

D 72048

(Pages : 2)

Name.....

Reg. No.....

FIFTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) EXAMINATION
NOVEMBER 2019

AR 17 52—LANDSCAPE DESIGN

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer all questions. Each question carries 5 marks :

- 1 Discuss the aspects of landscape architecture.
- 2 Explain the role of landscape design in architecture.
- 3 Explain the principle of Unity in Landscape Design.
- 4 Explicate Line and Form in landscape architecture.
- 5 What is 'Swale' and where is it used ?
- 6 What are urban open spaces ?
- 7 Elucidate the effects of podium landscape.
- 8 Discuss the effect of mirror pool.

($8 \times 5 = 40$ marks)

Part B

II. Answer all questions. Each question carries 15 marks :

- 1 With neat sketches describe the French garden design mentioning its key features.

Or

- 2 Discourse about Chehel Sotoun's Garden and Rashtrapati Bhavan's Garden.
- 3 Indicate the classifications of plant materials and mention their use and application in landscape design.

Or

- 4 Provide a detailed description on street furniture.

Turn over

5 Elaborate on the landscape's effect on climate and microclimate.

Or

6 Exound how landscape can be an environmental modifier against land, air, water pollutions.

7 Explain in detail the construction of podium landscape.

Or

8 Elucidate on landscape grading.

($4 \times 15 = 60$ marks)

D 72049

Name.....

Reg. No.....

FIFTH SEMESTER B.ARCH. DEGREE [2017 SCHEME] EXAMINATION
NOVEMBER 2019

AR 17.53—BUILDING MATERIALS AND CONSTRUCTION-IV

Time : Three Hours

Maximum : 100 Marks

*Assume suitable data wherever necessary.
Substantiate with suitable sketches wherever required.*

Part A

I. Answer *all* questions :

- 1 What is the significance of X-Ray shielding plaster ?
- 2 What is the purpose of stone cladding ?
- 3 Elucidate the furnishing of floors with terrazzo.
- 4 Discuss the popularity of furnishing of floors with wood.
- 5 What is e-board ? Where is it used ?
- 6 Explain the composition and properties of laminates.
- 7 What is the need for special purpose glasses ?
- 8 Describe the uses of low emissivity glasses.

(8 × 5 = 40 marks)

Part B

II. Answer *all* questions :

- 1 Explain in detail the defects in painting works.

Or

- 2 What is meant by Stucco finish ? How is it done ?
- 3 Describe any 3 different types of resilient and vibration resistive floors.

Or

- 4 State the market forms of PVC flooring and their wide applications.
- 5 What are the available forms and sizes of plywood ?

Or

- 6 Explain in detail bamboo ply and its uses.
- 7 Define sky lights and draw their details.

Or

- 8 Where are self-cleaning glasses used ? Explain their advantages.

(4 × 15 = 60 marks)

D 72050

Name.....

Reg. No.....

**FIFTH SEMESTER B.ARCH. DEGREE [2017 SCHEME] EXAMINATION
NOVEMBER 2019**

AR 17 54—BUILDING SERVICES-II

(Lighting and Electrical Services)

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer *all* questions :

- 1 Define low tension panels.
- 2 What is switchgear ?
- 3 What are earthing systems ?
- 4 Name few protective devices.
- 5 What is meant by task lighting ?
- 6 Where is accent lighting used ?
- 7 Define atrium lighting.
- 8 State the applications of flood lighting.

($8 \times 5 = 40$ marks)

Part B

II. Answer *all* questions :

- 1 Highlight the significance of electrical system in commercial buildings.

Or

- 2 Why are electrical systems in industrial buildings important ?
- 3 Define and discuss - fuses, MCB's MCCB's, ELCB's.

Or

- 4 Elucidate the safety standards and IS codes for electrical illumination.
- 5 State the criteria and standards for any three different activity illumination.

Or

- 6 Explain the methods of atrium lighting.
- 7 Describe the illumination design of a hospital building.

Or

- 8 Provide details for lighting design of sports stadia.

($4 \times 15 = 60$ marks)

D 72051

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Name.....

Reg. No.....

