B.Arch-V-11.18-1956 Reg.No. | | | | | | | | |

B

B.Arch. Degree V Semester Examination November 2018

AR 1502 BUILDING MATERIALS AND CONSTRUCTION IV

(2014 Scheme)

Time : 4 Hours Maximum Marks : 100

PART A

$(8 \times 5 = 40)$

I. Write short notes on the following :
(a) Ingredients of paint
(b) Properties of good paints
(c) Types of roofing tiles
(d) Wooden queen post truss
(e) GRP roofing
(f) Parallel and criss cross escalators
(g) Safety components in elevators
(h) Natural floor finishes

$(2 \times 10 = 20)$

II. Discuss on any three types of paints used on wall surfaces.

OR

III. Discuss in detail any three types of artificial floor finishers.

IV. What are the various light roofing materials used in construction in tropical climates? Sketch the fixing detail of any one of them.

OR

V. What are the different types of elevators based on operation and function? Elaborate on the planning consideration for elevators.

PART B

$(2 \times 20 = 40)$

VI. Draw and label to suitable scale a steel king post truss to span a length of 8 m. Assume necessary details required.

OR

VII. Draw and label to suitable scale a queen post truss using steel tubular section. Assume necessary details required.

VIII. Draw and label the plan and section of a passenger elevator to a suitable scale. Assume necessary data required for drawing.

OR

IX. Draw and label to a suitable scale the plan, elevation and section of an escalator connecting two floors. Assume floor to floor height of 2.7 m.

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B.Arch-V-11.18-1957 Reg. No. | | | | | | | | |

B

B.Arch. Degree V Semester Examination November 2018

AR 1503 HISTORY OF ARCHITECTURE IV

(*2014 Scheme*)

Time: 3 Hours Maximum Marks: 100

PART A

(Answer ***ALL*** questions)

(8 × 5 = 40)

I. Write short notes on the following:

(a) Architectural characteristics of Goan-Portuguese houses.
(b) Indo-Portuguese Architecture.
(c) Indo-Saracenic Architecture.
(d) Architectural character of Victoria Memorial in Kolkata.
(e) Baroque Architecture.
(f) Crystal Palace.
(g) Organic Architecture.
(h) Victor Horta.

PART B

(4 × 15 = 60)

II. Explain with sketches the architectural characteristics of Born Jesus Cathedral of Goa.

OR

III. Describe the impact of Portuguese in architectural style and character in India.

IV. Explain with sketches the characteristics of British Colonial Buildings in India with two examples from Mumbai.

OR

V. Describe the contributions of Edwin Lutyens in the Planning and Design of New Delhi. Give two examples of his building projects.

VI. What is Industrial Revolution? Explain its impacts to building technologies and materials of construction.

OR

VII. Give three examples of buildings with sketches which used the advantages of Industrial Revolution in Europe. Describe its technology and materials of construction.

VIII. Explain with sketches two important buildings of Frank Llyod Wright in USA.

OR

IX. Explain how Antonio Gaudi is different from other Architects in Architectural Style and Philosophy. Describe the character of Sagrada Famelia and Casa Mila.

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B.Arch-V-11.18-1958 Reg. No. | | | | | | | | |

C

B.Arch. Degree V Semester Examination November 2018

AR 1504 ECOLOGY AND ENVIRONMENTAL STUDIES

(*2014 Scheme*)

Time: 3 Hours Maximum Marks: 100

PART A

(Answer ***ALL*** questions)

(8 × 5 = 40)

I. Write short notes on:
   (a) Ecology and Biome.
   (b) Principles and types of Environment.
   (c) Population Dynamics and Population Regulations.
   (d) Population Fluctuations.
   (e) Energy flow through Ecosystem.
   (f) Food Chain.
   (g) Gaseous Cycle.
   (h) Fresh water Ecosystem.

PART B

(4 × 15 = 60)

II. Describe in detail the various kinds of Biomes.

OR

III. Cite with examples the concept of studying environment, and ecology and its relevance in the present world with regards to climate change.

IV. Explain how Population fluctuations affect the Urban Environment and its impact on Climate Change and Economics. Cite any example from India or abroad to explain the impact.

OR

V. Cite the mitigation measures adopted by Government in India or abroad to address the issue of population fluctuations.

