.
a) Air velocity **b)** Air temperature
c) Humidity **d)** None of the above

4) The _____ characterizes a vertical shading device.
a) Shadow angle protractor **b)** Vertical shadow angle
c) Horizontal shadow angle **d)** All of the above

5) _____ is only possible by mechanical means, without this, in warm-humid climates, some relief can be provided by air movement.
a) Cross ventilation **b)** Dehumidification
c) Mechanical ventilation **d)** None of the above

6) Some materials when exposed to light, transmit a large part of it - these are referred as _____ materials.
a) Reflective **b)** Absorptive
c) Transparent **d)** None of the above

7) In _____ climates wide variations occur in natural lighting, between over-cast and clear sky conditions.
a) Tropical climates **b)** Warm-humid climates
c) Hot-dry climates **d)** Composite climate

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

1) Shadow angles
2) Stack effect
3) Day light in Hot-Dry climates
4) Mutual shading

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

1) Explain any THREE techniques with sketches for building scale strategy.

2) Explain-

i) Vertical devices
ii) Horizontal device
iii) Egg-crate device

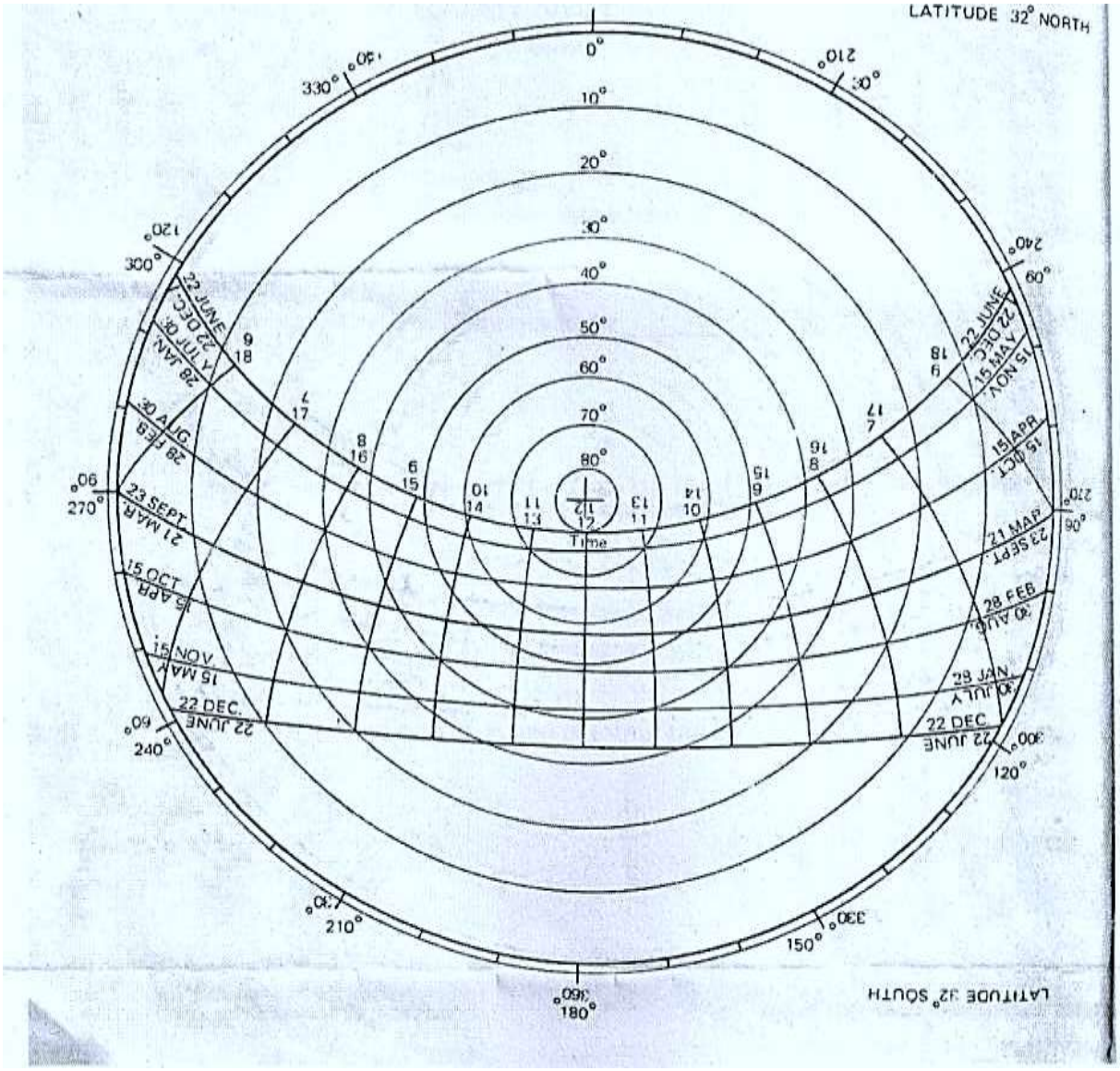
In detail with sketches

3) a) Write short note on Position of openings with sketches.
b) Explain the Daylight Factor.

4) a) Explain with sketches Evaporative cooling building scale strategy.
b) Explain with sketches Shady courtyards building scale strategy.

5) a) Find solar Altitude & Azimuth Angle for given chart below 32° North at
- 11 am on 23rd September
- 16 pm on 30th August

b) Explain with sketches Thermal collector walls and roofs.



SLR-UB-26

Seat No.		Set	P

B. Architecture (Semester – IV) (New) (CBCS) Examination: March/April-2023
Building Construction and Material- IV (21AR4-02)

Day & Date: Thursday, 20-07-2023 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 attempted on sheets provided by the University.
4) Make suitable assumptions wherever necessary.
5) Figures to the right indicate full marks.

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

1) The _____ footing is a spread or wall footing that must resist a moment in addition to the axial column load, and it has the shape of the shoe.
   a) Combined b) Isolated
   c) Eccentric d) Strap

2) RCC slab is designed as a one-way slab if the ratio of spans is more than _____.
   a) 4 b) 2
   c) 1 d) 3

3) The steel generally used in RCC work is _____.
   a) Alloy Steel b) Mild Steel
   c) Wrought Iron d) Stainless steel

4) An R.C.C. column is treated as short, if its slenderness ratio is less than _____.
   a) between 60-120 b) equal to 60
   c) less than 32 d) more than 120

5) Identify the following RCC roof structure _____

   a) Slab b) roof
   c) Dome d) vault

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

a) A room having dimension 5m x 7m, having beam 230mmx450mm and 230mm thick wall all around, a cantilever balcony of 1.5m wide provided along the shorter side, is to be provided of RCC slab. Draw a plan and Cross section of slab showing reinforcement details in beam and slab.

b) Draw to a suitable scale steel window with Ventilator, Size of window opening is 1200x1800 mm.

c) A store room of 3.00m x 5.00m in size has an opening of 0.90mx 2.10m, with wall thickness of 0.23 m. Provide simple metal Door to a suitable scale. draw plan, elevation and section ?

Q.3 WITH NEAT SKETCHES WRITE SHORT NOTES ON- **25**

a) Form work for column
b) Combined footing
c) Collapsible Gate
d) Doubly reinforced beam
e) Cellular raft foundation

Q.4 FILL IN THE BLANKS. **05**

1) _____ cement is used for the construction of water retaining structures and also for repairing the damaged concrete surfaces.
   a) Ordinary Portland cement b) high alumina cement
   c) Expanding cement d) coloured cement

2) _____ cement is used under running water or static water.
   a) Blast furnace cement b) Quick Setting cement
   c) Acid resistant cement d) white cement

3) Initial setting time for ordinary cement is _____.
   a) 10 Hours b) 8 Hours
   c) 6 Hours d) Half Hour

4) If the cement is used as a binding material to prepare mortar for plastering work it is termed as _____.
   a) Surkhi Plaster b) Lime Plaster
   c) Cement Plaster d) Mud Plaster

5) Plaster of Paris most commonly known as P.O.P is made from _____.
   a) Cement b) Sand
   c) Lime d) Gypsum

Q.5 ANSWER IN DETAIL: - (ANY 2) **20**

a) List out various types of cement and state various properties of cement.
b) What is mean by compaction of concrete and state its necessity? list out methods used for compaction of concrete?
c) What is plastering mortar? What the types of mortars used in plastering work?

Q.6 WRITE SHORT NOTES ON- **15**

a) Water Cement Ratio
b) Construction joint and Expansion joint in concrete construction
c) Slump Test of Concrete

SLR-UB-27

Seat No.	