FIFTH SEMESTER B.ARCH. DEGREE [2017 SCHEME] EXAMINATION
NOVEMBER 2019

AR 17 55—DESIGN OF STRUCTURES

Time : Three Hours

Maximum : 100 Marks

*Assume suitable data wherever necessary.
Substantiate with suitable sketches wherever required.*

Part A

I. Answer all questions :

- 1 What are the advantages in limit state method ?
- 2 Distinguish between flexural bond and development bond.
- 3 Write down the advantages of doubly reinforced beams in detail.
- 4 What do you understand by flanged beam ?
- 5 Reinforced concrete slabs are generally safe and do not require shear reinforcement. Why ?
- 6 Explain briefly classification of the slab in detail.
- 7 What are the modes of failure of a column and Write any three salient assumptions are made in the limit state design of columns ?
- 8 What are the causes for failure of footing ?

(8 × 5 = 40 marks)

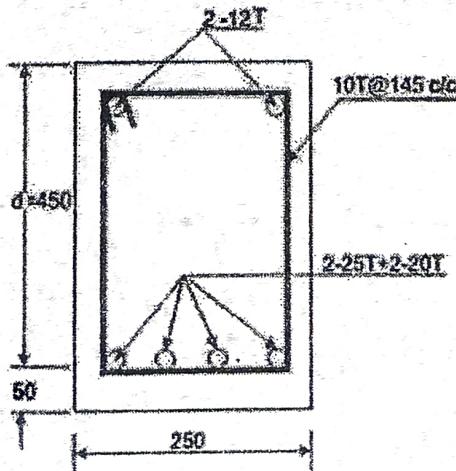
Part B

II. Answer all questions :

- 1 (A) Design a simply supported RC beam having an effective span of 5m. The beam has to carry a load of 25 kN/m.

Or

- 1 (B) Determine the shear reinforcement of the simply supported beam of effective span 8 m whose cross-section is shown in Fig. Factored shear force is 250 kN. Use M 20 and Fe 415.



Turn over

- 2 (A) Design a rectangular beam of cross section 230×600 mm and of effective span 6m, imposed load on the beam is 40 kN/m . Use M20 concrete and Fe415 steel.

Or

- (B) A continuous T-beam has the size of Flange is 1500×100 mm and web is 600×300 mm. The span is 10 m and the design moment at mid span under factored loads is 800 kNm . Determine the flexural reinforcement requirement at mid span. Consider Fe 415 steel. Assume that the beam is subjected to moderate exposure conditions.

- 3 (A) Design a one way slab with a clear span of 5m, simply supported on 230mm thick masonry walls and subjected to a live load of 4kN/m^2 and a surface finish of 1kN/mm^2 . Assume Fe 415 steel. Assume that the slab is subjected to moderate exposure conditions.

Or

- (B) Design a two way slab panel for the following data.

Size = $7\text{m} \times 5\text{m}$.

Width of Supports = 230 mm

Edge condition = interior

Live load = 4kN/m^2

Floor finish = 1kN/mm^2

Consider M 20 grade concrete and Fe 415 grade steel.

- 4 (A) Design a column having an effective length of 4.75 m to support factored load of 1600kN . Consider the reinforcement ratio ρ to be in the range 1.5 to 2.0 percent and the effective cover to longitudinal steel of 55mm. The materials to be used are M25 grade of concrete and HYSD steel bars of grade Fe 415.

Or

- (B) Define footing. Explain the types of footing and Step by Step Procedure of Isolated Footing design in detail.

($4 \times 15 = 60$ marks)

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Name.....

Reg. No.....

FIFTH SEMESTER B.ARCH. DEGREE [2017 SCHEME] EXAMINATION
NOVEMBER 2019

AR 17 56—HISTORY OF ARCHITECTURE-IV

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer all questions :

- 1 State any five works of Gaudi.
- 2 What was the underlying principle of Chicago School ?
- 3 Sketch the Seagram Building, New York and name the architect.
- 4 Sketch the institutional building designed by Mies Vander Rohe.
- 5 State the design principles of Robert Venturi.
- 6 What were the major highlights of Renzo Piano's architecture ?
- 7 What were the contributions of Peter Eisenman ?
- 8 Discuss on the structural principles of Santiago Calatrava.

