

NINTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020

AR 12 98—CONSTRUCTION MANAGEMENT

(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A*Answer all questions.**Each question carries 5 marks.*

I. Write short notes on :

- a) Operating cost.
- b) Advantages of construction planning.
- c) Network analysis.
- d) Dummy activity.
- e) Most likely time estimate.
- f) Float.
- g) Direct cost and indirect cost.
- h) Resource leveling.

(8 × 5 = 40 marks)

Part B*Answer all questions.**Each question carries 15 marks.*

II. a) What are the various stages of construction ? Explain the constituents of a construction team ? (15 marks)

Or

b) What is meant by scheduling ? What are its uses and advantages ? (15 marks)

III. a) Draw the network for the following activities and number the events :

- 1 Activities A and B can be carried out simultaneously.
- 2 Activities C and D follow activity A and can be started simultaneously.

Turn over

- 3 Activity E follows activity C.
- 4 Activity F depends on completion of activity D and E.
- 5 Activities I and K cannot be started until B is completed. They can be started simultaneously.
- 6 Activity D must be finished before activity G.
- 7 Activity J depends on completion of activities I and K.
- 8 Activity H can be started on completion of activities J, F and G.
- 9 H is the last activity.

(15 marks)

Or

- b) A bus waiting shed is being constructed in front of your campus. Break down the work involved and prepare a list of activities assuming duration for each activity. Prepare a bar chart for the construction.

(15 marks)

- IV. a) For the given construction project draw A-O-A network and find the critical path and project duration. Compute all the floats :

Activity	A	B	C	D	E	F	G	H	I
Predecessor	-	-	A	A	B	C, E	D	F	G, H
Duration (Days)	5	6	10	3	4	11	6	8	2

(15 marks)

Or

- b) Draw a PERT network for the following data and find the expected mean time, variance and standard deviation for the project :

Sl. No.	Activity	Three time estimates (t_o - t_l - t_p) in days
1	0-1	2-3-10
2	0-2	4-5-6
3	1-2	0-0-0
4	1-3	6-7-8
5	1-4	1-5-9
6	2-5	3-5-17
7	3-4	0-0-0
8	4-5	1-3-5

(15 marks)

- V. a) Determine the minimum cost and optimum duration for the project of the network. The data of each activity of network is given in the following table. Indirect cost may be taken as Rs. 2,500 per week :

Activity	Normal time (Weeks)	Normal cost (Rs.)	Crash time (weeks)	Crash cost (Rs.)
0-1	3	4,000	2	5,500
1-3	14	15,000	11	18,000
1-2	7	6,000	4	9,000
2-3	9	11,000	6	18,000
3-4	4	8,500	3	12,000
4-5	3	6,000	2	7,000

(15 marks)

Or

- b) Discuss the objectives of resource planning. Explain the terms resource smoothing and resource leveling.

(15 marks)

[4 × 15 = 60 marks]

NINTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020**AR 12 97—BUILDING SERVICES—IV****[HEATING VENTILLATION AND AIR CONDITIONING]**

(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A*Answer all questions.**Each question carries 5 marks.*

1. Mention any *five* insulating materials ?
2. Distinguish free and forced convection in heat transfer ?
3. What are the principles of refrigerators ?
4. Distinguish theoretical and practical cycles ?
5. What are the factors governing effective temperature ?
6. Distinguish RSHF and GSHF ?
7. Write any *five* functions of AHU ?
8. Write the formula of equal friction method to determine size of duct and write its abbreviation ?

(8 × 5 = 40 marks)

Part B*Answer all questions.**Each question carries 15 marks.*

1. Explain the general components to be considered in design of air conditioning systems ?

Or

2. Design a suitable air conditioning system for auditorium of capacity 800 people. Assume necessary data ?

Turn over

3. Write a note on the following :

- a) Sensible heating and cooling.
- b) Humidifying and dehumidifying.

Or

4. Write a note on the following :

- a) Properties of psychrometric.
- b) What is the purpose to study about psychrometric chart ?

5. Write a note on the following in refrigerators :

- a) Expansion devices.
- b) Evaporators.

Or

6. In what way eco-friendly refrigerators are more advantage than standard refrigerators. Illustrate with suitable examples ?

7. Derive the Stephan boltz man's law of heat transfer.

Or

8. Write a note on the following :

- a) Radiation.
- b) Reflectivity.