Set P

B. Architecture (Semester-IV) (Old) (CBCS) Examination: March/April-2023
Theory of Structure- IV (7022404)

Day & Date: Saturday, 15-07-2023 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

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

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

1) Maximum deflection of cantilever beam with UDL over entire span is _____.
a) $WL^4/8EI$ b) $WL^4/6EI$
c) $WL^4/2EI$ d) $WL^4/3EI$

2) Effective length of column with one end is fixed and other hinged is _____.
a) L b) 2L
c) L/2 d) L/ √ 2

3) Rankines constant of timber is _____.
a) 1/1600 b) 1/7500
c) 1/1800 d) None of these

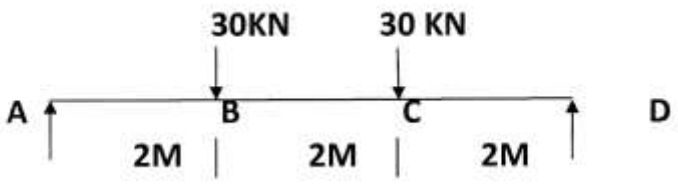
4) For No Tension Condition in circular Section of diameter D, core is _____.
a) D/2 b) D/3
c) D/6 d) D/8

Q.2 Explain working stress method and Limit state method. **06**

Q.3 A steel column of symmetrical I section having Fiange of 150×20 mm and web of 100mm×20 mm is used as a strut 6 m long which is hinged at one end and fixed at other end. Calculate the crippling load by Euler's Formula Take $E=2 \times 10^5$ N/mm^2 **14**

Q.4 **a)** Explain concept of core of section and derive formula for Rectangular and Circular section. **10**
b) Write a short note on Equivalent length of column. **04**

Q.5 Find slope at A and Deflection at C for following beam if $E=2 \times 10^5$ N/mm^2 and $I=5.5x10^6$



Q.6 **a)** Explain different types of retaining wall with diagram. **07**

b) State and explain different types of masonry structures. **07**

Q.7 A simply supported beam of span 5m is carrying UDL of 20 KN/m Over entire span. lt also carrying central point load of 40KN. Find Slope at end and maximum deflection if EI = 60×10^3 KN-m^2. **14**

SLR-UB-28

Seat No.	

Set P

B. Architecture (Semester – IV) (Old) (CBCS) Examination: March/April-2023
History of Architecture - IV (7022405)

Day & Date: Sunday, 16-07-2023 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Draw explanatory sketches for Q. No. 2 and Q.3.
2) All questions are compulsory.
3) Figures to the right indicate full marks.

Q.1 Fill in the blanks correctly and rewrite the sentences. **07**

a) _____ is the architectural element to convert square plan into octagonal to support the dome.
b) The central pool in Char Bagh Gardens of Taj Mahal is known as _____.
c) The construction work of Qutb Minar was started by _____.
d) The architect of Rashtrapati Bhavan was _____.
e) Diwan-i-Khas is also called as _____.
f) The golden period of Indian architectural is considered to be in the period of _____ ruler.
g) _____ type of dome is used in Humayun's Tomb.

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

a) Difference between pendentives and squinches
b) Jodha Bai's Palace
c) Shalimar Bagh
d) Alai Darwaza

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

a) Explain in detail the component of mosque in Islamic architecture.
b) What is meant by Indo Islamic architecture? Explain with any one example.
c) Describe the architectural features and design of Gol Gumbaz.
d) Explain the planning of Fatehpur Sikri.
e) Explain Parliament House with neat sketches.

SLR-UB-31

Seat No.	

Set P

B. Architecture (Semester – IV) (Old) (CBCS) Examination: March/April-2023
Building Services - II (7022401)

Day & Date: Tuesday, 18-07-2023 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**

a) The per capita demand of water for domestic supply is _____.
b) Wells are the form of _____ source of water.
c) _____ are structures used to draw water from the sources in distribution system.
d) In _____ system water is supplied for 24hrs of the day.
e) _____ are the devices used to measure the quantity of water, supplied to consumer.
f) _____ valves relieves high pressure in the pipelines.
g) Disinfectioning of water helps in removing _____ bacteria.

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

a) Fire Hydrant
b) Infiltration Well
c) Bib Tap
d) Reflux valve

Q.3 Answer the following in detail. (Any 4) **48**

a) State the purpose of service reservoir? sketch and describe surface reservoir?
b) Sketch and explain the following methods of distribution of water?
i) pumping system
ii) gravity and pumping system?
c) Discuss in brief methods of water supply in high rise building?
d) Design a overhead water tank for small residential colony of 100 persons? draw neat sketches showing all necessary connections? Make suitable assumptions wherever necessary?
e) State the advantages and disadvantages of concrete pipe and G.I. Pipe used for water supply?

SLR-UB-32

Seat No.	

Set P

B. Architecture (Semester – IV) (Old) (CBCS) Examination: March/April-2023
Climatology and Environment - II (7022403)

Day & Date: Wednesday, 19-07-2023 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) Figures to the right indicate full marks.
3) Questions 1 and 2 are compulsory.
4) Solve any four from question 3 to 7.

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

1) _____ simulates changing position of sun & shade during day & throughout year using a model.
a) Psycomtric chart b) Sundial
c) Bioclimatic chart d) none of above

2) Due to _____ air tends to move in same direction when it meets an obstruction
a) Moisture b) inertia
c) particulate matter d) none of above

3) _____ characterises by month or year, direction, speed & frequency of wind in your location.
a) WIND ROSE b) SUN DIAL
c) BIOCLIMATIC CHART d) none of above

4) When wind meets an object, it creates a _____ pressure zone of reduced velocity.
a) Low b) high
c) Neutral d) none of above

5) _____ energy of people can contribute substantially to amount of heat generated in building.
a) Metabolic b) Active
c) Stored d) none of above

6) _____ helps you to determine architectural responses that produce thermal comfort in your climate.
a) Sun path diagram b) Sundial
c) Bioclimatic chart d) none of above

7) An inevitable by-product of electric lighting is _____.
a) Vapour b) air
c) Heat d) none of above

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

a) MIGRATION as design strategy.
b) Stack Ventilation.
c) Double Skin Facede.
d) Wind Modification due to topography.

Q.3 **a)** Explain with sketches LOCATING OUTDOOR ROOMS in site planning. **06**

b) From the given Sunpath diagram, for 32°n, find the azimuth and altitude angles of the sun on. **06**

1) June 11 a.m.
2) October 4 p.m.
3) May 12 p.m.

Q.4 Explain cold and cloudy climate and give two bioclimatic strategies to be used to achive thermal comfort. **12**

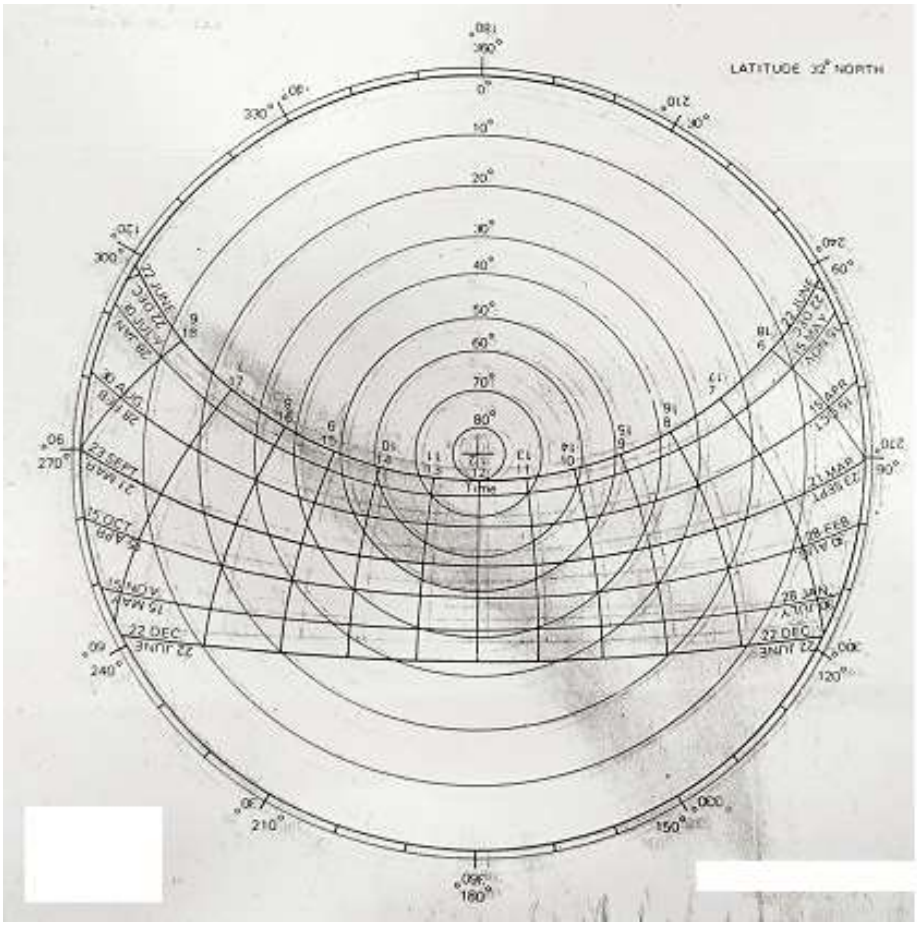
Q.5 **a)** Explain "Munsell" colour system. **05**

b) Explain Internal Heat Gain as a result of: **07**

1) Occupancy
2) Electric Lighting and
3) Equipment

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

Q.7 Explain combination of cross and stack ventilation as building design strategy. **12**



SLR-UB-33

Seat No.	