(8 × 5 = 40 marks)

Part B

II. Answer all questions :

- 1 Elucidate on the arts and crafts movement with works of any two architects of this period.

Or

- 2 Discuss on Adolf Loos and his arguments on ornamentation.
- 3 Sketch and explain the architecture of Le Corbusier through his project Villa Savoye, France.

Or

- 4 What were the architectural contributions of Louis Kahn in Kimbell Art Museum, Texas ?
- 5 Who was the architect of Grand Louvre, Paris and Everson Museum of art ? Explain his design principles through these projects.

Or

- 6 Explain the architecture of Kenzo Tange through any two of his projects.
- 7 Elucidate on the works of Zaha Hadid in London Aquatic Complex.

Or

- 8 Describe the works of Daniel Libeskind in Jewish Museum, Berlin.

(4 × 15 = 60 marks)

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(Pages : 3)

Name.....

Reg. No.....

**FIFTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) EXAMINATION
NOVEMBER 2019**

AR 17 57—SPECIFICATION, ESTIMATION AND COSTING

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer all questions :

- 1 Define Estimate. Name the types of estimate.
- 2 Briefly explain about Out to Out and in to in method and bay method.
- 3 Write down the Units of measurement for the following works :
 - (a) Earthwork excavation.
 - (b) Brickwork in foundation and plinth.
 - (c) Damp proof course.
 - (d) Plastering, white washing, colour washing, painting.
 - (e) Concrete in foundation.
- 4 Explain the need for estimation and costing in detail.
- 5 Define Valuation. What is scrap value ?
- 6 Write short notes on Market value and Book value.
- 7 Write the essential qualities of a good surveyor.
- 8 Explain the term Aqueduct.

(8 × 5 = 40 marks)

Part B

II. Answer all questions :

- 9 Write down the general Specifications of 3rd class Building.

Or

- 10 Write down the detailed Specifications for Brick masonry in Cement Mortar.

Turn over

11 The plan and cross-section of a wall is given in Fig 1. Estimate the quantities of following items per metre length of the wall :

- (a) Earthwork in excavation in foundation trench.
- (b) Lime concrete in foundation.
- (c) First class brick work in 1 : 4 mortar mix in foundation and plinth.
- (d) 1st class brick work in superstructure wall.
- (e) 2.5 cm thick DPC (1 : 2 : 4) with water proofing compound.