(4 × 15 = 60 marks)

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

AR 12 96—EARTH QUAKE RESISTANT DESIGN AND DISASTER MANAGEMENT

(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 5 marks.

1. Write a note on the following fault line and epicentre distance.
2. Write a note on the following focal depth and peak ground acceleration.
3. What are the instruments generally used to measure the earth quake ?
4. Differentiate various scales of magnitude and intensity.
5. Mention any *five* basic design philosophy of seismic design of structures.
6. Mention any *five* terms and their meaning used in seismic codes.
7. Write a note on vulnerability assessment.
8. Mention any *five* life line protection for natural disasters.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks.

1. Explain any *two* safety management systems?

Or

2. Discuss the emergency planning techniques at city level during natural disasters ?
3. Explain the design consideration to be followed in earth quake resistant building design.

Or

4. In what way irregularities of building affects in earth quake.

5. Discuss the distribution earth quake in India ?

Or

6. Explain the following :

(a) Surface waves.

(b) Attenuation of waves.

7. Explain the factors to be considered in failure of building pattern in global context-illustrate with suitable examples ?

Or

8. Discuss about the major earth quakes observed from the case studies ?

(4 × 15 = 60 marks)

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NINTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020**AR 12 95—ENVIRONMENTAL STUDIES****(2012 Admissions)****Time : Three Hours****Maximum : 100 Marks****Part A***Answer all questions.**Each question carries 5 marks.*

1. Mention any five resources affect the environment.
2. What are the problems are of associated with over utilization of ground water ?
3. Mention any five functions of eco system.
4. Sketch the food chin and food web.
5. Write a note on EIA and its functions.
6. Write a note on nuclear hazards.
7. Write a note on global warming and its effects.
8. Mention any five building materials made from waste material.

(8 × 5 = 40 marks)**Part B***Answer all questions.**Each question carries 15 marks.*

1. Explain the factors to be considered for conservation of renewable energy resources observed from your case studies.

Or

2. Discuss the techniques to be incorporated in building design for water conservation.
3. Explain the causes, effects and control measures for air and water pollution observed from your case studies.

Or

4. Explain the causes, effects and control measures for solid waste management in urban areas observed from your case studies.

Turn over

5. Explain the characteristics feature, structure and function of the following :

- a) Forest eco system.
- b) Desert eco system.

Or

6. Discuss factors to be considered for threats to bio diversity.

7. Explain with suitable examples - problems associated with use and over exploitation of forest resources.

Or

8. Explain with suitable examples - need for public awareness to enhance the resources of various types to prevent from deterioration.

(4 × 15 = 60 marks)

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

AR 12 94—PROFESSIONAL PRACTICE

(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

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

- I. (a) Give short notes on two stage competition.
(b) What are the scale of charges for urban design works ?
(c) What is tender ?
(d) What is meant by “loaded summary” in Tender Bids evaluation ?
(e) What is meant by Breach of Contract ?
(f) What is the role of Umpire in Arbitration ?
(g) What is Market value ?
(h) Define Easement of air and light.

(8 × 5 = 40 marks)

Part B

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

- II. (a) What are the Professional code of conduct for Architects as per COA ?

Or

- (b) What are the professional Duties, exceptions and liabilities of Architect as per COA ?

- III. (a) Write in brief about :

- (i) Earnest money.
(ii) Security deposit.
(iii) Retention amount.

. Or

- (b) What are the essential features of a tender notice and explain that with an example ?

Turn over

IV. (a) Explain the following :

- (i) Virtual Completion certificate.
- (ii) Interim.
- (iii) Final Certificate.

Or

(b) Write how to appoint Arbitrator and Arbitral Tribunal and powers and duties of Arbitral Tribunal.

V. (a) Explain the classification of value.

Or

(b) What are the different modes for acquiring easements.

(4 × 15 = 60 marks)

NINTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020

AR 12 93—TOWN PLANNING

(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A*Answer all questions.**Each question carries 5 marks.*

- I. 1 Contributions of Le Corbusier.
- 2 Features of Industrial town.
- 3 Urban nodes.
- 4 Fringe area and Suburb.
- 5 Transportation survey.
- 6 Rural planning.
- 7 Sub division regulations.
- 8 Town planning scheme.