Set P

B. Architecture (Semester–IV) (Old) (CBCS) Examination: March/April-2023
Architectural Graphics - IV (7022402)

Day & Date: Thursday, 20-07-2023 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. **20**

Q.2 Draw perspective view of the given object by observing points in Dia. B **20**

Q.3 Dia. C shows plan and elevation of the object as shown in the figure and draw perspective view observing the following points along with shades and shadows in the perspective view. **25**

FIG. (A)

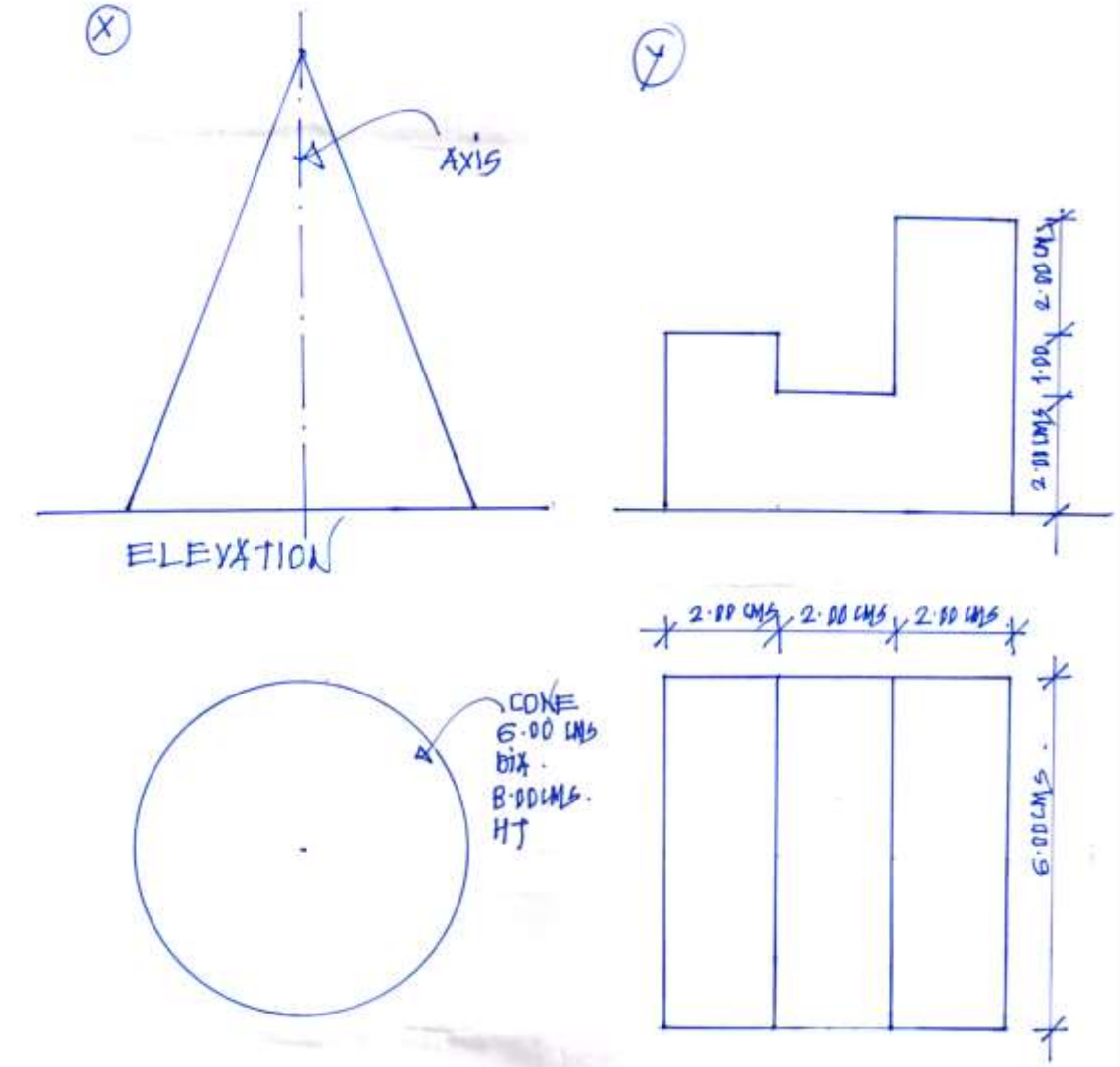
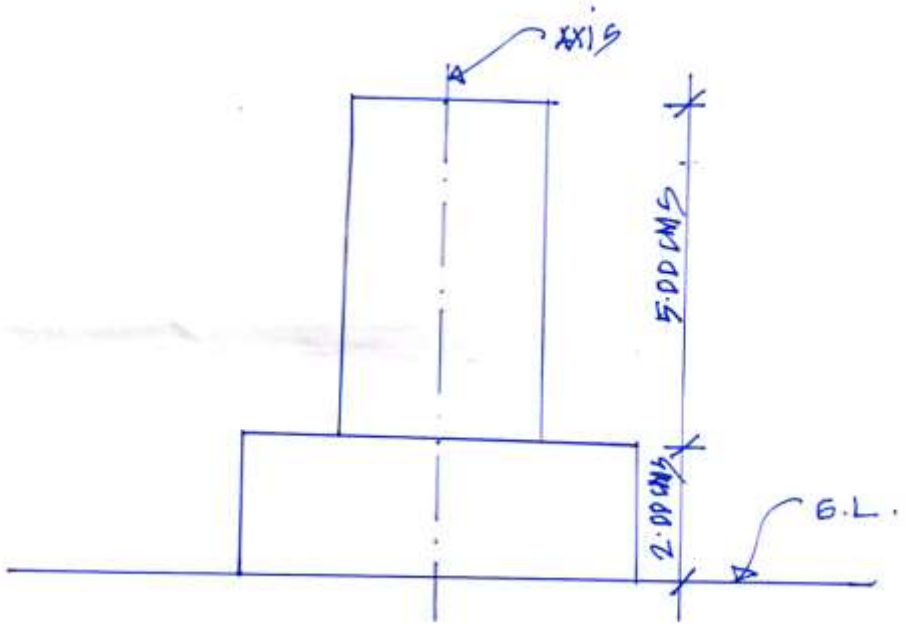

X
AXIS
ELEVATION
Y
2·00 CMS
1·00
2·00 CMS
2·00 CMS
2·00 CMS
2·00 CMS
CONE
6·00 CMS
DIA.
8·00 CMS.
HT
6·00 CMS.

FIG.- (B)


AXIS
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2·00 CMS.
G.L.

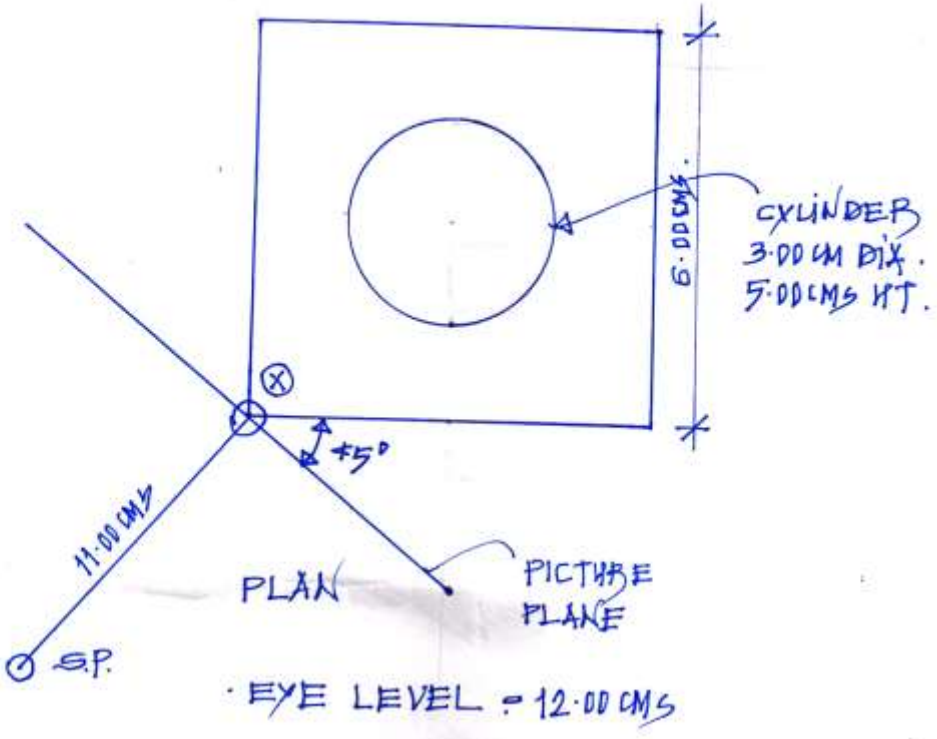
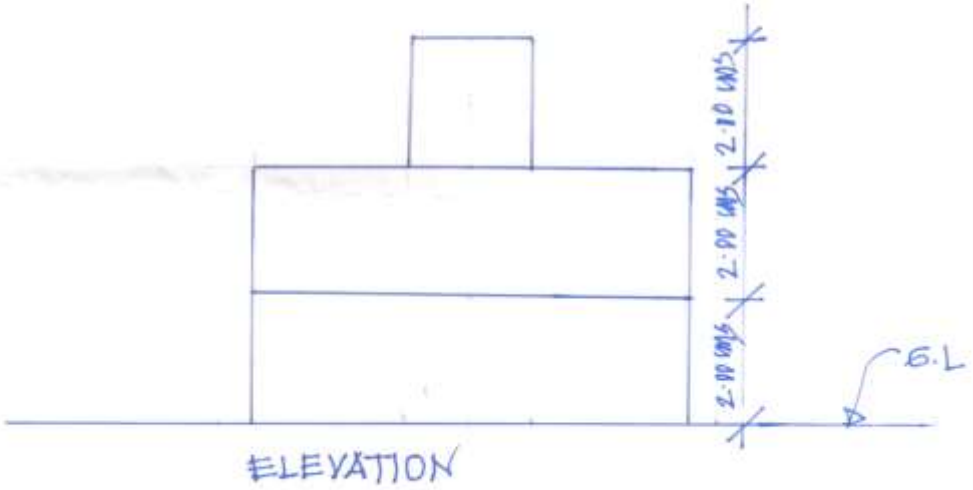
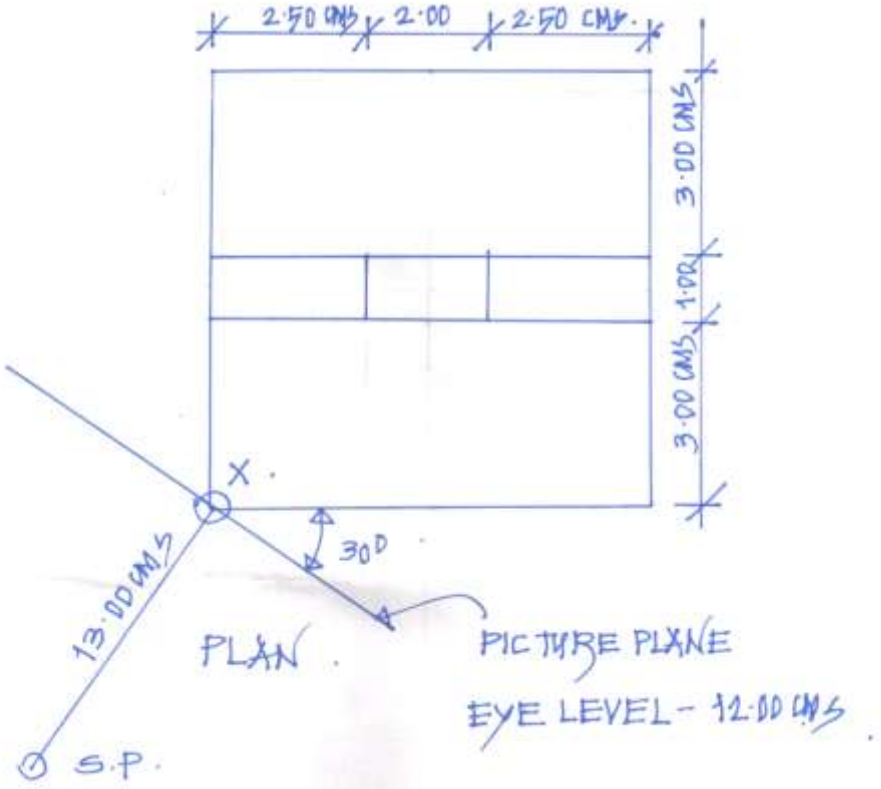