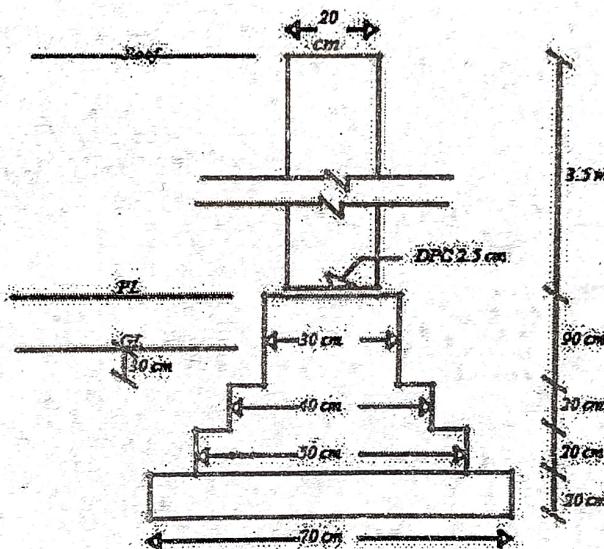


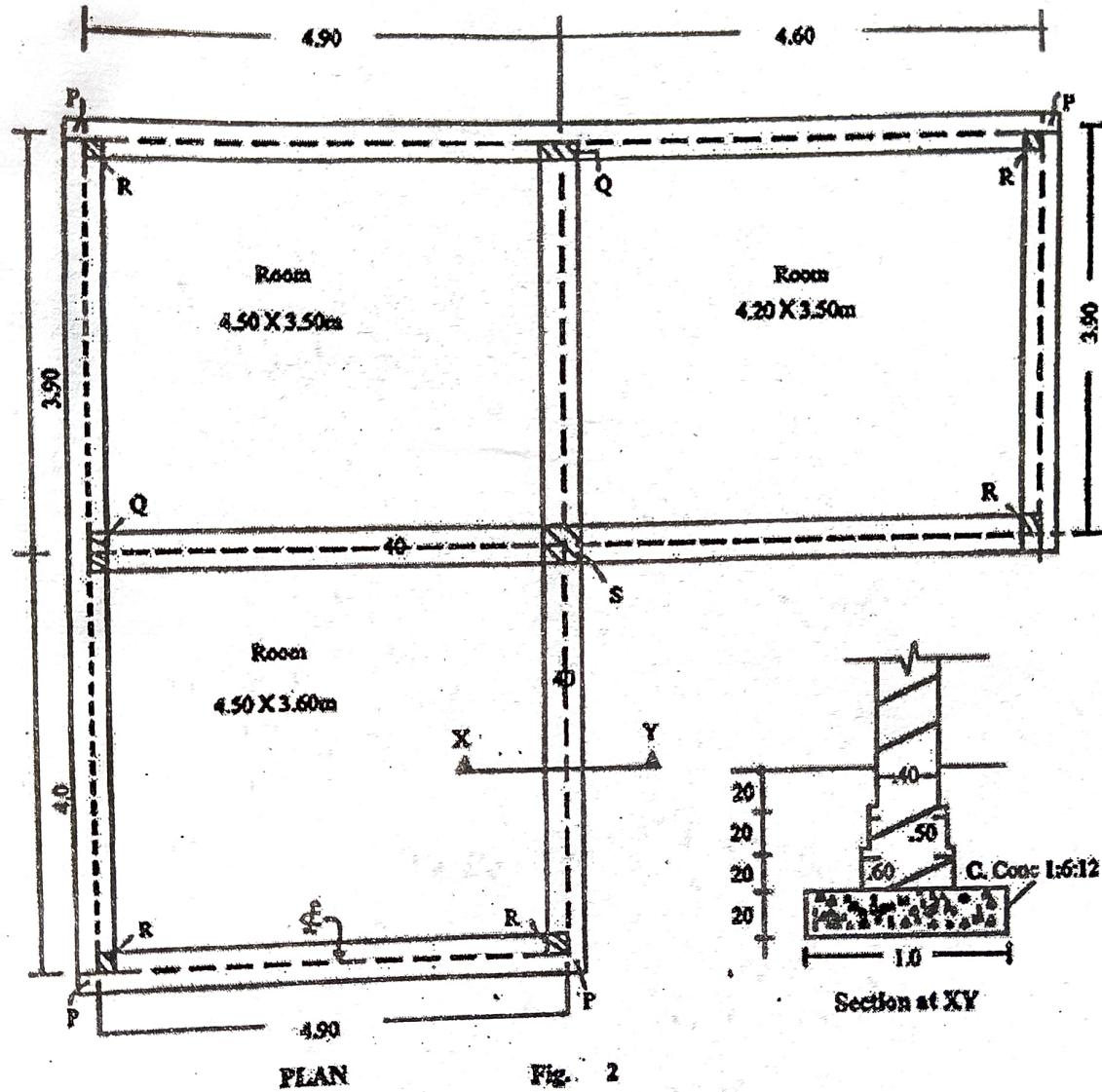
Figure 1

Or

12 Calculate the quantities of the following items from the given Figure. 2 (on Page 3) upto G.L., using centre line method.

Given Data :

- Excavation for foundations.
- Cement Concrete in foundations.
- Brick work in cement mortar (1:4).



13 Explain in detail about Valuation of Properties.

Or

- 14 Find the plinth area required for the residential accommodation for an assistant Engineer in the pay scale of Rs. 400.00 to 1,000 per month. Interest rate 6% of Capital cost of building.
- 15 What are all the Costs associated with constructed facilities ?

Or

- 16 Explain the role of Architect in controlling Construction Costs.

(4 x 15 = 60 marks)

D 91976

(Pages : 2)

Name.....

Reg. No.....

**FIFTH SEMESTER B.ARCH. DEGREE EXAMINATION
NOVEMBER 2020**

AR 17 52—LANDSCAPE DESIGN

(2017 Admissions)

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

Answer all questions.

