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C

B.Arch. Degree II Semester Regular/Supplementary Examination May 2025

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. (a) Microstructure of wood.
(b) Sketch 5 bearing joints.
(c) Sketch the model of a wooden window and label its parts.
(d) Advantages of metal windows over wooden windows.
(e) Concept of span in making openings in masonry walls.
(f) Centering for arches.
(g) Design considerations of a foundation.
(h) Load bearing walls.

PART B

(4 × 10 = 40)

II. What is seasoning of wood? Explain in detail the various methods of seasoning.

OR

III. Explain the ecological impacts due to the use of wood. What are the different types of manufactured wood used in construction and their applications?

IV. Explain the different types of doors with the help of sketches.

OR

V. What are the design criteria and principles to be followed in the construction of a door and a window?

VI. What are the various types of lintels and explain their relative uses?

OR

VII. Explain arches and its parts. What are the classification and types of arches?

VIII. Explain the function of foundation. What are the types of simple foundations for load bearing walls in stone and brick masonry?

OR

IX. Explain the various methods adopted for timbering of foundation trenches.

PART C

(1 × 20 = 20)

X. Draw to a scale of 1:10, elevation plan and section of a single leaf fully panelled door with an opening size of 100 cm × 210 cm. label and dimension its parts.

OR

XI. Draw to a scale of 1:10, elevation plan and section of a fully glazed window with mullions and transoms with an opening size of 100 cm × 150 cm. label and dimension its parts.

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C

B.Arch. Degree II Semester Regular/Supplementary Examination May 2025

AR 1203 HISTORY OF ARCHITECTURE II – EUROPE - CLASSICAL TO RENAISSANCE

(2021 Scheme)

Time: 3 Hours Maximum Marks: 100

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

PART A

(Answer ALL questions)

(8 × 5 = 40)

I. Write short notes on:

(a) Characteristics of Composite Coloumns

(b) Basilica

(c) Domes and pendentives

(d) Baptisteries

(e) Notre Dame.

(f) Gothic Arches

(g) Villa Rotonda

(h) St. Peters Rome

PART B

(4 × 15 = 60)

II. Compare and contrast the different orders of the classical Greek and Roman architecture.

OR

III. Elaborate in detail the different layouts of Greek temples. Explain the unique architectural characteristics of Greek Temples using Parthenon as an example.

IV. Describe the history, evolution and architectural characteristics of Early christian architecture taking any one example of basilican churches and baptisteries.

OR

V. Explain in detail the architectural features of Byzantine architecture describing the architectural characteristics of Hagia Sophia as an example.

VI. Explain the English Gothic Architecture, taking the example of Milan Cathedral.

OR

VII. Explain and elaborate Gothic architecture with suitable examples.

VIII. Explain the life, history and architectural philosophy of Michelangelo.

OR

IX. What was the idea of rebirth and revival of art sociological influences in art and architecture in Italian Renaissance?

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A

B.Arch. Degree II Semester Regular/Supplementary Examination May 2025

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. (a) Explain principle of transmissibility.

(b) Define couple and its properties.

(c) Explain the term moment of inertia and list the theorems used to find the moment of inertia of composite sections.

(d) Define modulus of section.

(e) Explain principle of superposition.

(f) Explain the types of direct stresses and strains.

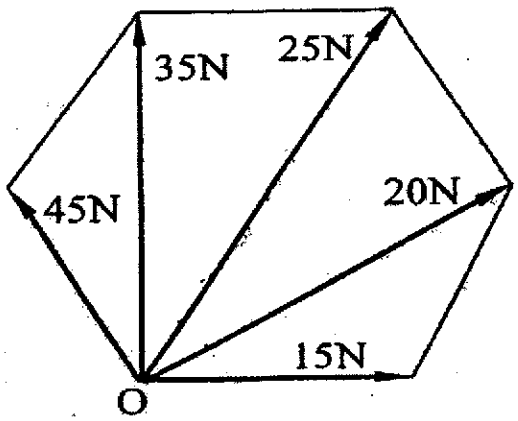
(g) Draw the bending moment diagram of a simply supported beam with a point load W at $1/4^{th}$ of span from left end.