6·00 CMS.
CYLINDER
3·00 CM DIA.
5·00 CMS HT.
X
45°
11·00 CMS
S.P.
PLAN
PICTURE PLANE
· EYE LEVEL = 12·00 CMS

FIG. - (C)



ELEVATION



PLAN

PICTURE PLANE

EYE LEVEL - 12·00 CMS

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Seat No.	

Set P

B. Architecture (Semester - V) (CBCS) Examination: March/April-2023
Theory of Structure-V (7023501)

Day & Date: Friday, 21-07-2023 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 scientific calculator is allowed.
5) IS 800 and steel table is allowed.

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

1) A tie is a _____.
a) Flexible member b) Compression member
c) Torsion member d) Tension member

2) A channel section consists of _____.
a) Two flanges b) Two webs
c) One flange and two webs d) Two flanges and one web

3) The imaginary line along which rivets are placed is known as _____.
a) Rivet line b) Gauge line
c) Back line d) All of these

4) Failure of a column depends upon _____.
a) Weight of column
b) Height of column
c) Slenderness ratio
d) Cross sectional area of column

5) Pick up the correct statement from the following:
a) Dead loads include self-weight of the structure and super imposed loads permanently attached to it
b) Dead loads change their positions and vary in magnitude
c) Dead loads are known in the beginning of the design
d) None of the above

6) The effective length of fillet weld should not be less than _____.
a) Two times the weld size b) Four times the weld size
c) Six times the weld size d) Weld size

7) The wind load on a steel roof truss for an industrial building will depend upon _____.
a) Location of the structure b) Shape of the structure
c) Size of the structure d) All of the above

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

a) Differentiate between welded and riveted connections.
b) Write a note on efficiency of bolts.
c) Write a note on types of trusses with its suitability
d) Write a note on design steps of compression members.

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

a) Find the efficiency of the lap joint shown in fig. -1. Given M20 bolts of grade 4.6 and Fe410 (E 250) plates are used.

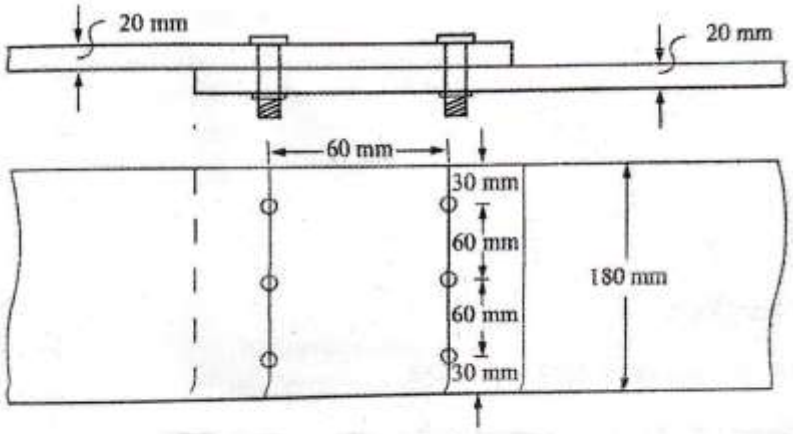

Fig.-1

b) Determine the design tensile strength of the plate 130mm X 12mm with the holes for 16mm diameter bolts as shown in fig.-2 (all dimensions are in mm). Steel used is of 410 grade quality.

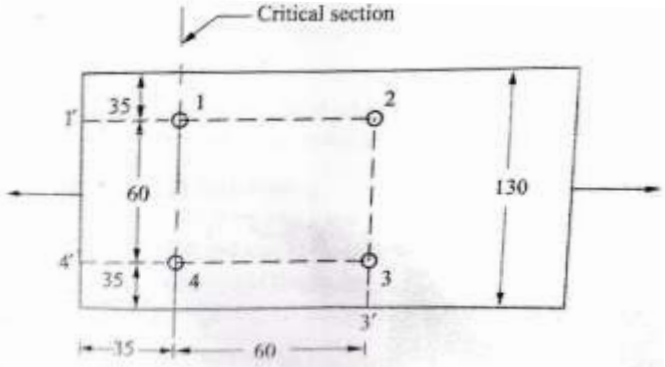

Fig.-2

c) Design a simply supported beam of effective length 1.5m carrying a factored load of 360 KN at mid span.

d) Design a single angle strut connected to a gusset plate to carry 180KN factored load. The length of strut between centre to centre connection is 3m.

e) A truss of span 7.5 m carries a point load of 1KN at joint D as shown in Fig.-3. Find the reactions and forces in the members of truss.

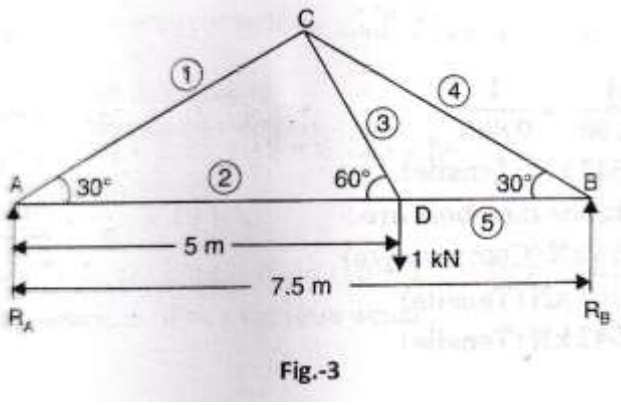

Fig.-3

SLR-UB-35

Seat No.	

Set P

B. Architecture (Semester - V) (CBCS) Examination: March/April-2023
History of Architecture –V (7023502)

Day & Date: Saturday, 22-07-2023 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 in the Blanks. **07**

a) _____ Was a Pioneer of Prairie School movement in architecture.
b) _____ Introduced the concept of modular based on the proportions of the human body.
c) _____ called his buildings as a 'Skin and Bone' Architecture.
d) AT & T Building is example of _____ style in Architecture.
e) Colourful, undulating tile work used for exterior finishes by the Architect ____.
f) National Congress designed by Architect_____.
g) Architect louis Sullivan used _____ panels in the exterior of the Wainwright Building.

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

a) Chicago School
b) Art Deco
c) Deconstructivism
d) Bauhaus School

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

a) Explain the Industrial Revolution with its causes and effects in Architecture and explain example Crystal Palace.
b) Explain philosophy of Architect Charles Correa with example Kanchanjunga Apartment.
c) Explain the Art Nouveau Movement with Antoni Gaudi's work and explain example Casa Mila in brief
d) Brief the philosophy and Work of Architect Laurie Baker with examples CDS.
e) Explain philosophy of Architect Frank Gehry with example Guggenheim Museum Bilbao.

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Seat No.	

Set P

B. Architecture (Semester – V) (CBCS) Examination: March/April-2023
Building Services – III (7023503)

Day & Date: Sunday, 23-07-2023 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Q.No.1 and Q.No.2 are compulsory.
2) Solve any 4 questions from the remaining.
3) Draw neat sketches wherever necessary.