VI. Explain in detail the different methods of measuring Productivity.

OR

VII. What is meant by Ecological Efficiency and Ecological Pyramid? Explain in detail its relation to Ecosystem.

VIII. Explain in detail the impact of man on the Nutrient Cycle in Ecosystems.

OR

IX. What are the major ecosystems of the world? Explain about desert, wetlands and freshwater ecosystems.

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B.Arch –V–11.18–1959 Reg. No. | | | | | | | | |

B

B.Arch. Degree V Semester Examination November 2018

AR 1505 BUILDING SERVICES II-ELECTRICAL DESIGN AND ILLUMINATION

(2014 Scheme)

Time : 3 Hours Maximum Marks : 100

PART A

(Answer *ALL* questions)

(8 × 5 = 40)

I. (a) Define IBMS system
(b) Write notes on MCCB
(c) Explain the difference between AC and DC systems.
(d) Explain the working principle of a transformer.
(e) Write notes on alternate power supply system.
(f) Explain the following (i) luminous flux (ii) illumination (iii) luminous intensity.
(g) What are the general aspects of electrical domestic installations?
(h) Draw the layout of a panel board.

PART B

(4 × 15 = 60)

II. Prove that line current $= \sqrt{3}$ times of phase current in a delta connected three phase system.

OR

III. A star connected three phase load consists of three identical impedances. When the load is connected to a three phase, 400V supply, the line current is 23A and power factor is 0.8 lagging. Calculate the total power taken by the load. If the load were reconnected in delta and supplied from the same three phase supply, calculate the current flowing in each line and the total power.

IV. With neat sketch, explain the working of the following ELCB.

OR

V. What is a substation? With neat layout, explain the various components in a substation.

VI. What are the safety factors to be considered for the design of a high rise building?

OR

VII. Design the illumination scheme in an Auditorium with a seating capacity of 100 with estimation.

VIII. Explain the different lightning protection schemes for building. Also explain the safety regulations for commercial and domestic buildings.

OR

IX. What is the necessity of earthing? With neat sketch explain (i) pipe earthing (ii) plate earthing.

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B.Arch-V-11.18-1960 Reg.No. | | | | | | | | |

A

B.Arch. Degree V Semester Examination November 2018

AR 1506 ARCHITECTURAL DETAILING

(*2014 Scheme*)

Time : 4 Hours Maximum Marks : 100

(Drawing sheet will be supplied. Assume further data, if found necessary. Include illustrative sketches and examples wherever necessary. Credit will be given for following standard architectural drafting and detailing conventions.)

PART A

(Answer ***ALL*** questions)

(8 × 5 = 40)

I. (a) Write short note on Graphical Cross Referencing.
(b) Write down the checklist for wall section drawing.
(c) Brief room finish schedule.
(d) Explain the relevance of center line drawing.
(e) Sketch and explain about dimensioning for architectural projects.
(f) What are the use of lines and line expressions in working drawing?
(g) Draw a parapet detail (section) for a residential terrace considering DPC and water flow.
(h) What is meant by reflected ceiling plan?

PART B

(3 × 20 = 60)

II. Draw central line setting-out drawing to scale of 1:50 for the building given in figure 1.

OR

III. Draw typical section and front elevation for the building given in figure 1 (assume and draw the first floor above)

a. Foundation and basement - Random rubble
b. Outer wall - 20 cm thick brick work in cement mortar
c. Roof slab - RCC 1:1.5:3, 12 cm thick
d. Plastering - Cement mortar 1:4
e. Window, Door - Wooden
f. Show DPC, sill concrete, joinery detail between roof slab and brick wall

IV. Draw interior elevations of living room in 1:20 scale, for the given residence, showing location of fixtures, electronic gadgets, door, slit wall etc. Brick wall 20 cm, floor finish vitrified tile.

OR

V. Prepare schedule of doors and windows for the given residence. Illustrate joinery details for a kitchen door in an appropriate scale.

VI. Prepare water supply and plumbing drawings, showing fixtures for the given scheme in figure 1 (assume and draw the first floor above).

OR

VII. Design and draw details in an appropriate scale for a wooden staircase with balustrade and its fixing details.

(P.T.O.)

