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***B.Arch. Degree II Semester Regular/Supplementary Examination
July 2024***

**AR 1206 ARCHITECTURAL DRAWING AND GRAPHICS - II
(2021 Scheme)**

Time: 4 Hours

Maximum Marks: 100

(Candidates will be supplied with one A-2 size handmade drawing sheet)

(4 × 25 = 100)

- I. (a) What are the basic elements of painting? Explain it with illustrative sketches.

OR

- (b) Briefly explain renaissance period giving emphasis to visual arts.

- II. (a) Design a multi- coloured poster in A3 size (11 × 16 inch) for the campaign 'against the usage of drugs' by the Department of Health, Kerala.

OR

- (b) Choose an appropriate name for a Landscape Architecture firm and design a logo for the same. Size A4 (8 × 11 inch)

- III. (a) Briefly explain the historical development in the field of photography.

OR

- (b) Explain in detail the types of camera angles and shots in photography.

- IV. (a) What are the three principal theories of art criticism? Explain at least two in detail.

OR

- (b) Describe the relation between Art, Design and Architecture.

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***B.Arch. Degree II Semester Regular/Supplementary Examination
July 2024***

**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:
- (a) Structure of ecosystem.
 - (b) In-situ and ex-situ conservation.
 - (c) Vermin Culture.
 - (d) Environmentalism.
 - (e) Day lighting.
 - (f) Micro climate.
 - (g) Pollution Act.
 - (h) Site –micro climate.

PART B

(4 × 15 = 60)

- II. What is an ecosystem? Describe in detail the characteristics of any four ecosystems in the world.
- OR**
- III. Explain the term Biodiversity and its consumptive, productive, social and optional values.
- IV. Briefly explain different concepts of environmentalism. Point out cause, effect and control measures for land pollution, water pollution and air pollution.
- OR**
- V. Mention some of the practices that can be adopted as an architect to reduce environment pollution.
- VI. Discuss with sketches some of the passive cooling construction techniques used in architecture.
- OR**
- VII. Explain in detail the issues and control measures of population growth, urbanization, Loss of wetlands and resource exploitation is affecting the environment.
- VIII. What is CRZ? Describe in detail various CRZ zones.
- OR**
- IX. Explain in detail about the following
- (i) Environmental Protection Act
 - (ii) Wild Life Protection Act
 - (iii) Forest Conservation Act.

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**B.Arch. Degree II Semester Regular/Supplementary Examination
July 2024**

**AR1204 THEORY OF STRUCTURES I- INTRODUCTION TO STRUCTURES
(2021 Scheme)**

Time: 3 Hours

Maximum Marks: 100

**PART A
(Answer ALL questions)**

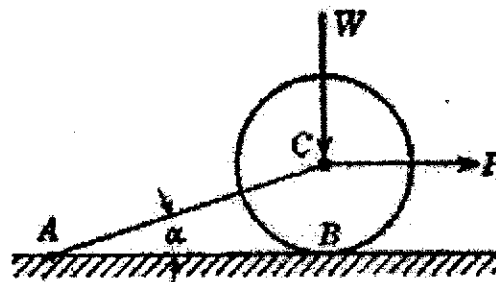
(8 × 5 = 40)

- I. Write short notes on:
- State Lami's theorem.
 - Explain different force systems.
 - What is parallel axis theorem?
 - Derive the moment of inertia of a rectangular section.
 - What are the different types of stresses?
 - Explain elastic constants and relationship between them.
 - Draw the bending moment diagram of a cantilever beam with udl in full span.
 - List out the types of supports and explain.

PART B

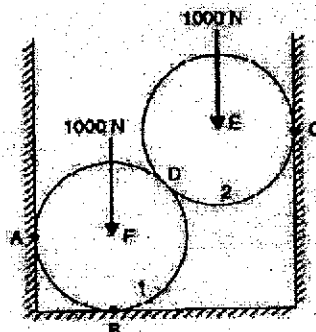
(4 × 15 = 60)

- II. A right circular roller of weight W of 10kN rests over a smooth horizontal plane. It is subjected to a horizontal pull of P of 2kN and the roller is held in position by a string AC as shown below. Find the tension in the string and reaction at B if angle of inclination of string is 20 degree to horizontal.



OR

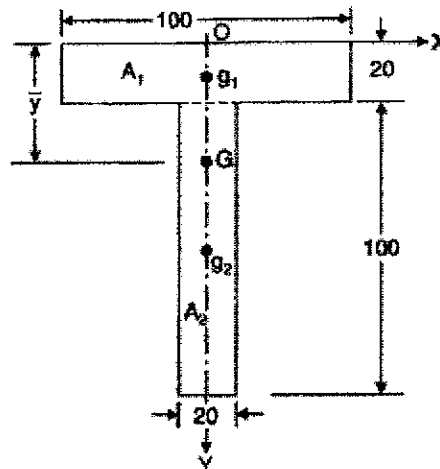
- III. Two cylinders are kept in a channel as shown in figure. Determine the reactions at all the contact points A , B , C and D . Assume the contact surfaces are smooth. Radius of the cylinder is 30cm and the diameter of the channel is 100cm.