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

1) Voltage = Current x _____.
a) Volts b) Ampere
c) Resistance d) Lux

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

3) Air conditioning involves _____.
a) control of temperature-humidity & airflow
b) only humidity
c) purity of air
d) temperature control

4) In traction lift, _____ is used to balance the weight of car.
a) driving ropes b) counter weight
c) buffers d) motor

5) The process of extraction of the certain required amount of water from air is known as _____.
a) heating b) cooling
c) dehumidification d) humidification

6) Tungsten filament is used in _____ lamp.
a) LED b) neon
c) incandescent d) fluorescent

7) An electronic device has a resistance of 20 ohms and a current of 15 A, then the voltage across the device will be _____.
a) 20V b) 300V
c) 1.5V d) 250V

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

a) Advantages of LED lamps over other lamps
b) Incandescent lamp with sketch
c) 10 Safety measures used in High rise residential building
d) Advantages and Disadvantages of conduit wiring system

Q.3		Draw a neat diagram of Three phase electric supply and explain in detail.	**12**
Q.4	**a)**	Draw any 3 arrangements of Escalators.	**06**
	b)	Explain working of escalator with sketch	**06**
Q.5		Draw a neat section through window air conditioner and label it. Explain its components and operation?	**12**
Q.6		Draw plan and section through traction lift and label its components and explain each component in short.	**12**
Q.7		Give any 8 points of comparison between Cleat wiring, Casing Capping wiring, Batten wiring and Conduit wiring.	**12**

SLR-UB-37

Seat No.	

Set P

B. Architecture (Semester – V) (CBCS) Examination: March/April-2023
Acoustics (7023504)

Day & Date: Monday, 24-07-2023 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) Make suitable assumptions wherever necessary.

Q.1 A) Fill in blanks. **07**

1) A bell radiates pure tone in_____ directions creating a circular wave front, traveling longitudinally.
   a) ALL b) ONE
   c) Z AXIS d) None of above

2) Two single impulses of different magnitude (amplitude) traveling away from source - amplitude information is carried by difference in _____.
   a) Pressure b) Level
   c) Reflection d) None of above

3) The number of times the cycle of compression and rarefaction of air occurs in a given unit of time is described as "_____" of sound.
   a) Frequency b) Wavelength
   c) Amplitude d) None of the above

4) The time taken by sound to diminish is called _____.
   a) Reverberation time b) Dead time
   c) None of the above d) Flutter

5) At sea level it is _____ m/s which is very slow compared to light.
   a) 344 b) 740
   c) None of the above d) 140

6) The _____ of sound is defined as the distance sound travels in one cycle.
   a) Frequency b) Wavelength
   c) db d) None of the above

7) Flutter is perceived as a buzzing or clicking sound and in comprised of repeated echoes traveling between tow _____ reflecting surfaces.
   a) Inclined b) Curved
   c) Parallel d) None of the above

B) Calculate total absorption required and design a theare for capacity of 500 people consider volume 5 m3 /person and Rt=1:1; use following absorption coefficient; give conceptual section and plan **27**

a) pop- 0.26
b) plaster-0.004
c) glass wool-0.15
d) occupied seat- 0.42
e) unoccupied seat-0.18
f) 3/4 inch plywood paneling-0.17
g) curtain-0.12

Q.2 **a)** Explain sound Attenuation by Distance. **12**

OR

b) Give design guide lines for open air theatre design.

Q.3 **a)** Explain with sketches optical model test method. **05**

b) Give sketches for planning window and door placement to reduce noise in building. **07**

Q.4 **WRITE SHORT NOTE ON ANY 3.** **12**

a) Use of vegitation as sound barrier.

b) Image source.

c) Quieting of Machine.

d) Sound Eco And Creeping.

SLR-UB-38

Seat No.	

Set P

B. Architecture (Semester –V) (CBCS) Examination: March/April-2023
Sustainable Building Materials (7023509)

Day & Date: Tuesday, 25-07-2023 Max. Marks: 50
Time: 10:00 AM To 01:00 PM

Instructions: 1) Q. No 1 and 2 are compulsory. solve any 4 from remaining.
2) Figures to the right indicate full marks.

Q.1 Fill in the blanks. **05**

a) _____ cladding elements are fixed on a metallic supporting frame.
b) VRE means _____
c) _____ is finely divided mineral residue resulting from combustion of coal in electric generating plants.
d) Thatch is _____ material when it comes to covering irregular roof structures.
e) Sustainable planning considers environmental social & _____ impacts of building.

Q.2 Write short notes on. (Any Three) **09**

a) Aluminum as a sustainable building material
b) End of Life of a product
c) Rammed earth
d) Fly ash bricks

Q.3 Write merits and demerits of sustainable building material **09**

Q.4 **a)** What is recycled plastic? **05**
b) Explain demerits of Bamboo in building. **04**

Q.5 **a)** What is cradle to grave approach? **05**
b) What is life cycle assessment? **04**

Q.6 **a)** Write two examples of reuse of materials in building. **05**
b) Benefits of Hollow concrete blocks **04**

Q.7 Explain the construction method for structures using ferrocrete. **09**

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Seat No.	

Set P

B. Architecture (Semester - VI) (CBCS) Examination: March/April-2023
Building Services – IV (7023603)

Day & Date: Friday, 21-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

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

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

a) _____ is defined as amount of oxygen required to oxidise the organic matter by strong oxidising agent under aerobic condition.
b) The phenomenon by the virtue of which a soil is clogged with sewage matter is called _____.
c) _____ are also known as percolating filters.
d) Leachate is a coloured liquid, that comes out of _____.
e) The process of settling suspended particles is known as _____.
g) _____ is termed as all the solid and the semisolid waste matters of a community except night soil.
h) The liquid waste from kitchen, bathroom and wash basin is known as _____.

Q.2 Write short note on any three. **15**

a) Activated sludge process.
b) Screening in sewage treatment plant.
c) Self - purification of streams.
d) Skimming tank.

Q.3 Explain natural methods of sewage disposal. **12**

Q.4 What are different types of privy? Explain pit privy and aqua privy with help of neat sketch. **12**

Q.5 Draw and explain layout of a typical sewage treatment plant. **12**

Q.6 With the help of neat sketch explain working of spetic tank. **12**

Q.7 What is refuse chute? Where is it used, explain with the help of neat sketch. **12**

SLR-UB-44

Seat No.	

Set P

B. Architecture (Semester – VI) (CBCS) Examination: March/April-2023
Building by laws (7023611)

Day & Date: Saturday, 22-07-2023 Max. Marks: 50
Time: 03:00 PM To 06:00 PM

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

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

1) _____ means an intermediate floor between two floors which is constructed for storage purpose.

a) Loft b) Mezzanine floor
c) Balcony d) Gallery

2) One refuse area on the floor immediately above 39 m and so on after every ____ m.

a) 24 b) 39
c) 15 d) 10

3) Fire Doorway for assembly building shall not be less than _____ m.

a) 2 b) 1
c) 1.5 d) 2.5

4) Exit shall be so located that the Travel distance for the Assembly building is _____ m

a) 20 m b) 22 m
c) 22.5 m d) 30 m

5) _____ means an enclosed space in a multi-storied building specially provided to serve as fire-proof space to gather easily for evacuation for the occupants.

a) Fire Stairway b) Fire Balcony
c) Refuse area d) Fire lobby

Q.2 Write short notes on: (Any 3) **09**

a) Recreational Open Space
b) Public-semipublic Zone
c) Setback/Marginal Distances
d) Mezzanine Floor

Q.3 Write answer in brief (any 3) **36**

a) Explain Fire exit provisions for special buildings.
b) Explain necessity of Unified Development Control and Promotion Regulations for Maharashtra State.
c) Explain the concept of Basement, podium and stilt with sketches.
d) Explain the requirements of building elements for Barrier free designs.

SLR-UB-45

Seat No.	

Set P

B. Architecture (Semester–VI) (CBCS) Examination: March/April-2023
Theory of Structure-VI (7023601)

Day & Date: Sunday, 23-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Q. No. 1 and Q. NO.2 is compulsory. from remaining question solve any Four.
2) Figures to the right indicates full marks.
3) Assume suitable data, if necessary.
4) Use of scientific calculator and IS 456 is allowed.

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

1) The minimum number of main steel bars provided in R.C.C.
a) Rectangular columns is 4 b) Circular columns is 6
c) Octagonal columns is 8 d) All The above

2) For a simply supported beam, effective length is taken as
a) Centre to centre distance between supports
b) Clear distance + effective depth of slab
c) Minimum of a) and b)
d) None of the above

3) The number of threads in a flight is equal to _____.
a) Risers in the flight b) Risers plus one
c) Risers minus one d) None of the above

4) The self-weight of a foundation is assumed as _____.
a) 5% of the load b) 10% of the load
c) 15% of the load d) 25% of the load

Q.2 Write a note on types of staircases. **06**

Q.3 Design a simply supported slab for a hall of 2.5m X 6m with 250mm 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. **14**

Q.4 Simply supported beam of length 5m is carrying UDL of 25 KN/m. Analyse and design the beam. Use M20 grade of concrete and Fe415 steel. **14**

Q.5 Design a rectangular column of 4m unsupported length, restrained in position and direction at both ends to carry an axial load of 900KN. Use M20 grade of concrete and Fe415 steel. **14**

Q.6 **a)** Differentiate between working stress method and limit state method. **06**
b) Write a note on types of foundations. **08**

Q.7 Design axial footing to carry 700KN load. Take safe bearing capacity of soil as 160KN/m^2. Use M20 grade of concrete and Fe500 steel. **14**

SLR-UB-46

Seat No.	

Set P

B. Architecture (Semester – VI) (CBCS) Examination: March/April-2023
Urban Planning (7023604)

Day & Date: Monday, 24-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Question No. 1 and 2 are compulsory.
2) Solve any 4 questions from remaining 5 questions.
2) Figures to the right indicate full marks.
3) Draw neat illustrative sketches to support answer wherever necessary.