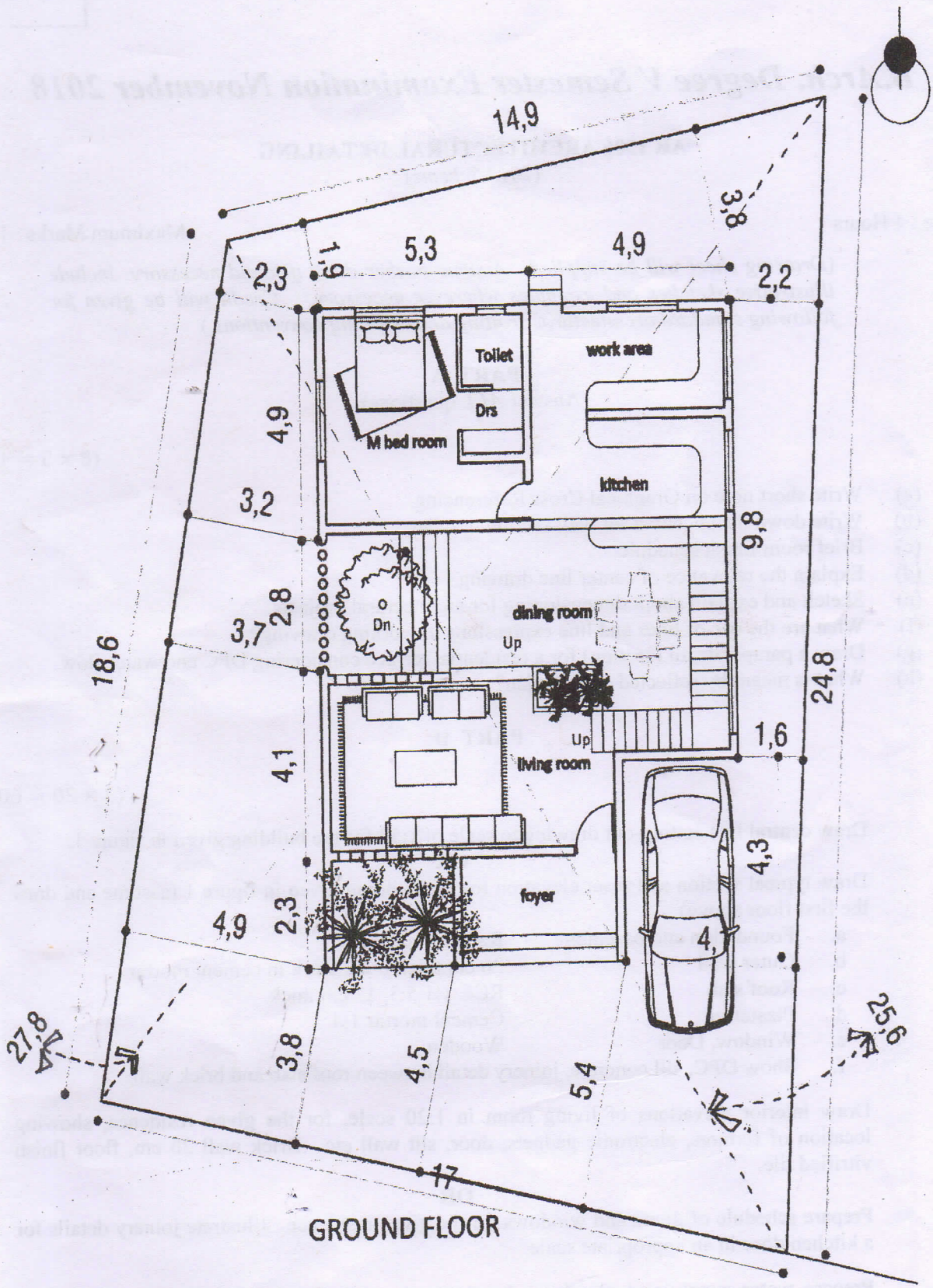
14,9
3,8
1,9
5,3
4,9
2,3
2,2
Toilet
work area
Drs
M bed room
kitchen
4,9
3,2
9,8
2,8
Dn
dining room
Up
3,7
18,6
24,8
Up
1,6
living room
4,1
4,3
foyer
2,3
4,9
4,
27,8
25,6
3,8
4,5
5,4
17
GROUND FLOOR

Figure 1

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B.Arch-V-11.18-1961 Reg. No. | | | | | | | | |

C

B.Arch. Degree V Semester Examination November 2018

AR 1507 STRUCTURAL ANALYSIS III

(*2014 Scheme*)

Time: 3 Hours Maximum Marks: 100

PART A

(Answer *ALL* questions)

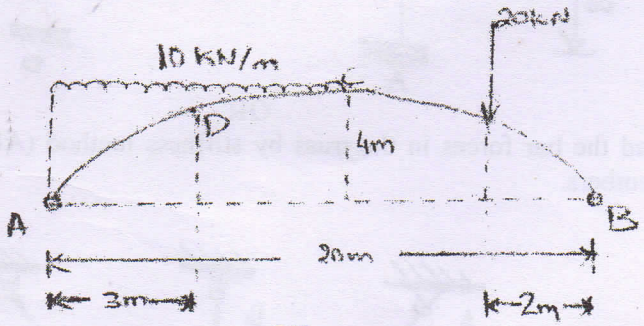
(8 × 5 = 40)

I. (a) What are the different types of arches? Explain in detail.
(b) Write the expression to compute the support reaction and Horizontal Thrust at the supports of a Two Hinged Parabolic Arch of span *l* and rise *h* subjected to an udl w/m run for the whole span.
(c) Differentiate between arches and cables from the analysis point of view.
(d) Derive the expression to find the length of a cable profile when the supports are at the same level.
(e) Write a short note on effect of settlement and temperature stress on structures.
(f) Explain static indeterminacy and kinematic indeterminacy of a structure with examples.
(g) What is displacement transformation matrix and element stiffness matrix of a structure?
(h) Explain Direct Stiffness method of analysis in trusses with steps.