(8 × 5 = 40 marks)

Part B*Answer all questions.**Each question carries 15 marks.*

- II. (a) Compare the salient features of Town planning in Ancient Mesopotamia and Greece.

Or

- (b) What are the contributions of Ebenezer Howard to modern town planning ?

- III. (a) What is Land use plan ? Discuss briefly the relevance and objectives of Land use plan.

Or

- (b) Discuss the Environmental and social problems associated with rapid urbanization.

Turn over

IV. (a) Explain in detail the types of surveys to be conducted before preparing the Development plan.

Or

(b) Define Regional planning. Discuss the different type of regions and discuss the importance of regional planning in the development process.

V. (a) What is Land Acquisition Act ? What is the procedure for acquisition of land for a public purpose under Land acquisition act ?

Or

(b) Discuss the role of JNNURM in the infrastructure development of major Indian cities.

(4 × 15 = 60 marks)

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

AR 12 92 4—ENERGY EFFICIENT ARCHITECTURE (Elective II)
(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 5 marks.

1. Mention any *five* passive cooling concepts for institutional buildings.
2. Sketch the roof pond and label its parts.
3. Write a note on solar collectors.
4. Write a note on active system for cooling based solar system.
5. In what way fenestration design helpful in optimize the day light ?
6. Mention any *five* factors affecting the energy use in buildings ?
7. In what way orientation of the building reduce the energy conserve in building-illustrate with suitable examples.
8. Differentiate between site planning and site design.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks.

1. Explain with suitable examples energy conservation through integration of building and site.
- Or*
2. Explain with suitable examples - landscape elements are acts as a micro climate modifier for energy conservation ?
 3. Explain the environmental factors to be considered for environmental degradation - illustrate with suitable examples?

Or

4. Explain the following with suitable examples.
 - (a) Air conditioning factors affects environment.
 - (b) Electrical system factors affects environment.
5. Explain the procedure to be followed to setup the solar panels in residential buildings. Write its advantage and disadvantage.

Or

6. Describe the factors to be considered the solar energy tapping systems.
7. Explain the factors to be considered to determine the energy efficiency -illustrate with suitable examples.

Or

8. Explain the following with suitable examples :
 - (a) Earthen sheltered structures.
 - (b) Earth air tunnels.

(4 × 15 = 60 marks)

NINTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020

AR 12 92 3—URBAN CONSERVATION (Elective II)

(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A*Answer all questions.**Each question carries 5 marks.*

1. Differentiate transformation and change in conservation.
2. Write down the salient features of conservation in India.
3. Write down the four approaches towards conservation.
4. Mention any five scopes in conservation projects observed from case studies.
5. What are the factors to be considered in integrated conservation ?
6. Mention any five planning parameters in conservation projects.
7. Write the functions of world heritage sites.
8. Write a note on functions of ASI.

(8 × 5 = 40 marks)

Part B*Answer all questions.**Each question carries 15 marks.*

1. Write a note on the following :
 - a) Functions of urban arts commission in India.
 - b) Heritage commission in abroad.
- Or*
2. Discuss the mission and functions of INTACH.
 3. Is the planning guidelines in important in conservation projects-Illustrate with suitable examples ?

Or

4. Discuss the any four planning concept to be considered in integrated conservation with suitable examples.

Turn over

5. Explain any four approaches towards conservation with suitable examples.

Or

6. What are the possible issues and solutions to be implemented in urban conservation in abroad sites observed from your case study ?

7. Discuss the functions of INTACH and ASI.

Or

8. Discuss the development of urban conservation in abroad.

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALICUT

NINTH SEMESTER B.ARCH. DEGREE EXAMINATION, NOVEMBER 2020

AR 12 92 2—ARCHITECTURAL RESEARCH (Elective II)

(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A*Answer all questions.**Each question carries 5 marks.*

1. Write short notes on :

- (a) Importance of research in architecture.
- (b) Influence of values in research.
- (c) Research topic formulation.
- (d) Probability studies.
- (e) Combined strategies.
- (f) Correlational research.
- (g) Writing strategies.
- (h) Research report evaluation.

(8 × 5 = 40 marks)

Part B*Answer all questions.**Each question carries 15 marks.*

1. (a) Describe scientific approach in architectural research.

Or

(b) Write briefly on the following :

- (i) Deduction.
- (ii) Induction.
- iii) Abduction.