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

a) _____stands for city and industrial development corporation.
b) _____advocated the theory of ekistics & dynopolis.
c)The population per unit area is defined as _____of population
d) Chandigarh city was planned by eminent town planner_____
e) In 1903 the first garden city of _____ was started around 35 miles away from London
f)_____ gave the concept of garden city.
g) in Greek _____a market place suituaited at the center of town.

Q.2 Explain the terms. (Any Three) **15**

a) Radial street pattern
b) Sir patric geddes
c) Satellite town
d) Commercial zone

Q.3 What are the major urban planning features in ancient cities elaborate with example? **12**

Q.4 Explain the concept of zoning and differentiate between density zoning and height zoning. **12**

Q.5 Explain with neat sketches the urban planning of Gandhinagar. **12**

Q.6 Write a note on growth of towns and differentiate between the planned growth and natural growth of towns **12**

Q.7 What is importance and objectives of urban roads and how are urban roads classified? **12**

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Seat No.	

Set P

B. Architecture (Semester - VI) (CBCS) Examination: March/April-2023
Estimating Specifications & Costing – I (7023602)

Day & Date: Tuesday, 25-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 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 Solve any four from the following. **08**

1) Unit of wood work for door shutters is _____.
a) Square metre b) Metre
c) Cubic metre d) Numbers

2) Which of the following is used to find quantities _____.
a) Long wall short wall method b) Centre line method
c) Both a) and b) d) None of the above

3) Unit of stone masonry if thickness provided is _____.
a) Square metre b) Metre
c) Cubic metre d) Numbers

4) The excavation exceeding 1.5m in width, 10 sq. m in plan area with a depth not exceeding 30cm is termed as _____.
a) Excavation b) Surface dressing
c) Cutting d) Surface excavation

5) Due to change in price level, a revised estimate is prepared if the sanctioned estimate exceeds _____.
a) 2.0 % b) 2.5 %
c) 4.0% d) 5.0%

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

a) Write a note on contingencies and work charged establishment.
b) Explain approximate estimate and revised estimate.
c) State rules for deductions of openings for internal plaster.

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 (1:4)
d) DPC in cement concrete.
e) Mosaic tiled flooring in all rooms.
f) Internal plaster in CM (1:3).
g) RCC lintel.

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

a) Excavation in soft murum in foundation, Rs. 550/- per Cum.
b) PCC bed in foundation (1:4:8), Rs.5600/-Cum.
c) UCR masonry in foundation and plinth in CM (1:4), Rs. 3600/- per Cum.
d) DPC in cement concrete, Rs.6000/-Cum.
e) Mosaic tiled flooring in all rooms, Rs. 1500/- per Sqm.
f) Internal plaster in CM (1:3), Rs. 380/- per Sqm.
g) RCC lintel, Rs. 7400/- per Cum

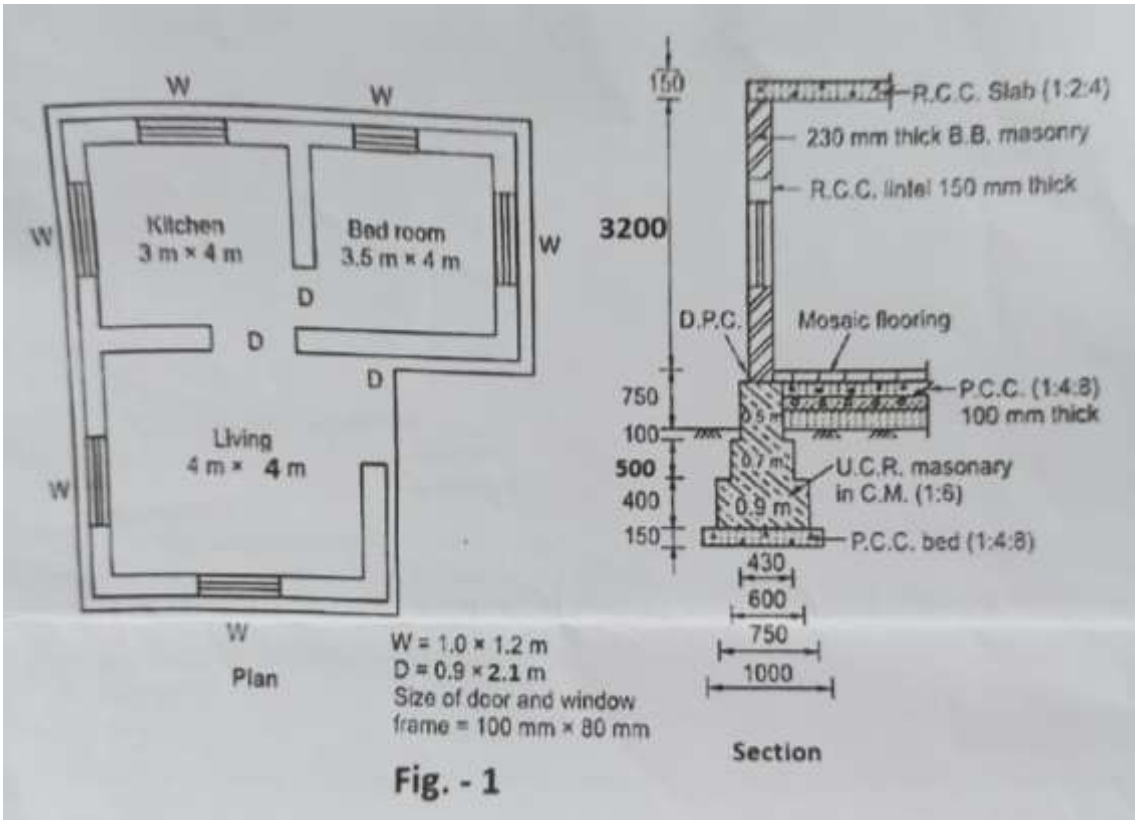

Fig. - 1

SLR-UB-48

Seat No.	

Set P

B. Architecture (Semester - VII) (CBCS) Examination: March/April-2023
Professional Practice - I (7024701)

Day & Date: Saturday, 15-07-2023 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 Fill in the blanks. **07**

1) Architects act was enacted in the year _____.
2) _____ is an offer made by one party to another for execution of specified work at a specified cost.
3) IIA stands for _____.
4) Security Deposit usually varies _____ percent of the estimated cost of the project.
5) The _____ of the architect expires after two years from the date of completion of relevant part of the work.
6) Contract is _____ by law in writing.
7) The Indian contract act was enacted in the year _____.

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

a) Structure of an Architect's office
b) Demolition Tender
c) Architectural copyright
d) Earnest money deposit (EMD)

Q.3 Answer the following (any 4). **48**

a) Explain in detail the duties of an Architect towards client and society.
b) Which are the various stages and percentage of payment of Architects fees as per C.O.A?
c) Define Tender, write the classification of the nature of tender. Differentiate between Item Rate and Lump sum Tender.
d) Define Contract, Explain Cost -Plus Fixed Fee Contract and Cost-Plus Percentage Contract.
e) Explain Architects duties and liabilities under the contract.

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Seat No.		Set	P

B. Architecture (Semester - VII) (CBCS) Examination: March/April-2023
Theory of Structure- VII (7024702)

Day & Date: Sunday, 16-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Use of scientific calculator, IS 456 and IS 13920 is allowed.
2) Q. No. 1 and Q. No. 2 is compulsory. from remaining questions solve any four.
3) Figures to the right indicate full marks.
4) Assume suitable data if necessary.

Q.1 Select the correct option from the following. **08**

1) Indian code of practice for design of structures using earthquake load is _____.
a) IS 456 b) IS 3370
c) IS 1893 d) IS 875

2) The diameter of bulb used for under reamed pile is _____.
a) Same as diameter of pile b) 2.5 × diameter of pile
c) 1.5 × diameter of pile d) 2.5 + diameter of pile

3) Thickened part of a flat slab over its supporting column, is technically known as _____.
a) Drop panel b) Capital
c) Column head d) None of the above

4) Why a concrete is prestressed?
a) To reduce the amount of concrete used in construction
To reduce the amount of materials used and transported
To improve durability and service life
All of the above

Q.2 Write note on Flat slab with sketches. **06**

Q.3 Design a circular tank of capacity 4,00,000 litres with flexible connection at base. The tank is rest on the firm level ground. The tank is open at top with free board of 180mm. Use M20 grade of concrete and Fe415 steel. **14**

Q.4 **a)** Write a detailed note on pre-tensioning and post-tensioning **06**
b) Describe advantages of framed structure over load bearing structure. **08**

Q.5 **a)** Write a note on design concept of pile foundation. **06**
b) What are the precautions to be taken while planning a structure earthquake prone area. **08**

Q.6 **a)** Write a note on Portal frames and rigid frames. **06**
b) Explain in detail structural behaviour of waffle slabs and shells. **08**

Q.7 Calculate the stresses at top and bottom fibres for a prestressed beam of 6m span. A prestressing force of 1200KN is applied at an eccentricity of 100mm. The beam is loaded with UDL of 25KN/m. Size of beam is 400mm × 650mm. Also draw stress distribution diagram. **14**

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Seat No.	