Each question carries 5 marks.

1. Define Landscape Architecture.
2. Provide a comparison of landscape design and architecture.
3. Give a brief on history of gardening from the past.
4. Explicate the principle of Texture & Color in landscape design.
5. State the classifications of plant materials.
6. Define bio-swale.
7. What is urban avenue ?
8. Describe the purpose of green walls.

($8 \times 5 = 40$ marks)

Part B

Answer all questions.

Each question carries 15 marks.

1. Explain the design of English gardens.

Or

2. Elucidate on the Gardens of Suzhou and Katsura Imperial Villa.
3. Enumerate with sketches the role of plants in landscape design.

Or

4. Describe the significance of landscape lighting.

Turn over

5. Establish the relationship between climate, landscape and architecture.

Or

6. Illustrate landscape as environmental modifier against water logging.

7. Explain, how land form design can affect the micro-climate ?

Or

8. Discuss, how landscaping elements supports a pollution free environment ?

($4 \times 15 = 60$ marks)

D 91977

(Pages : 2)

Name.....

Reg. No.....

FIFTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020

AR 17 53—BUILDING MATERIALS AND CONSTRUCTION—IV

(2017 Admissions)

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer *all* the questions :

- 1 What is gypsum plaster ?
- 2 Explain the process of varnishing.
- 3 State the methods for furnishing of floors with mosaic.
- 4 What is meant by parquet flooring ?
- 5 Define lamina-boards.
- 6 What are cement particle boards ?
- 7 Explain heat strengthened glass.
- 8 Discuss the applications of toughened glass.

($8 \times 5 = 40$ marks)

Part B

II. Answer *all* the questions :

- 1 Describe the methods and processes for plastering over masonry and ceiling.

Or

- 2 Provide details for wooden cladding in a conference room.
- 3 Explicate the classification and properties of tiles used in flooring.

Or

- 4 Describe the material Linoleum and its utility in building industry.

Turn over

5 Explain in detail the areas of applications for boards.

Or

6 What is Glulam ? State their properties and uses.

7 What is Glazing ? Explain single, double and triple glazing of curtain walls.

Or

8 Discuss the properties of fire resistant glass.

(4 × 15 = 60 marks)

D 91978

(Pages : 2)

Name.....

Reg. No.....

FIFTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020

AR 17 54—BUILDING SERVICES—II

(LIGHTING AND ELECTRICAL SERVICES)

(2017 Admissions)

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer all the questions :

- 1 Explain the significance of studying electrical services.
- 2 What are the commonly used terminologies in electrical services ?
- 3 What is meant by distribution system ?
- 4 Define Panel boards.
- 5 What are the commonly used terminologies in illumination ?
- 6 State the measurement of luminous flux.
- 7 What is point source ?
- 8 Explain row lighting.

(8 × 5 = 40 marks)

Part B

II. Answer all the questions :

- 1 Elucidate the components of a sub-station.

Or

- 2 Elucidate the electrical system in high rise buildings.
- 3 Provide a detailed description on underground and overhead-cabling systems.

Or

- 4 Differentiate between surface and concealed wiring systems.

Turn over

5 Explain the laws of illumination.

Or

6 Explicate direct luminary systems.

7 Explain the sources of illumination-point source and row lighting.

Or

8 Discuss area illumination and evaluation of total flux.

($4 \times 15 = 60$ marks)

D 91979

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Name.....

Reg. No.....

FIFTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020

AR 17 55—DESIGN OF STRUCTURES

(2017 Admissions)

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer *all* questions :

- 1 What is under reinforced section and over reinforced section ?
- 2 What is singly reinforced section and doubly reinforced section ?
- 3 Write short notes on Cracking in structural members.
- 4 What are the important factors affecting the shear resistance of a reinforced concrete member without shear reinforcement ?
- 5 Why is secondary reinforcement provided in one way RC slab ?
- 6 Name the two types of two-way slabs. Explain their difference in the design of slabs.
- 7 Write about percentage of reinforcement for columns and List out the IS recommendations regarding longitudinal reinforcements in Columns.
- 8 What is punching shear in a RCC footing ?