PART B

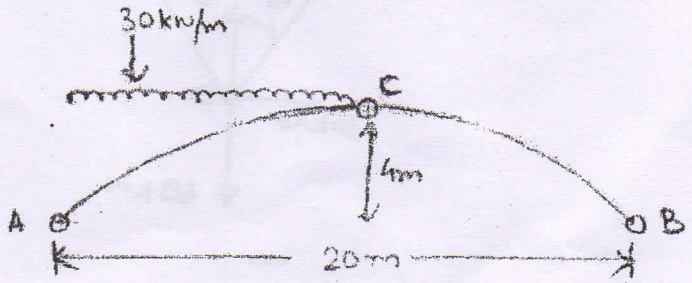
(3 × 20 = 60)

II. Compute the radial shear and normal thrust at D of the two hinged parabolic arch shown in figure.



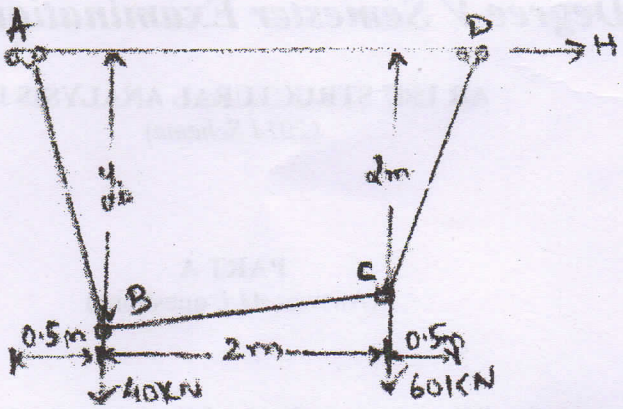
OR

III. A 3 hinged parabolic arch of span 20 m and rise 4 m carries a u.d.l of 30 kN/m run on the left half of the span. Find the maximum bending moment of the arch.



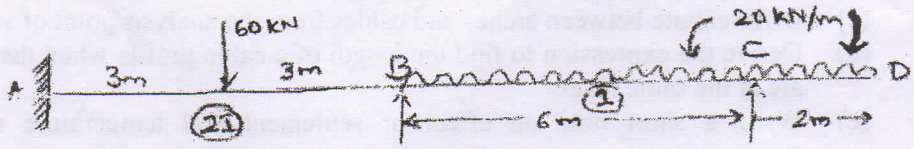
(P.T.O.)

IV. Cable ABCD support the loading shown in figure. Determine the maximum tension in the cable and the sage of the point B.

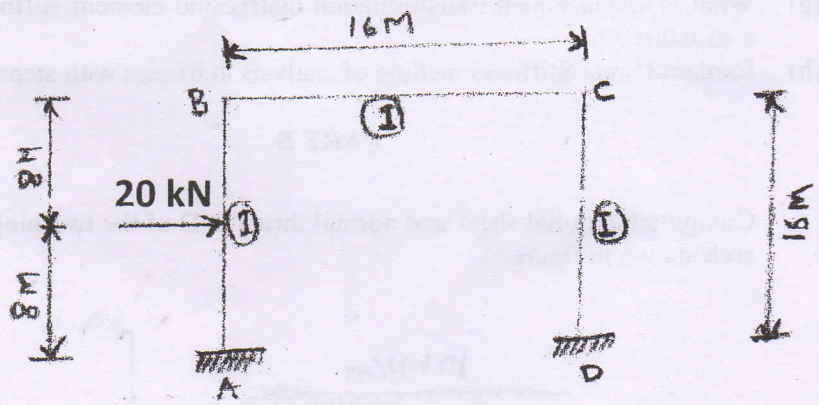


OR

V. Analyse the beam using force method of analysis. Draw its shear force and bending moment diagram.

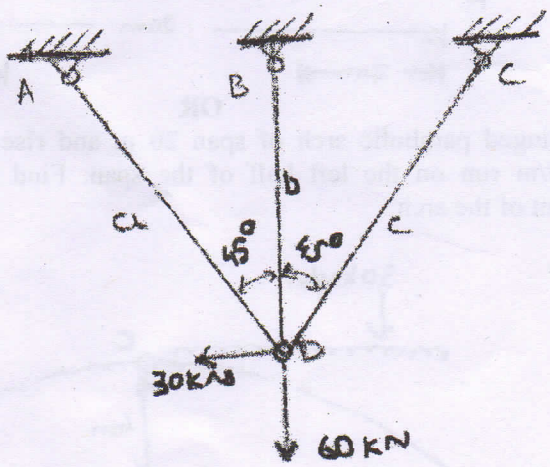


VI. Analyse the frame by displacement method and draw the B.M.D.



OR

VII. Find the bar forces in the truss by stiffness method (AE/L) = 1 for all the members.



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