Turn over

2. (a) Explain the relation of theory to method.

Or

(b) What are the standards of quality prescribed for quantitative and qualitative research ?

3. (a) What is the importance of research strategy in the research process ? Discuss through relevant examples how a particular strategy may be more suitable than others for a specific topic.

Or

(b) Mention any *three* research strategies commonly used in architectural research. Write a brief note on each.

4. (a) What are the aspects that distinguishes scholarly writing from other forms of writing ?

Or

(b) Describe the structure of a successful research thesis.

(4 × 15 = 60 marks)

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

AR 12 92 1—URBAN DESIGN (Elective 1)
(2012 Admissions)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 5 marks.

I. Write short notes on :

- (a) Guidelines for Urban massing.
- (b) Indian Bazaar Street.
- (c) Urban Renewal.
- (d) Land pooling and readjustment.
- (e) Vistas and skyline.
- (f) Urban Arts Commission.
- (g) Space syntax.
- (h) The city beautiful movement.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks.

II. (a) Compare and distinguish Architecture, Urban Design and Planning. Discuss the level of interaction of these three fields in shaping urban areas.

Or

(b) Explain in detail the visual theory of Urban Design propagated by Kevin Lynch with good examples.

Turn over

- III. (a) Discuss some of the urban design policies to enhance landscape design in a city. Substantiate with similar urban level projects.

Or

- (b) What do you mean by urban conservation ? How is it different from Architectural conservation ? What are the regulatory tool available in Urban conservation.

- IV. (a) Which are the major regulatory tools available with various agencies in implementing an urban design scheme ?

Or

- (b) Briefly explain with examples how water edge is integrated in a water front development project.

- V. (a) Detail out the distinct characteristics of colonial towns with an example.

Or

- (b) Do a planned city support the life and activity of pedestrians. Comment based on Chandigarh city planning.

(4 × 15 = 60 marks)

**NINTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) [REGULAR]
EXAMINATION, NOVEMBER 2021**

B.Arch.

AR 17 96 4—URBAN HOUSING

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. What do you mean by the term House and how it is different from Home ?
2. Differentiate between need and demand in housing.
3. State the objectives of NHP 2007.
4. List the state Government housing agencies and its objectives.
5. Abbreviate JnnURM, RAY, PMAY and VAMBAY.
6. List the major housing financial agencies.
7. Differentiate between net and gross residential density in housing.
8. List the housing projects designed by Indian Eminent Architects.

(8 × 5 = 40 marks)

Part B

1. Is the “Urbanization” is one of the magnitude of housing problems in India. Illustrate with suitable examples.

Or

2. Compare the different types of housing typologies with suitable examples. State its advantages and disadvantages.
3. Briefly discuss the salient features of Five year plan with respect to housing.

Or

4. Identify the suitable case studies where the housing development was based on the community participation. State its advantages and disadvantages.

Turn over

Is High rise structure in housing is the solution for today housing problems. State its merits and demerits with respect to cultural and social aspects in housing.

Or

Briefly describe the cause and effects of slum in metro cities?

Is application of neighbourhood principles will enhance the existing housing development? Illustrate with suitable examples.

Or

Discuss the salient features of housing standards referred in your syllabus. Are standards enhancing the housing quality with respect to space and activities ? Illustrate with suitable examples.

(4 × 15 = 60 marks)

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**NINTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) [REGULAR]
EXAMINATION, NOVEMBER 2021**

B.Arch.

AR 17 96 3—ARCHITECTURAL JOURNALISM

Time : Three Hours

Maximum : 100 Marks

Part A

1. List any three historical writing journalists.
2. Differentiate between articles and journals.
3. Write a note on criticism.
4. State any two articles and journals with respect to Architecture fields.
5. Write a note on role of photography in Architectural Journalism.
6. List the factors considered for content writing.
7. State the impact of new technologies in Architecture.
8. List any new five buildings referred in journals which have great impact in the place.

(8 × 5 = 40 marks)

Part B

1. Briefly discuss with suitable example relationship between Architecture and Journalism.

Or

2. Discuss the technical skills involved in Journalism.
3. Explain the factors for failure of Architectural Journalism.

Or

4. Bring out your criticism of built environment in various aspects observed from your case studies.
5. Compare the relationship between pictorial, verbal and visual relationship of Architectural journalism.