($8 \times 5 = 40$ marks)

Part B

I. Answer *all* questions :

- 1 (A) Design a RC beam $350 \times 700\text{mm}$ effective section, subjected to a bending moment of 300kNm . Adopt M20 concrete and Fe415 steel.

Or

- (B) Calculate the area of steel of grade Fe 415 required for section of 250mm wide and overall depth 500mm with effective cover 40mm in M20, if the limit state of moment be carried by the section is : a) 100 KN ; b) 146 KN ; c) 200KN .

Turn over

- 2 (A) Determine the moment of resistance of an existing beam having the following data :
 $b = 350 \text{ mm}$; $d = 900\text{mm}$; $d' = 50\text{mm}$. Tension reinforcement : 5-20mm HYSD bars (Fe 415) ; compression reinforcement 2-20 HYSD bars (Fe 415) ; grade of concrete M15.

Or

- (B) A reinforced concrete beam 250 mm wide and 400 mm effective depth is subjected to ultimate design shear of 150KN at the critical section near the supports. The tensile reinforcement at the section near the supports is 0.5%. Design the shear stirrups near the supports. Also design the minimum shear reinforcement at the mid span. Use M20 concrete and Fe 250.
- 3 (A) Design a simply supported one -way slab over a clear span of 3.5 m. It carries a live load of 4 kN/m² and floor finish of 1.5 kN/m². The width of supporting wall is 230 mm. Adopt M-20 concrete & Fe-415 steel.

Or

- (B) Design the slab panel of 4m × 6m subjected to factored live load of 8 kN/m² in addition to its dead load using M 20 and Fe 415. The load of floor finish is 1 kN/m². The corners of the slab are prevented from lifting.
- 4 (A) A braced reinforced concrete column of circular cross-section of 500mm diameter is to support a factored axial load of 2250 kN along with a factored moment of 160 kNm. The unsupported length of the column is 6.3m effective length of 5.5m. Design the column when it is to be provided with : Lateral ties and Spiral reinforcement. The M25 grade of concrete and HYSD steel bars of grade Fe415.

Or

- (B) Design an isolated footing of uniform thickness of a RC column bearing a vertical load of 600 KN and having a base of size 500 × 500 mm. The safe bearing capacity of soil may be taken as 120 KN/m². Use M20 concrete and Fe 415 steel.

(4 × 15 = 60 marks)

D 91980

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Name.....

Reg. No.....

**FIFTH SEMESTER B.ARCH. DEGREE EXAMINATION
NOVEMBER 2020**

AR 17 56—HISTORY OF ARCHITECTURE—IV

(2017 Admissions)

Time : Three Hours

Maximum : 100 Marks

Assume suitable data wherever necessary.

Substantiate with suitable sketches wherever required.

Part A

I. Answer *all* questions. Each question carries 5 marks :

- 1 What is meant by Neo-classicism ?
- 2 Discuss the origin of Art Nouveau.
- 3 State the prominent characteristics of Cubism.
- 4 What is Constructivism ? Name any *one* architect from this movement.
- 5 Define Critical Regionalism.
- 6 Discuss the philosophy of Paulo Soleri.
- 7 Name the architect and explain any two features of 2012 Olympics and Zaragoza Bridge Pavilion.
- 8 Who designed World trade Centre, New York ?

($8 \times 5 = 40$ marks)

Part B

II. Answer *all* questions. Each question carries 15 marks :

- 1 Discuss the industrial revolution and its impact on emergence of new architectural era.

Or

- 2 Explain the advent of new materials - steel, glass, concrete during the origin of modernity.

Turn over

3. What were the ideologies of Richard Neutra ? How are they revealed in the Kaufmann Desert House at California.

Or

4. Who designed the Finlandia Hall ? Explain the architectural philosophies of that architect.
5. Discourse on Post Modernism and International Style.

Or

6. Describe the architecture of Paul Rudolph through his buildings.
7. Define Deconstructivism. Explain any *two* architects and their project demonstrating this style.

Or

8. Explain the architecture of Jorn Utzon through Sydney Opera House.

($4 \times 15 = 60$ marks)

D 91981

(Pages : 3)

Name.....

Reg. No.....