(h) Explain the different types of beams based on the types of supports with neat sketches.

PART B

(4 × 15 = 60)

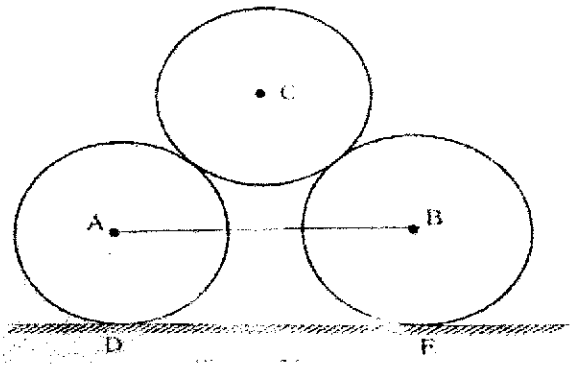
II. Forces of 15N, 20N, 25N, 35N, and 45N act at an angular point of a regular hexagon towards the other angular points as shown in figure. Calculate the magnitude and direction of resultant force.



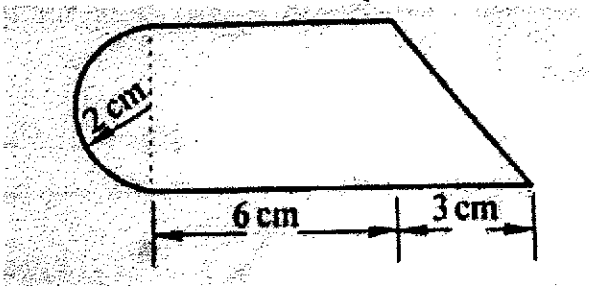
OR

(P.T.O.)

III. Two smooth circular cylinders each of weight 150 N and radius 15 cm are connected at their centers by a string AB of length 40 cm. and rest upon a horizontal plane as shown in figure. The cylinder above them has a weight 200 N and radius of 15 cm. Find the force in the string AB and the pressure produced in the floor at the points of contact D and E.

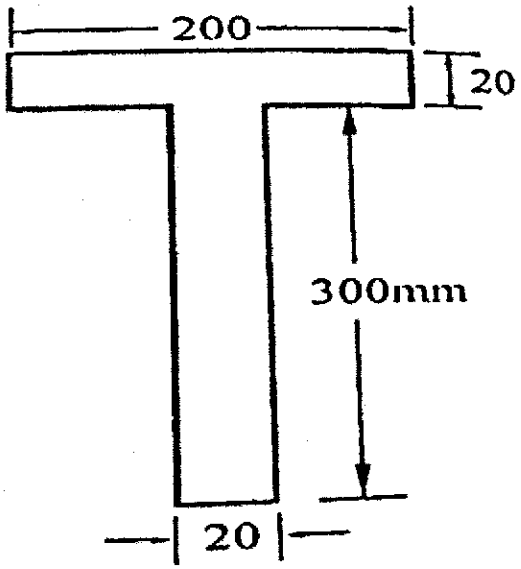


IV. Locate the centroid of the area shown in figure.



OR

V. Calculate the moment of inertia of the shaded area shown in figure with respect to centroidal X axis.



(Continued)

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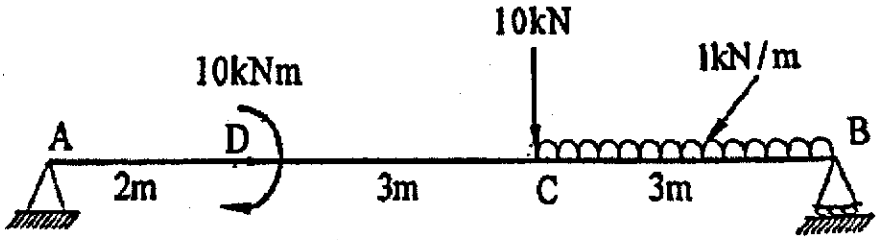
VI. A circular bar rigidly fixed at its both ends uniformly tapers from 75 mm at one end to 50 mm to the other end. If its temperature is raised through 26 K, what will be the maximum stress developed in the bar? Take E as 200 GPa and α as 12×10^{-6}/K for the bar material.