Or

Turn over

6. Briefly describe the techniques involved in clicking photographs with respect to Architectural journalism.
7. Are the two aspects like design and new techniques play vital role in perception of built environment in journalism ? Illustrate with suitable examples.

Or

8. What is the need to write the journals and articles in Architecture of varied types and how it is going to help in future ?

(4 × 15 = 60 marks)

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**NINTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) [REGULAR]
EXAMINATION NOVEMBER 2021**

B.Arch.

AR 17 96 2—SERVICES IN HIGH - RISE BUILDINGS

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. What constitute the definition for High rise building ?
2. Write a note on ergonomics in design ?
3. How to calculate the sump for High rise building ?
4. State the factors to be considered for fire safety systems in High rise building.
5. Sketch the electrical supply distribution system in High rise building.
6. How to calculate the number of elevators in High rise building ?
7. Write a note on mechanical ventilation system in High rise building.
8. List the factors to be considered in design aspects for electrical supply for High rise building.

(8 × 5 = 40 marks)

Part B

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

1. Is the “Intelligent Automation system is required for today context in high rise structure. Illustrate with suitable examples.

Or

2. Bring out the merits and demerits of High rise building in terms of cultural and social aspects. Illustrate with suitable examples.
3. Briefly discuss the factors to be considered in design aspects for wafer supply systems in High rise building. State its merits and demerits observed from the case studies.

Or

4. Describe the design aspects of High rise building observed from the case studies.

Turn over

5. Is a service in high rise structure needs special attention in design aspects and explore how it is guided in building regulations in Indian context.

Or

6. Briefly describe the Automation energy management in High rise building.
7. Describe the merits and demerits of reuse of waste water in High rise building.

Or

8. Discuss the salient features of vertical services in High rise building and how to enhance in design aspects. Illustrate with suitable examples.

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALICUT

**NINTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) [REGULAR]
EXAMINATION NOVEMBER 2021**

B.Arch.

AR 17 96 1—ARCHITECTURAL CONSERVATION

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. What do you mean by the term “Ethics” in conservation ?
2. Differentiate between tangible and intangible built heritage with suitable examples.
3. Abbreviate and state the objectives of INTACH.
4. List the any two rules of ASI to protect the heritage structure.
5. List any five world heritage sites.
6. How to grade the monuments with respect to conservation ?
7. List the effects of decay in built heritage.
8. What is the necessary to preserve or conserve the built heritage or site ?

(8 × 5 = 40 marks)

Part B

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

1. Is the “Urbanization “is one of the challenges of conservation of built heritage in metro cities in India. Illustrate with suitable examples.

Or

2. Discuss the need and scope for multidisciplinary expertise in conservation of heritage site. Illustrate with suitable examples.
3. Briefly discuss the contribution of John Ruskin with respect to conservation.

Or

4. Explain the salient features of Burra Charter 1979.

Turn over

5. Describe the kind of intervention underwent in conservation of heritage site case studies.

Or

6. Briefly describe the techniques used for conservation of built heritage.

7. Is systematic investigation is required for conservation of any projects. illustrate with suitable examples.

Or

8. Is impact of tourism development is kind of man-made cause for conservation of heritage structure and site. Illustrate with suitable examples.

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALCUTTA

**NINTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) [REGULAR]
EXAMINATION, NOVEMBER 2021**

B.ARCH

AR 17-95—PROFESSIONAL PRACTICE

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all **eight** questions.*

Each question carries 5 marks.

1. Write a note on duties and liabilities of Architectural profession.
2. List the four criteria to improve the office management.
3. List the types of architectural services offered for any type of project.
4. Write a note on scale of charges of Architectural services.
5. Write a note on tender.
6. List the four characteristics of tender.
7. What do you mean by the term arbitration ?
8. What do you mean by the term copyright and patents in Architectural profession ?

(8 × 5 = 40 marks)

Part B

*Answer **all** question.*

Each question carries 15 marks.

1. Discuss the code of conduct for Architects and punitive actions for professional misconduct.

Or

2. Explain the salient features of functions of IIA.
3. Briefly discuss the salient features of CoA 1972.

Or

4. Explain the types of Architectural Competition.

Turn over

5. Explain the advantages, procedures and conditions of E-Tendering.

Or

6. Explain the types of project execution.

7. Explain the role of Architect in arbitration process.

Or

8. Explain the types of esaements.

(4 × 15 = 60 marks)

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**NINTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) [REGULAR
EXAMINATION, NOVEMBER 2021**

B.ARCH

AR 17-94—CONSTRUCTION AND PROJECT MANAGEMENT

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer **eight** questions.*

Each question carries 5 marks.