**FIFTH SEMESTER B.ARCH. DEGREE EXAMINATION
NOVEMBER 2020**

**AR 17 57—SPECIFICATION, ESTIMATION AND COSTING
(2017 Admissions)**

Time : Three Hours

Maximum : 100 Marks

*Assume suitable data wherever necessary.
Substantiate with suitable sketches wherever required.*

Part A

I. Answer *all* questions. Each question carries 5 marks :

- 1 Discuss the different types of specification in detail.
- 2 What are the methods of taking out estimates ?
- 3 Describe centre line method.
- 4 What are the factors to be considered while preparing detailed estimate ?
- 5 What is analysis of rates ? Briefly illustrate the schedule of rates.
- 6 What are the important factors influencing the value of building ?
- 7 Explain Floor area and Carpet area.
- 8 An approach road 2 Km. long is to be constructed. Work out the quantity of materials required i.e. stone metal and bricks. Data is given below. Length = 2 Km. Metalled width = 3.60 m. Soiling of bricks = 10 cm. Wearing coat of stone metal = 12 cm.

(8 × 5 = 40 marks)

II. Answer *all* questions. Each question carries 15 marks :

- 9 Write down the general Specifications of 1st class Building.

Or

- 10 Prepare an approximate Estimate of a proposed building from the following :

Given Data :

- Plinth area of the building = 226 sqm.
- Cost of the structure = 2500 per sqm.
- Water supply and sanitary arrangements = 12½ %.
- Electrification = 7 %.
- Fluctuation of rates = 5 %.
- Petty supervision charges = 3 %.

Turn over

11. Calculate the Quantity of material for the following items :

- R.C.C (1 : 2 : 4) for 10m³ of work.
- Lime Concrete in foundation with 25 mm. down brick chips (or jhama chips) with lime surki mortar (1 : 2 : 5½) 10 m³ of work.

Or

12. Write the detailed estimate for the following items using long walls and short walls method. Assume the necessary data. (Refer the building plan and section figure 1 on 3rd Page).

Given Data :

- Concrete B.B. in mud mortar in foundations and plinth.
- B.B. in mud mortar in superstructure.
- Flooring 4 cm. thick over 10 cm. thick cement concrete over 10 cm. thick sand.

13. Examine in detail about various methods of calculations Depreciation.

Or

14. Explain in detail about various methods of Valuation ?

15. Explain the roles and responsibilities of architect in construction industry.

Or

16. Discuss the approaches to Cost Estimation in a project.

(4 × 15 = 60 marks)