Set P

B. Architecture (Semester – VII) (CBCS) Examination: March/April-2023
Estimating Specification & Costing- II (7024703)

Day & Date: Monday, 17-07-2023 Max. Marks: 70
Time: 03:00 PM To 06:00 PM

Instructions: 1) Q.1 and Q.2 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. **07**

1) In absence of detailed design, volume of steel in RCC column is taken as _____ of RCC volume.
a) 2% to 5% **b)** 0.5 % to 1 %
c) 0.7 % to 1 % **d)** 1 % to 5 %

2) In absence of detailed design, volume of steel in RCC beam is taken as _____ of RCC volume.
a) 0.5 % to 2% **b)** 0.5 % to 1 %
c) 0.7 % to 1 % **d)** 1 % to 2 %

3) Equation for sand Requirement (In m^3) as Recommended by CBRI for Double Storey building is _____.
a) 0.376A-5.6 **b)** 0.251 A-7.8
c) 0.35A-0.15 **d)** 0.31-2.78

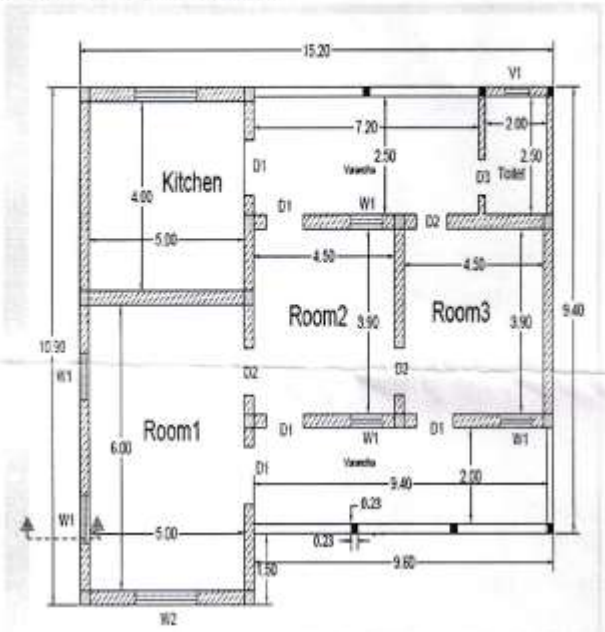
4) Equation for Steel Requirement (In kg) as Recommended by CBRI for Double Storey building is _____.
a) 21.97A-305 **b)** 21.3A-314
c) 21.97A-305 **d)** 21.97A-305

Q.2 Answer <u>Any two</u> of the following questions. **12**
a) Calculate the quantity of CA, FA, Cement, Water required for M20concrete.
b) Write Rules for deduction for opening as per IS 1200.
c) Define Estimating and costing and write their pusposes.

Q.3 Answer <u>Any three</u> of the following questions. **15**
a) State factors affecting rate analysis.
b) PFind the quantity of material required for 1 m^3 of brickwork with CM 1:6.
c) Draft a tender notice for construction of library building of polytechnic college costing Rs 2 crore. Assume all necessary information.
d) Explain the procedure of submitting filled tender documents by the contractor.

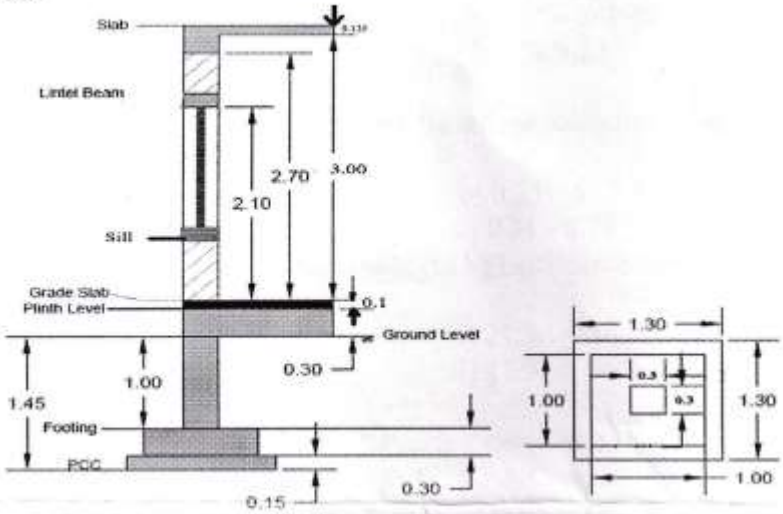
Q.4 Workout quantities of the following items of work. **35**
a) Excavation
b) Foundation
c) RCC column
d) Brickwork
e) Plinth beam
f) slab beam

SCHEDULE OF OPENING AND RCC WORK:



Plan

D1 : (1.2 × 2.1)
D2: (1 × 2.1)
D3: (0.75 × 2.1)
W1: (1 × 1.5)
W2: (2 × 1.5)
V3: (0.6 × 0.45)
Column 1 : (0.3 x 0.3)
Column 2 : (0.23 x 0.23)
Plinth beam (0.3 x 0.3)
Floor beam : (0.23 x0.3)



Section

SLR-UB-51

Seat No.	

Set P

B. Architecture (Semester - VIII) (CBCS) Examination: March/April-2023
Professional Practice - II (7024801)

Day & Date: Saturday, 15-07-2023 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 in the blanks. **07**

1) A panel of arbitrators appointed to adjudicate on the issues is known as _____.
2) _____ is the person to whom the dispute and differences are referred for necessary adjudication.
3) In limited competition, approximately _____ architects are invited to participate.
4) The land for the beneficial enjoyment of which the right of easement exists is called the _____.
5) The land acquisition act was enacted in _____.
6) FSI is the ratio of _____.
7) The land acquired under land acquisition act should be _____ from all encumbrance.

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

a) Continuous and Discontinuous easement
b) Limited competition
c) Principles of land acquisition act
d) Necessity of bye-laws

Q.3 Answer the following (any 4) **48**

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

SLR-UB-52

Seat No.	

Set P

B. Architecture (Semester – VIII) (CBCS) Examination: March/April-2023
Project Management (7024802)

Day & Date: Sunday, 16-07-2023 Max. Marks: 70
Time: 10:00 AM To 01:00 PM

Instructions: 1) Q.1 and Q.2 are compulsory. From remaining questions solve any four.
2) Figures to the right indicate full marks.
3) Assume suitable data if necessary.

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

a) A _____ activity in the network neither requires time nor resources.
b) CPM network is _____ oriented.
c) The latest time by which an event must occur to keep the project on schedule is known as _____.
d) PERT stands for _____.
e) In a bar chart the vertical axis represents _____.
f) The technique used to reduce or shorten the project schedule is called _____.
g) The term slack is used in _____ oriented network.

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

a) Differentiate between CPM and PERT.
b) Write a note on event and give its examples.
c) Write a note on Gantt chart and explain it with suitable diagram.
d) Explain
i) Normal time
ii) Crash time
iii) Normal cost
iv) Crash cost
v) Cost slope

Q.3 Write Short notes on

a) Write a note on earlier and current Tax system in India. **06**
b) Use of Computer and various software's used for Project Management. **06**

Q.4 a) Explain the background of Project Management. **08**
b) What is Project Management? **04**

Q.5 a) Draw a network diagram for the following activities and determine the Critical Path. **06**

Activity	Duration	Predecessor
A	2	-
B	3	-
C	4	-
D	1	A
E	2	B
F	5	B
G	7	C
H	2	D,E
I	3	F,G
J	1	H,I

b) Draw a Bar/ Gant chart for the following points. **06**

A project consists of 8 activities A, B, C, D, E, F, G and H with the duration of 9, 13, 6, 7, 18, 9, 16 and 15 respectively.

- Activities A and B can commence simultaneously and both the activities are independent.
- Activity C is succeeding activity B but is independent of A.
- Activity D is independent of C. It can start earlier to commencement of C, but after A and B have commenced.
- Activity E is succeeding Activity D
- Activity C and F can commence simultaneously, both these activities can start only after Activity B is completed
- Activity G can start only if Activities A and D are completed.
- Activity H can commence after activities D and G are completed.
- End of Activity H is completion of project.

Q.6 Following Table gives the data about duration and costs **12**

Activity	Normal Duration (Weeks)	Normal Cost (Rs.)	Crash time by (Weeks)	Crash cost (Rs.)
A (1-2)	4	100	1	130
B (1-3)	3	140	1	160
C (1-4)	3	200	1	240
D (2-5)	5	100	2	200
E (3-6)	2	50	1	80
F (4-6)	10	150	9	180
G (5-6)	7	200	5	250

Indirect Cost = 50 Rs/ week

- Find out total project cost for above table.
- Carry out stage by stage compression of network for above table.
- Find optimum duration and minimum cost for above table.

Q.7 General Provisions of Factories Act. **12**

SLR-UB-700

Seat No.		Set	P

Marks Obtained		Signature of Examiner		Signature of Junior Supervisor	

B. Architecture (Sem - II) (First Year) Examination: March/April-2023
Democracy, Elections and Good Governance (E2018DEG)

Day & Date: Sunday, 30-07-2023 Max. Marks: 50
Time: 10:00 AM To 12:00 PM

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

Answer

Q.1 Choose the correct alternatives from the options.

1) Which among the following is not a feature of Representative Democracy?
a) It is a practicable form of democracy.
b) It relieves ordinary citizens the burden of decision making.
c) It allows governed to be placed in the hands of those with better education, expert knowledge and greater experience.
d) Ordinary people directly decide their own policies

2) The number of total states in India, today is:
a) 25 b) 29
c) 27 d) 28

3) Direct democracy is the system in which _____.
a) Citizens choose their representatives in free and fair elections.
b) Citizens are allowed to debate with their representatives in open public meetings.
c) Citizens represent themselves in the decision-making process.
d) None of above.