1. State the objectives of project management ?
2. List the elements of network.
3. List the four steps of development of bar chart.
4. Write a note work break down structure.
5. List the characteristics of CPM and PERT.
6. List the software used in project management and its advantages.
7. Sketch the network diagram.
8. Write a note on time cost trade off in project management.

(8 × 5 = 40 marks)

Part B

*Answer **all** question.*

Each question carries 15 marks.

1. Explain the role of management in project execution ?

Or

2. Describe the various phases of project management ?

3. The time estimates for three activities A, B, C and D are as follows.

	<i>Optimistic time</i>	<i>Most likely time</i>	<i>Pessimistic time</i>
A	10	12	14
B	6	8	12
C	5	10	12

Determine expected time and variance for each activity. Which activity has more reliable time estimates ?

Or

4. Explain the tabular form of doing computations of CPM network elements ?
 5. Distinguish between PERT and CPM techniques. State its merits and demerits.

Or

6. A project consists of 8 activities A, B, C, D, E, F, G and H with their times of completion as follows :

<i>Activities</i>	<i>Duration (Weeks)</i>
A	2
B	4
C	2
D	4
E	6
F	4
G	5
H	4

A and B can be performed in parallel. C and D cannot start until A is complete. E cannot start until half the work of activity C is complete. F can start only after activity D is complete. H is the last activity, which should succeed E.

- (a) Draw the bar chart.
 (b) What is the total time of completion of the project ?
 (c) If there is increase of 3 weeks in time of completion of Activity A, what will be the corresponding increase in the total time of the completion of the project ?
7. Discuss in brief the two approaches of resources allocation with suitable examples ?

Or

8. Illustrate with suitable examples, what is the need to study about project management in Architecture ?

(4 × 15 = 60 marks)

**NINTH SEMESTER B.ARCH. DEGREE (2017 SCHEME) [REGULAR]
EXAMINATION, NOVEMBER 2021**

B.Arch.

AR 17-92—EARTHQUAKE-RESISTANT STRUCTURES

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer any **eight** questions.*

Each question carries 5 marks.

1. List the cause and effects of earthquake ?
2. Write a note on fault line and epicentre distance in earthquake study ?
3. Differentiate between ground rupture and failure ?
4. Write a note on waves generated by ground motion ?
5. List the assumption made in the analysis of earthquake design of buildings ?
6. Write a note on soft-storey in earthquake study ?
7. Differentiate between disaster mitigation and management ?
8. Write a note a pre-cautions needs to be taken in to consideration for after and before disaster ?

(8 × 5 = 40 marks)

Part B

*Answer **all** questions.*

Each question carries 15 marks.

1. Describe the direct and indirect effect of earthquake ?
- Or*
2. Briefly discuss the case studies on earthquake and its impact on built environment ?
 3. Write a note on strong ground motion ? Discuss its characteristics ?

Or

4. Explain the two measures of earthquake ?

Turn over

5. Briefly discuss seismic design requirements ?

Or

6. Is building configuration and proportion plays vital role in earthquake resistant design. Illustrate with suitable examples ?

7. Discuss with suitable examples the emergency planning preparedness at the city ?

Or

8. Explore the role of community participation during and after earthquake disaster. Illustrate with suitable examples.

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALICUT

**NINTH SEMESTER B.ARCH. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
[2012 SCHEME] EXAMINATION, DECEMBER 2021**

B.Arch.

AR 12 98—CONSTRUCTION MANAGEMENT

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. Write note on project managers in building industry.
2. Write a note on controlling in project management.
3. Differentiate PERT and CPM Network.
4. Write note on work break down structure.
5. Write note on critical path.
6. Sketch the CPM process.
7. Difference between direct and indirect cost.
8. Sketch the components of project cost

(8 × 5 = 40 marks)

Part B

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

1. Discuss why planning is necessary. Explain the various steps for planning the project.

Or

2. Explain the process involved in project management cycle.
3. Explain the steps in development of network.

Or

4. Explain the application of principles and application of CPM and PERT Network.

Turn over

5. Write note critical path and explain how it is determined.

Or

6. A construction project consists of 8 activities A, B, C, D, E, F, G, H. Draw the network and number the events if :

(I) Activities A, B and E can start concurrently.

