

(6471)

2023-24
B.ARCHITECTURE (SEMESTER - III) EXAMINATION
CLIMATE AND DESIGN

ARC2030

Maximum Marks: 60

Credits: 04

Duration: Two Hours

Answer all the questions.

Assume suitable data if missing.

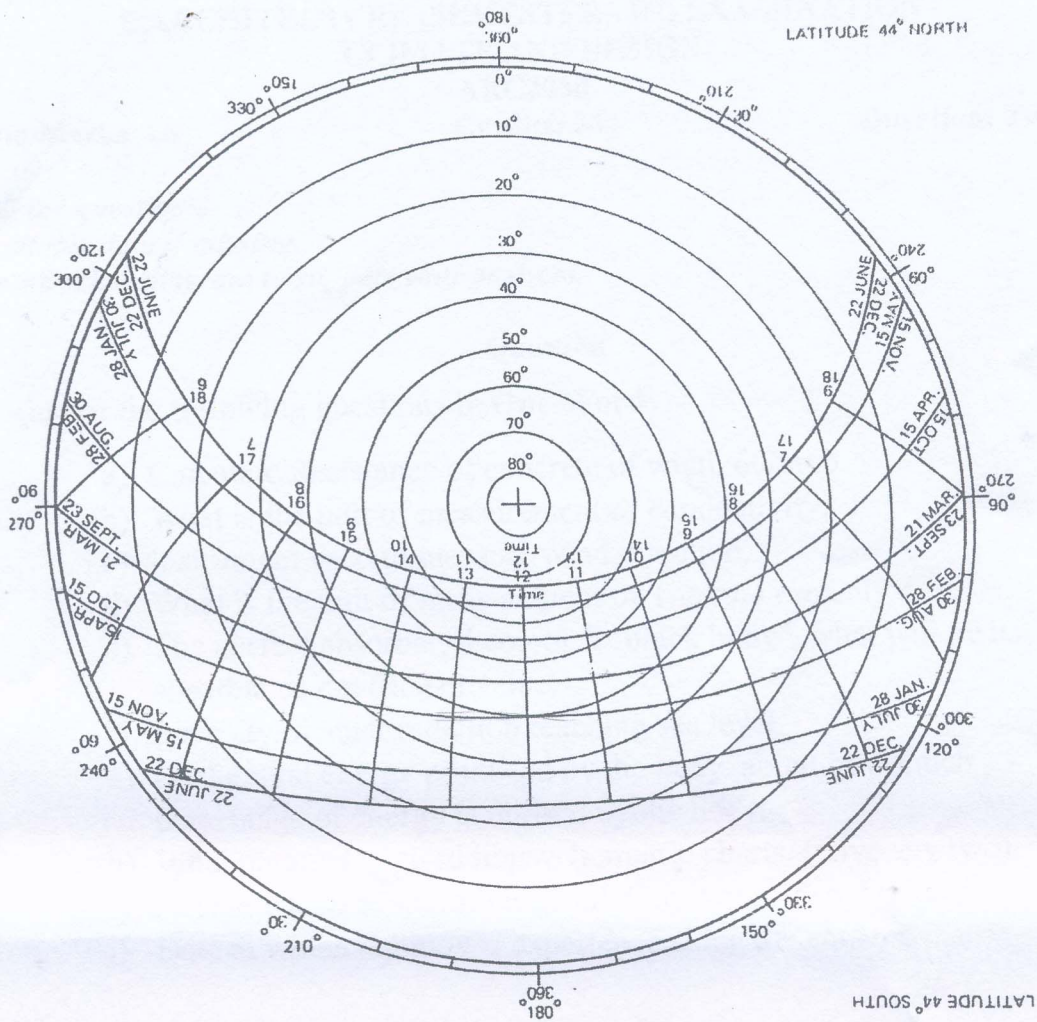
Draw neat sketches/diagram to support your answers.