OR

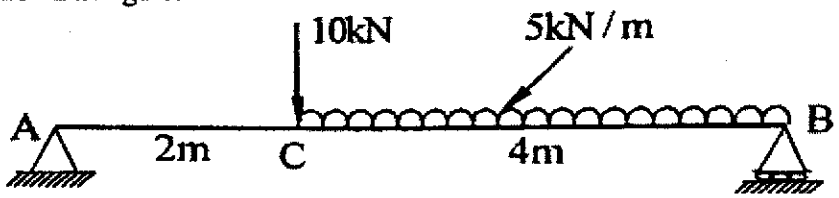
VII. A member is formed by connecting a steel rod of c/s 50 mm × 50 mm having length 250 mm to an aluminium bar of c/s 100 mm × 100 mm of length 320 mm. Assuming the bars are prevented from buckling sidewise, calculate the magnitude of force P acting axially, that will cause the total length of the member to decrease by 0.15 mm. The values of elastic modulus of steel and aluminium are 210 GPa and 70 GPa respectively.

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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C

B.Arch. Degree II Semester Regular/Supplementary Examination May 2025

AR 1205 ENVIRONMENTAL STUDIES

(2021 Scheme)

Time: 3 Hours Maximum Marks: 100

PART A

(Answer *ALL* questions)

(8 × 5 = 40)

I. (a) Explain the structure and functions of an aquatic ecosystem.

(b) What are the major threats to biodiversity?

(c) Discuss the causes and effects of air pollution.

(d) How does global warming impact the environment?

(e) What are passive cooling techniques in architecture?

(f) How does loss of wetlands affect cities?

(g) What are the key features of the Wild life Protection Act?

(h) Briefly describe the importance of the Coastal Regulation Zone (CRZ) regulations.

PART B

(4 × 15 = 60)

II. What is an ecosystem? Describe in detail the characteristics of any three ecosystems.

OR

III. Explain the methods of biodiversity conservation with reference to in-situ and ex-situ conservation.

IV. What are the different types of pollution? Explain their sources, effects, and control measures.

OR

V. Describe the causes, effects, and mitigation strategies for ozone layer depletion and acid rain.

VI. How can sustainable architectural practices reduce environmental impact? Illustrate with examples.

OR

VII. Discuss the challenges of urbanization in relation to energy consumption and resource depletion.

VIII. Explain the significance of environmental laws in India with reference to any two major acts.

OR

IX. What are the roles of government agencies and the judiciary in enforcing environmental laws in India? Discuss with examples.

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B

B.Arch. Degree II Semester Regular/Supplementary Examination May 2025

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

Time: 4 Hours Maximum Marks: 100

(Answer **ALL** questions)

(Candidates will be supplied with one A2 size drawing sheets)

(4 × 25 = 100)

I. Explore how the expression of art and design has evolved throughout history.

OR

II. Develop a colourful poster with dimensions of 26 cm × 18 cm that conveys the message "STOP VIOLENCE." Provide an explanation of the important elements included in the design. You may utilize any color medium of your choice.

III. Describe the principles of color theory and typography in visual arts, using examples to illustrate your points.

OR

IV. Arrange a still life scene that includes a flower vase and a fruit basket on a table. You may use any color medium you prefer. It is important to maintain qualities such as light and shadow, as well as balance and harmony in your artwork.

V. Write an essay about the origin, evolution and technical aspects of photography.

OR

VI. What are the elements of Painting? Provide a detailed description of two of the most renowned paintings in Western art.

VII. The Renaissance brought about major changes in art, architecture and science. Discuss these changes in an essay.

OR

VIII. Illustrate a captivating overhead view of a courtyard, incorporating elements such as vegetation, pathways, people and grassy areas.

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