

--	--	--	--	--	--	--	--

B.Arch. Degree II Semester Regular Examination April 2022

AR 1202 BUILDING MATERIALS AND CONSTRUCTION II (2021 Scheme)

Time: 4 Hours

Maximum Marks: 100

Instructions: *Illustrations in answer carry due mark. Credit will be given for following standard architectural drafting and detailing conventions.*

PART A (Answer **ALL** questions)

(8 × 5 = 40)

- I. Write short notes on:
- Veneer
 - Plywood
 - Pivoted windows
 - Louvred window
 - Span
 - Lintels
 - Load bearing wall
 - Brick masonry.

PART B

(4 × 10 = 40)

- II. What are the causes of decay in timber? Discuss the various defects in timber. Which are the various methods for timber seasoning?
- OR**
- III. Explain the need for seasoning of timber. What are the methods of seasoning timber?
- IV. List various hardwares available for use for doors and windows in Kerala. Describe their selection criteria.
- OR**
- V. Differentiate single leaf and double leaf paneled door with the help of sketches.
- VI. Explain different types of lintel. Sketch the detail of RCC Lintel.
- OR**
- VII. Explain in detail with the help of sketches different types of arches.
- VIII. Sketch and detail simple foundations for load bearing walls in brick masonry.
- OR**
- IX. Explain in detail timbering to trenches for various types of soil.

PART C (Drawing Sheet)

(1 × 20 = 20)

- X. Draw to a suitable scale the plan, elevation and section of a fully glazed window with mullion(s) and with transom for an opening of size 1.5 m × 1.5 m. Name the parts and indicate the size of each member.
- OR**
- XI. Draw to a scale any three arches. Label the drawing fully with dimensions, names and size of parts.

--	--	--	--	--	--	--	--	--	--

B.Arch. Degree II Semester Regular Examination April 2022

**AR 1203 HISTORY OF ARCHITECTURE II:
EUROPE-CLASSICAL TO RENAISSANCE
(2021 Scheme)**

Time : 3 Hours

Maximum Marks : 100

(Illustrate your answers with sketches. Illustrations carry due marks)

PART A
(Answer **ALL** questions)

(8 × 5 = 40)

I. Write short notes on the following:

- (a) Parthenon.
- (b) Pantheon.
- (c) Domes and Pendentives of Byzantine Architecture.
- (d) Early Christian Baptistry.
- (e) Characteristics of English gothic architecture.
- (f) Gothic arches and flying buttresses.
- (g) Villa Rotonda.
- (h) Contributions of Filippo Brunelleschi.

PART B

II. Compare and contrast the features of Ancient Greek Classical orders.

(4 × 15 = 60)

OR

III. Explain the history, evolution and architectural characteristics of Ancient Rome with relevant examples.

IV. Explain salient features of early Christian architecture. Elaborate the answer with a detailed sketch of an Early Christian church.

OR

V. Explain in detail the history, evolution and architectural characteristics of Byzantine Architecture describing the characteristics of Hagia Sophia.

VI. Enumerate the feature of French Gothic style taking the case of Notre dame as an example.

OR

VII. Briefly explain the architecture of

- (i) Pisa Cathedral
- (ii) Durham Cathedral.

VIII. Explain in detail the history, evolution and architectural characteristics of Renaissance Architecture describing the characteristics of St. Peters Rome.

OR

IX. Briefly explain the architecture of

- (i) Florence Cathedral
- (ii) Renaissance palaces.

B.Arch. Degree II Semester Regular Examination April 2022

AR 1204 THEORY OF STRUCTURES I - INTRODUCTION TO STRUCTURES (2021 Scheme)

Time: 3 Hours

Maximum Marks: 100

PART A (Answer ALL questions)

(8 × 5 = 40)

- I. (a) Explain systems of forces and triangular law of forces.
 (b) Define angle of repose.
 (c) Explain parallel axis and perpendicular axis theorem.
 (d) Locate the center of gravity of a rectangular lamina.
 (e) Explain stress and different types of stresses.
 (f) Explain elastic constants and relationship between them.
 (g) List out the types of supports and explain it.
 (h) Define the term shear force and bending moment diagram.

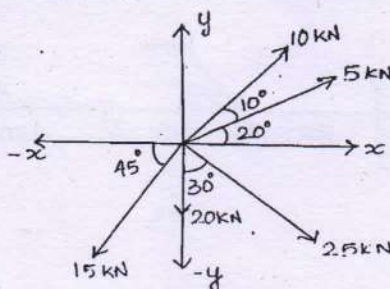
PART B

(4 × 15 = 60)

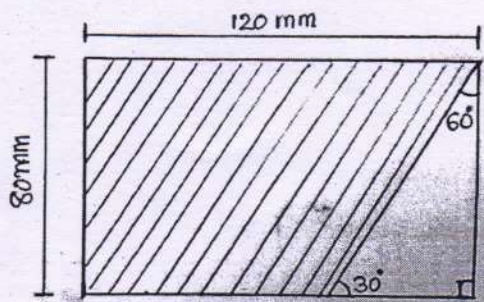
- II. The forces 10 N, 20 N, 30 N, 40 N and 50 N are acting on one of the angular points of a regular hexagon, towards the other five angular points, taken in order. Find the magnitude and direction of the resultant.