(P.T.O.)

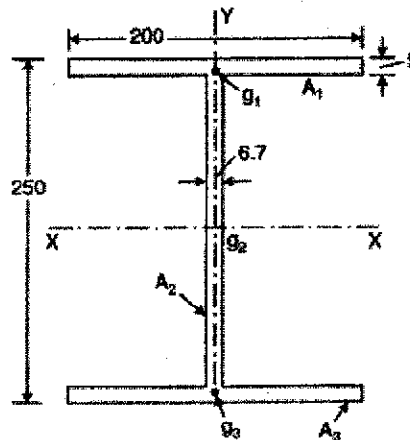
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- IV. Locate the centroid of the area shown in figure.



OR

- V. Calculate the moment of inertia of the I section shown in figure with respect to centroidal axis. XX and YY.



- VI. Calculate the change in length of a RCC column of size 450 mm by 450 mm consisting of four bars of 20 mm diameter. It is carrying a load of 2000 kN passing through the centroid of the column section. The ratio of E_s to E_c is 18. Length of the column is 3.5 m. E_s is 2.2×10^5 MPa.

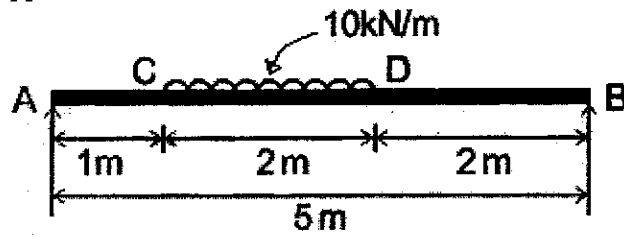
OR

- VII. A steel bolt of diameter 19 mm passes through a copper tube of inner diameter 24 mm and outer diameter of 34 mm. The bolt has threads of pitch 2.4 mm at one end. Nut is turned on the bolt through 52 degrees so as to tighten the assembly. Find the stresses developed in the bolt and the tube. The length of the assembly is 48 cm. The ratio of modulus of elasticity of steel with copper is 1.7. And E for steel is 200 kN/mm^2 .

(Continued)

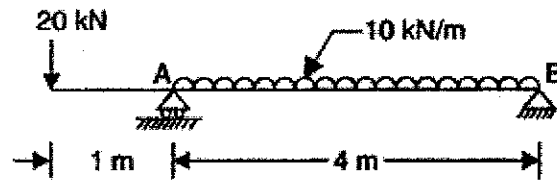
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VIII. Find the support reaction of the beam shown in figure.



OR

IX. Draw the shear force diagram and bending moment diagram of the beam shown in figure.



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***B.Arch. Degree II Semester Regular/Supplementary Examination
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**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:
- Orders in Greek Architecture.
 - Optical Illusion.
 - Differentiate between Roman Forum and Greek Agora.
 - Pantheon.
 - Notre Dame, Paris.
 - Domes and Pendentives.
 - Hagia Sophia.
 - St. Peters Rome.

PART B

(4 × 15 = 60)

- II. Brief on Greek classical Architecture, its domestic architecture on residences and public buildings like Parthenon.
- OR**
- III. Explain the Architectural features of Roman Classical Architecture with examples of Colosseum and Circus Maximus.
- IV. Explain the evolution of Christianity with the evolution of church forms, and architectural elements used for churches.
- OR**
- V. Brief on Byzantine Architecture. Describe on Baptisteries, its building features and elements.
- VI. Describe Romanesque Architecture. Explain in detail on Pisa Cathedral.
- OR**
- VII. What are the architectural elements of Gothic Architecture? Brief on Milan cathedral, Italy.
- VIII. What was the idea of rebirth and revival of art sociological influence in art and architecture in Italian Renaissance?
- OR**
- IX. Explain the life history and philosophy of Andrea Palladio.

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***B.Arch. Degree II Semester Regular/Supplementary Examination
July 2024***

**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 the following.
- (a) Block boards.
 - (b) Particle boards.
 - (c) Panelled partially glazed doors.
 - (d) Sash windows.
 - (e) Concept of span in making openings in masonry walls.
 - (f) Types of arches.
 - (g) Stone masonry.
 - (h) Brick masonry.

PART B

(4 × 10 = 40)

- II. Elaborate on ecological impact of use of wood by explaining timber in specific. Mention the types of timber joinery.
- OR**
- III. Mention the principles and design considerations for using timber and their applications in construction.
- IV. Differentiate between single leaf partially panelled partially glazed and double leaf fully panelled doors.
- OR**
- V. Differentiate between centrally pivoted, top hung and louvered windows.
- VI. Discuss load consideration in lintels and the various types of the same.
- OR**
- VII. Explain the use of bricks with their bonds, design criteria and considerations.
- VIII. Sketch and detail out the simple foundations for load bearing walls in stone masonry.
- OR**
- IX. Illustrate the details of 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 m × 1.5 m. Name the parts and indicate the size of each member.
- OR**
- XI. Draw to a suitable scale any three arches. Label the drawing fully with dimensions, names and size of parts.