Q.No.	Question	M.M.
1	Answer the following questions in One Word : - a) Calculate Resistance of concrete of width 600mm. b) What is the unit of measurement of conductivity. c) Instrument used to measure wind direction. d) What is the unit of measurement of Thermal capacity. e) The perfect absorber, theoretical "black body", what will be its absorbance coefficient value. f) Intensity of solar radiation reaching sea level. g) Of the total energy produced by the body, about how much percentage of energy is utilised by the body. h) What parameters used in psychometric charts. (Give any two) i) Rate at which evaporation in building is considered (Kg/hr). j) Date at which equinox is experience along the equator.	[10]
2	Define Any Five of the following: - a) Sol Air temperature b) Time Lag c) Decrement factor d) Coriolis Force e) Cosine Law f) Intelligent building g) Inter tropical convergence zone (ITCZ)	[10]
3	Write brief notes on any Two of the following: -	[10]

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- a) The Earth's Thermal balance.
 - b) Factors affecting human comfort and body's thermo-regulation mechanism.
 - c) Write brief notes on factors affecting Climatic Design..
 - d) Bio climatic charts and climate classification on psychometric chart.
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- 4 Difference between Indigenous, Vernacular and Modern architecture structures. [5]
 - 5 Briefly explain building and building fabric and thermal properties of the fabric. [5]
 - 6 Write brief notes on **any one** of the Conventions, Protocols or Commissions. [5]
 - 7 Calculate heat gain/loss to provide mechanical installation of required size using the following data. Room size of 10x10x4m high with an outdoor temperature (-2°C) is located in intermediate floor of a large building. It has one wall exposed to south direction and other walls adjoin rooms at same temperature of 22°C. A window is placed on south wall with dimension 8x2.5m. 10 fluorescent lights of 15 watts each used continuously to light the interior used by 10 draftsmen for work. Ventilation rate is 5 air changes per hour. U value of exposed wall with plaster is 2.0 W/sqm°C and U value of glass is 4.0 W/sqm°C. Incident solar radiation "I" IS 300 W/sqm and solar gain factor for window is "0" is 0.5. [7.5]
 - 8 Calculate the depth of horizontal shading device for a wall with window (1.5x1.5m) facing south on 30 of August at 2p.m. in northern hemisphere at 44° latitude. Use solar chart for the calculation. Also, calculate solar azimuth angle, solar altitude angle, horizontal shadow angle and vertical shadow angle. [7.5]

Contd....3.



2023-24
B.ARCH. (AUTUMN SEMESTER) EXAMINATION
CIVIL ENGINEERING

ARC 2050

BUILDING SERVICES – 1 (WATER SUPPLY AND SANITATION)

Maximum Marks: 60

Credits: 03

Duration: Two Hours

Answer all the questions.

Assume suitable data if missing.

Notations used have their usual meaning.

Q.No.	Question	M.M.
1 (a)	Differentiate between the qualities of surface and sub surface sources of water supplies.	04
1 (b)	What are the different demands of water for a town? Explain the various commercial and industrial water demand.	06
1 (c)	Explain various micropollutants found in water and wastewater	05
OR		
1'(a)	With the help of sketches describe the different layout of piping networks used in water distribution systems	10
1'(b)	The 3 day 27 ^o C BOD of a wastewater sample is 500 mg/L. Find the BOD if the test was performed at 20 ^o C and was continued till 5 days. Take k_{20} as 0.23 d^{-1}	05
2 (a)	Draw the water supply connection provided for residential buildings from distribution mains and explain the purpose of each unit.	07
2(b)	Explain how the capacity of overhead tanks is fixed for meeting out the peak water demand in combined gravity cum pumping system. Explain both graphical and analytical methods used for the same.	08