OR

- III. Determine the resultant of the system of forces shown.



- IV. Calculate the moment of inertia of the section given below.

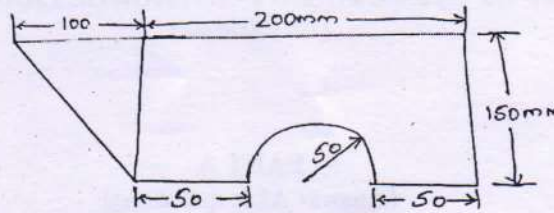


OR

(P.T.O.)

B.Arch-II(R)-04-22-2032

- V. Locate the centroid of the figure shown below.

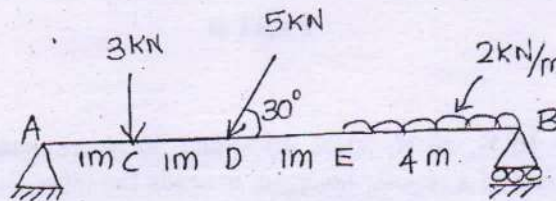


- VI. A weight of 250 kN is supported by three short pillars each of 600 mm^2 in cross-section, The central pillar is of steel and outer pillars are of copper. The pillars are so adjusted that at a temperature of 20°C each pillar carries equal load. If the temperature is raised to 120°C , compute the stresses induced. $E_s = 200 \text{ GPa}$, $E_c = 80 \text{ GPa}$, $\alpha_s = 12 \times 10^{-6}/^\circ\text{C}$ and $\alpha_c = 18 \times 10^{-6}/^\circ\text{C}$.

OR

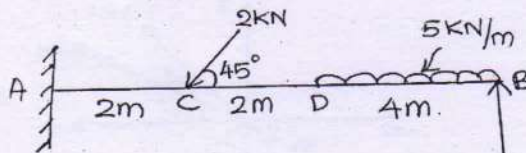
- VII. Draw the detailed stress strain curve and explain each point in curve.

- VIII. Calculate the support reactions of the beam given below.



OR

- IX. Draw the shear force and bending moment diagram of the beam shown below.



--	--	--	--	--	--	--	--	--	--

B.Arch. Degree II Semester Regular Examination April 2022**AR 1205 ENVIRONMENTAL STUDIES**
(2021 Scheme)

Time: 3 Hours

Maximum Marks: 100

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

- I. Write short notes on the following:
- Forest ecosystem.
 - Biodiversity.
 - Marine pollution.
 - Global warming.
 - Passive solar heating.
 - Population explosion.
 - Environmental protection act 1986.
 - Coastal Regulation Zone.

PART B

(4 × 15 = 60)

- II. Define ecosystem and list out the types of ecosystem. Explain grassland ecosystem, its characteristics, structure and functions.
- OR**
- III. What are the threats to biodiversity and explain about the conservation methods of biodiversity?
- IV. Explain water pollution, its issues, effects and control measures.
- OR**
- V. Write a brief note on solid waste management and explain the methods used for effective solid waste management.
- VI. Elaborate on the environmental impacts of construction industry and possible remedial measures to reduce the impacts.
- OR**
- VII. Describe the impacts of increasing human population on environment.
- VIII. What are the salient features of Wild Life Protection Act 1976?
- OR**
- IX. Describe Air Prevention and Control of Pollution Act, 1981.

B.Arch-II(R)-04-22-2033

Reg. No.

--	--	--	--	--	--	--	--	--	--

C

B.Arch. Degree II Semester Regular Examination April 2022

AR 1206 ARCHITECTURAL DRAWING AND GRAPHICS II (2021 Scheme)

Time: 4 Hours

Maximum Marks: 100

(Candidates will be supplied with one A2 drawing sheet)

(4 × 25 = 100)

- I. What is Photography? Describe photographic techniques, history and development.
- OR**
- II. Draw a well-planned City using One-point perspective in Birds eye view, showing appropriate light and shadow using with any medium.
- III. Why Renaissance art seen as the revival of European art? Communicate ideas with renaissance Artists and their artworks.
- OR**
- IV. What are the elements of paintings? Give detail description of any two most famous paintings in the western art.
- V. What is Environmental Graphics? How does it work in enhancing the built environment?
- OR**
- VI. Create a multi coloured awareness poster "Addictions of Mobile phones". Size (24x38cm).
- VII. What are the fundamental differences between Art and Design and how are they related with Architecture?
- OR**
- VIII. Explain Color Theory along with Color Wheel.