4) Which among the following is not a fundamental right?
a) Right to equality b) Right to freedom
c) Right to rule others d) Right to freedom of religion

5) Which among the following are the key dimensions of good governance?
a) Accountability
b) Legal framework for development
c) Information and transparency
d) All of above

6) Indian parliament passed law regarding compulsory & free child education in _____.
a) 2002 b) 2005
c) 2007 d) 2009

7) Which among the following is not a principle of Democracy?
a) Government by consent
b) Public Accountability
c) Monopoly
d) Constitutional government and Rule of Law

8) The number of total Union Territories in India today is:
a) 8 b) 9
c) 7 d) 5

9) Which among the following are challenges before democracy?
a) Less representation of women
b) Corruption
c) Illiteracy among citizens
d) All of above

10) For the good Governance, a government needs _____.
a) Public Participation b) Centralization
c) Privatization d) None of The Above

11) The word 'Democracy' has been derived from the Greek word 'Krates' which means:
a) Common people b) Citizens
c) Power/Rule d) Decentralization

12) Which among the following are the expectations from an individual?
a) Find out the name of elected local representative from your rural or urban area in which you live.
b) Register yourself in the voters list of your area.
c) Attend a Gram Sabha or Ward Meeting in your own area.
d) All of above

13) Democracy originated _____.
a) In ancient Greece
b) In the US after freeing itself from British tyranny
c) In India after freedom
d) In France after the revolution

14) In democratic Athens, which of the following people were not allowed to participate in politics?
a) Slaves b) Women
c) Both 'a' & 'b' d) Actors

15) State if the following statement is true or false:
If a voter doesn't wish to vote for any of the members in the list, he/she can select the option of NOTA.
a) True b) False
c) Partial true d) Partial False

16) Elections in India for Parliament and State Legislatures are conducted by _____
a) President b) Prime Minister
c) Governor d) Election Commission of India

17) Representative Democracy is also known as: _____
a) Limited b) Complete
c) Direct d) Incomplete

18) India has _____ citizenship system.
a) Single b) Double
c) Triple d) Multiple

19) In which part of the Indian constitution the fundamental rights are included?

a) Part-I b) Part-II
c) Part-Ill d) Part-V

20) In India, Emergency was declared during:

a) 1982 b) 1999
c) 1976 d) 1947

21) Which among the following is not a characteristic of good governance?

a) Public detachment b) Rule of Law
c) Transparency d) Accountability

22) The Indian parliament passed the 73rd and 74th amendments in the year:

a) 1993 b) 1996
c) 1994 d) 1997

23) At the national level, Indians directly elect their representatives to _____.

a) Loksabha b) Rajyasabha
c) Vidhansabha d) Vidhan Parishad

24) Which of the following is related to 'Right to work'?

a) NOTA b) RTI
c) MGNREGA d) None of the above

25) Which among the following is not a level of elections?

a) Regional b) Local
c) National d) State

26) The Right to Education (RTE) Act, 2009 refers to the students:

a) Who are of higher secondary Education
b) Whose age is between 6 years to 14 years
c) Who are graduate level students
d) Who are post graduate level students

27) The term 'Consensus' refers to the decision-making process in which:

a) Single person takes decision and others follow it.
b) The opinions of all the related people are considered.
c) People take individual decisions.
d) None of the above

28) Who was the Chairman of the Drafting Committee of the Indian Constitution?

a) Dr. Rajendra Prasad b) Dr. B. R. Ambedkar
c) M. K. Gandhi d) Jawaharlal Nehru

29) Who is the leader of the party with majority in Vidhansabha election?

a) President b) Chief Minister
c) Home Minister d) Vice President

30) Which of the following comprises of all the registered voters in a village?

a) Nagarpalika b) Gram Sabha
c) Nagar Parishad d) Municipal corporation

31) Who is the leader of the party with majority in Loksabha election?

a) President b) Chief Minister
c) Prime Minister d) Vice President

32) The percentage of women in the local government of India is:
a) 1/2 b) 1/3
c) 1/4 d) None of the above

33) Transparency & accountability can be seen in:
a) Ancient governance b) Bad governance
c) Good governance d) Both good and bad governance

34) The working period of Loksabha is:
a) 2.5 years b) 6 years
c) 2 years d) 5 years

35) The 'Sarpanch' gives his resignation to:
a) CEO b) BDO
c) President of Panchayat Samiti d) Collector

36) The Governor of India is elected by:
a) Home Minister b) Prime Minister
c) President d) None of the above

37) The collector of a district is administrative head of:
a) Police b) Health
c) Revenue d) All of the above

38) The symbol of Bahujan Samaj Party is:
a) Watch b) Elephant
c) Lotus d) Cycle

39) _____ defined democracy as the government of the people, by the people and for the people.
a) Donald Trump b) John Wood
c) Winston Churchill d) Abraham Lincoln

40) French Revolution started in the year _____.
a) 1787 b) 1897
c) 1789 d) 1832

41) Which of the following features is common for all democracies in the world?
a) Regular elections b) Multiple political parties
c) Formal constitution d) All of the above

42) In a democratic state, the citizens have right to involve in decision making process. This is the sign of:
a) Equality b) Transparency
c) Monopoly d) Legitimacy

43) In a democracy, there is usually delay in decision making and its implementation as:
a) The government is not positive for decision making.
b) A democratic state is reluctant for quick decisions.
c) Democracy has the base of deliberations and negotiations.
d) None of the above

44) Which one of the following does the democracy promote?
a) Economic growth
b) Freedom and dignity for an individual citizen
c) Power to the politicians
d) None of the above

45) _____ is the current Chief Election Commissioner of India.
a) Sunil Arora b) Sushil Chandra
c) Rajiv Kumar d) Om Prakash Rawat

46) Public Accountability means the representative must remain _____ to the people.
a) Opposite b) Answerable
c) Irresponsible d) None of these

47) There are _____ fundamental rights included in Indian constitution.
a) Four b) Ten
c) Two d) Six

48) _____ is miniature of the Parliament of India at the grassroots level.
a) Gramsabha b) Vidhanparishad
c) Loksabha d) Rajysabha

49) Municipal Corporation is part of the _____ local self-government
a) Rural b) Urban
c) Both d) Central

50) For eradication of corruption, _____ Commission was formed.
a) Election b) Central Vigilance
c) MGNREGA d) Finance

SLR-UB-701

Seat No.	

Set P

B. Architecture (Sem - IV) Examination: March/April-2023
Environmental Studies (ARCH2016)/22ENS

Day & Date: Sunday, 30-07-2023 Max. Marks: 70
Time: 02:00 PM To 05:00 PM

Instructions: 1) Q. No. 1 is compulsory. It should be solved in the first 30 minutes in answer book. Page no 03 (Starting page of the Answer Book). Each question carries one mark.
2) Don't forget to Mention question paper set (P/Q/R/S) on top of page.
3) Figures to the right indicates full marks.

MCQ/Objective Type Questions

Duration: 30 Minutes Marks:14

Q.1 Choose the correct alternatives from the given options. **14**

1) The word 'Environment' is derived from _____ language.
a) French b) Roman
c) Latin d) Greek

2) First World Environmental conference was held at _____.
a) Mumbai b) Stockholm
c) London d) Tokyo

3) Savanna is an example of _____ Ecosystem.
a) Desert b) Marine
c) Grassland d) Forest

4) The primary source of energy is _____.
a) Hydal energy b) Tidals
c) Sun d) Wind

5) The 'Wildlife Protection Act' was passed in the year _____ in India.
a) 1971 b) 1972
c) 1974 d) 1976

6) Marine life is in danger due to _____ Pollution.
a) Land b) Air
c) Water d) Noise

7) In India _____ region is rich in biodiversity
a) Western Himalaya – Aravali
b) Ajantha – Aravali
c) Eastern Himalaya – Western Ghat
d) Eastern Ghat – Koromandal

8) International Ozone Day is celebrated on _____ day.
a) 16th June b) 16th July
c) 16th August d) 16th September

9) Narmada Bachav Movement is related to _____ environmentalist
a) Sundarlal Bahuguna b) Medha Patkar
c) Rajendra Rana d) Narendra Modi

10) _____ waves are resulted due to earthquake in the ocean.

a) Rita b) Tsunami
c) Caterina d) Cyclone

11) _____ is decomposer in ecosystem.

a) Dog b) Tiger
c) Lion d) Bacteria

12) Punjab and Hariyana are in dispute over the sharing of _____ river water in India.

a) Krishna b) Narmada
c) Kaveri d) Sutlej

13) Appiko movement took place in _____.

a) Kerala b) Goa
c) Punjab d) Karnataka

14) The Kyoto Conference was held in the _____ country.

a) Japan b) China
c) USA d) India

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Seat No.	

Set P

B. Architecture (Sem - IV) Examination: March/April-2023
Environmental Studies (ARCH2016)/22ENS

Day & Date: Sunday, 30-07-2023 Max. Marks: 56
Time: 02:00 PM To 05:00 PM

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

Q.2 Answer the following questions. **14**
a) Importance of environmental studies.
b) Write the types of natural resources.

Q.3 Answer the following questions. **14**
a) Explain the types of biodiversity.
b) Components of Ecosystems

Q.4 Attempt Any One of the following: **14**
a) Explain the Wildlife Conservation Act.
OR
b) Explain the causes and effects of water pollution.

Q.5 Attempt Any One of the following. **14**
a) Explain the impact of population growth on the environment.
OR
b) Explain the types of conservation of Biodiversity.