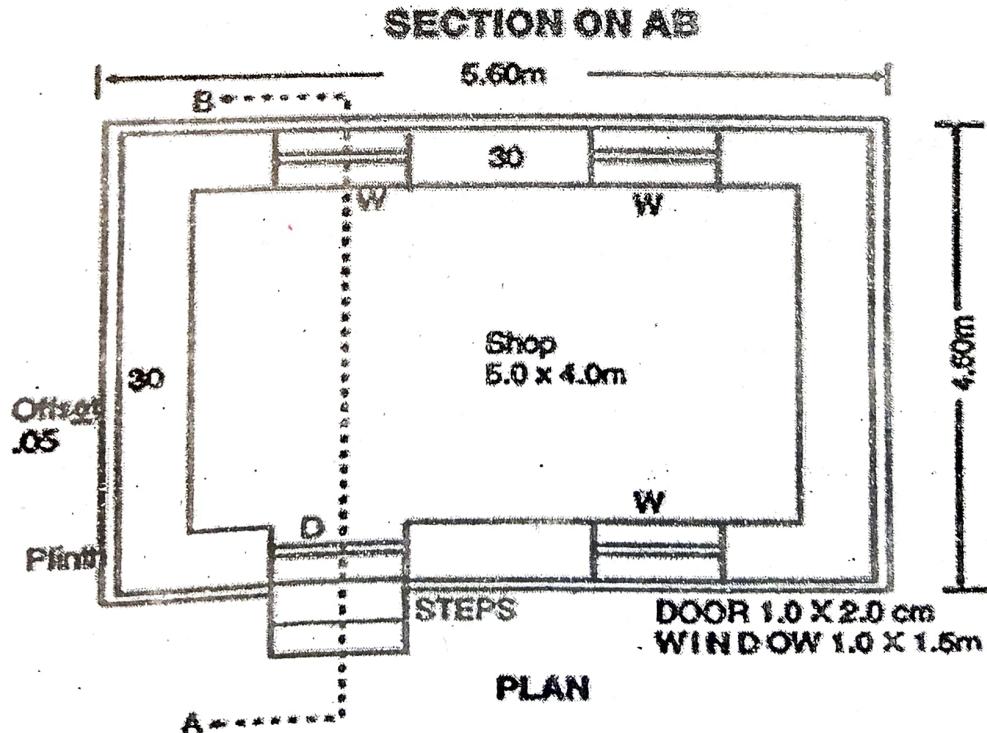
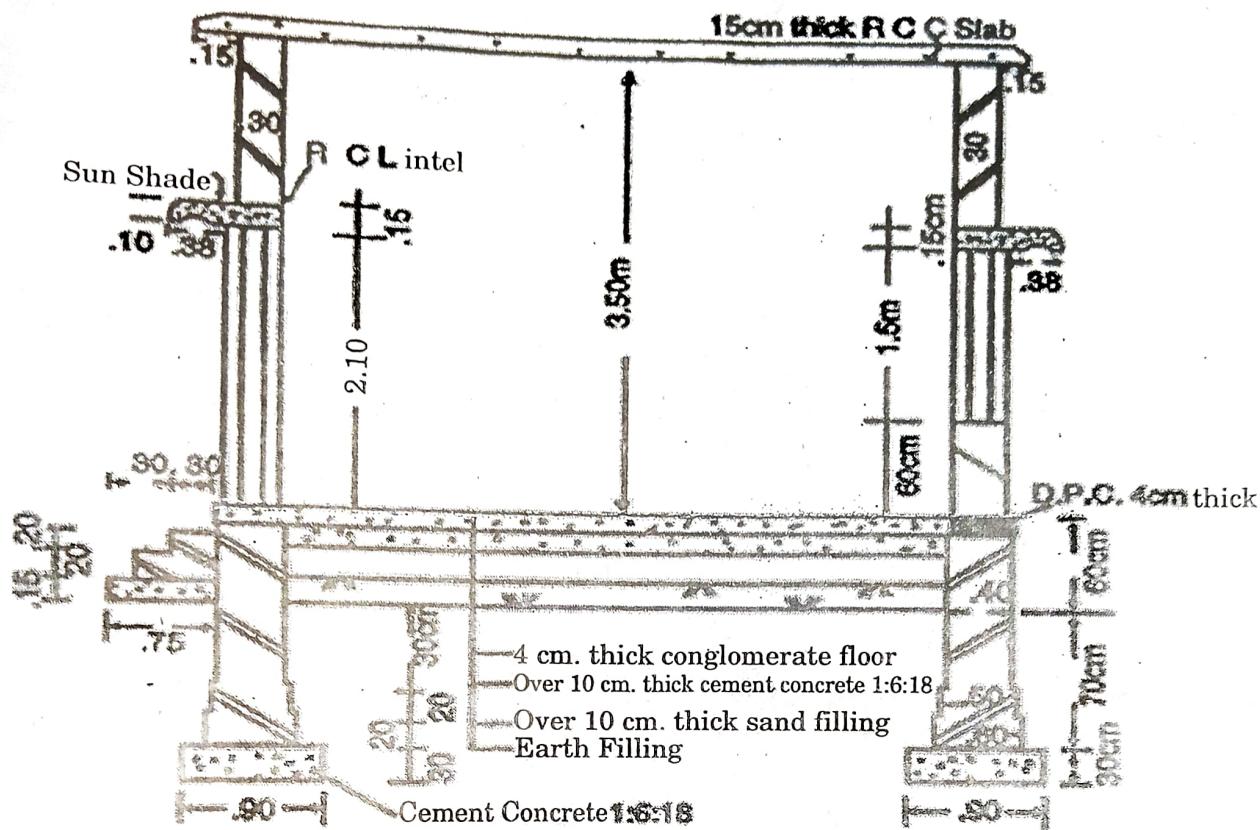


Figure 1