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3. (a)	Water having following characteristics to be softened by excess lime and soda process. Calculate the amount of chemicals required for the treatment of 20 MLD of water assuming purity of lime as 70% and that of soda ash as 80%. $Ca^{2+} = 50 \text{ mg/L}$, $Mg^{2+} = 24 \text{ mg/L}$, $Na^{+} = 46 \text{ mg/L}$, $CO_2 = 22 \text{ mg/L}$, $HCO_3^{-} = 175 \text{ mg/L}$ as $CaCO_3$, $SO_4^{2-} = 24 \text{ mg/L}$, $Cl^{-} = 65 \text{ mg/L}$ OR	10
3'. (a)	Describe the different types of water meters used in water supply systems	10
3. (b)	Describe the different types of building plumbing systems. Also write their suitability.	05
4.(a)	Draw different sewage treatment flowsheets using aerobic, anaerobic secondary treatment units. Explain the need of providing secondary treatment process	04
4 (b)	Design a septic tank for 50 users assuming sewage contribution per person as 50 L/d and period of cleaning as two years.	06
4 (c)	Draw the sketches of different taps used in water supply fittings.	05

2023-24

**B. ARCHITECTURE (ODD SEMESTER) EXAMINATION
ANCIENT ARCHITECTURE (INDIAN AND FAR EAST)****Maximum Marks: 60****ARC 2070
Credits: 03****Duration: Two Hours***Answer all the questions.**Assume suitable data if missing.**Support your answers through neat sketches.**Labelling of Sketches is essential.*

Q.No.	Question	M.M.
1	Discuss any 5 of the following- a) Sun Temple, Konark b) Lad Khan Temple, Aihole c) Hoysaleswara temple, Halebidu d) Indus Valley Civilization e) Virupaksha temple f) Dilwara group of Jain Temples g) Pattadakal group of temples	[25]
2	Discuss in detail the architectural features of ' Temples of Orissa Group ' in North India.	[10]
3	Explain in detail the characteristics features of Jain Temples in India.	[10]
4	Differentiate between Nagara and Dravidian style of temples.	[15]
OR		
4'	Discuss the Rock-cut architecture of Ancient India.	

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2023-24
B.ARCH. (ODD SEMESTER) EXAMINATION
ARCHITECTURE
CONSTRUCTION AND MATERIALS-II
ARC2330

Maximum Marks: 40

Credits: 05

Duration: Two Hours

Assume suitable data if missing.

Q.No.	Question	M.M.
1	Draw the construction details of (Attempt any 02)	[10X2=10]
(a)	Wooden Grillage Foundation	
(b)	Drop and round horseshoe arch	
(c)	Foundation for black cotton soil	
2	Draw and label the construction detail of two-panel wooden window with glazing showing its elevation, horizontal section and details with annotations. OR	[10]
2'	Compare the advantages and disadvantages of timber, stone and brick lintels	
3	Explain the following briefly: (Attempt any 02)	[5X2=10]
(a)	Types of non-ferrous metals used in construction	
(b)	Types of glass used in construction	
(c)	Types of shallow foundations	
4	What are the different ways to acoustically insulate walls? OR	[10]
4'	Explain pre-construction anti termite treatment procedure	

2023-24
B.ARCH. (ODD SEMESTER) EXAMINATION
ARCHITECTURE DESIGN II
ARC2630

Maximum Marks: 40

Credits: 07

Duration: Six Hours

Assume suitable data if missing.

Q.No.	Question	M.M.
1	<p>A Cafeteria is proposed in the campus of AMU and the owner plans to serve beverages and snacks in this Cafeteria. You are required to prepare a design proposal for this project of 60 seating capacity. The client is expecting efficient services and a good composition of form to make this cafeteria a landmark.</p> <p>Any other essential services may be added. The details of the site are attached on the next page.</p> <p>The brief of spatial requirements is as follows:</p> <ol style="list-style-type: none"> i. Kitchen (approx. 40m²) including all services ii. Semi-covered and open seating spaces iii. Parking for 20 bicycles iv. Landscape (hardscape and softscape) <p>You are required to submit the following on suitable scale.</p> <ol style="list-style-type: none"> (a) Plans (including Site plan) (b) Elevation(s) (c) Section(s) (d) View(s) (e) Concept and Viva-voce 	<p>[15]</p> <p>[05]</p> <p>[05]</p> <p>[05]</p> <p>[10]</p>

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THE SITE