(II) Activities C and D are concurrent and depend on the completion of both A and B.

(III) Activities F and G are concurrent and depend on the completion of C.

(IV) Activity T depends upon the completion of D, E and F.

(V) The project is complete when G and H are done.

7. With the help of an example explain the resources smoothing method.

Or

8. Explain the project management software packages.

(4 × 15 = 60 marks)

**NINTH SEMESTER B.ARCH. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
EXAMINATION, DECEMBER 2021**

B.Arch.

AR 12 97—BUILDING SERVICES IV (HEATING VENTILATION AND
AIR CONDITIONING)

(2012 Scheme)

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. Write a note on principles of heat transfer.
2. Write a note on Insulation.
3. List the refrigeration system components.
4. Write a note on refrigeration capacity.
5. List the properties of psychrometric.
6. Differentiate RSHF and GSHF.
7. Write a note purpose to study about the constant pressure method.
8. List the types of AC systems.

(8 × 5 = 40 marks)

Part B

Answer all questions.

1. Explain the Newton's law of cooling.
- Or*
2. Discuss and derive the Wien's displacement law.
 3. Explain the eco-friendly refrigerators and compare with conventional refrigerators.

Or

4. Briefly explain the Carnot refrigeration cycle.

Turn over

5. Explain the factors governing effective temperature.

Or

6. Briefly explain the process of Psychrometric chart.

7. Explain the factors to be consider determining the duct size by using equal friction method.

Or

8. Briefly explain the cooling load calculation for various heat sources.

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALICUT

**NINTH SEMESTER B.ARCH. (SUPPLEMENTARY/IMPROVEMENT) DEGREE
[2012 SCHEME] EXAMINATION, DECEMBER 2021**

B.ARCH.

AR 12 96—EARTH QUAKE RESISTANT DESIGN AND DISASTER MANAGEMENT

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 5 marks.

1. List the states in India comes under seismic zone III & V.
2. Write note on Fault lines.
3. Distinguish between body waves and surface waves.
4. Distinguish between Rayleigh waves and love waves.
5. Distinguish between body waves and surface waves.
6. Distinguish between Rayleigh waves and love waves.
7. Distinguish between disaster management and mitigation.
8. Write note on vulnerability assessment.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks.

1. Explain the role of Architect and structural engineer in earthquake resistant design of residential buildings.

Or

2. Explain the classification of building failure pattern due to earthquake in India. Illustrate with suitable examples and sketches.
3. Explain the strong ground motion and discuss their characteristics.

Or

4. Explain the two measures of earthquake.

Turn over

5. Explain the earthquake resistance of a structure affected by nonsymmetry and elongated shape of the buildings.

Or

6. Explain the factors affecting earthquake loading.
7. List the types of disaster and explain the causes and effects of disaster mitigation and management. Illustrate with suitable examples.

Or

8. Explain the pre-disaster mitigation measures.

(4 × 15 = 60 marks)

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**NINTH SEMESTER B.ARCH. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
[2012 SCHEME] EXAMINATION, DECEMBER 2021**

B.Arch.

AR 12 95—ENVIRONMENTAL STUDIES

Time : Three Hours

Maximum : 100 Marks

Part A

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

Write short notes on :

- (a) Impacts of mining.
- (b) Fertilizer-pesticide problems.
- (c) Desert ecosystem.
- (d) Biodiversity hotspots.
- (e) Industrial wastes.
- (f) Environmental impact assessment.
- (g) Acid rain.
- (h) Nuclear accidents.

(8 × 5 = 40 marks)

Part B

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

1. (a) What are the problems associated with over exploitation of natural resources ?

Or

- (b) The growing energy needs are straining the existing energy sources. Suggest sustainable means of addressing this problem.

Turn over

2. (a) Explain the ecological pyramid.

Or

(b) What are the threats to biodiversity ?

3. (a) Explain the role of disaster management in the context of earthquakes.

Or

(b) What are the various types of pollution ?

4. (a) Explain the benefits of proper watershed management.

Or

(b) What are the major causes of global warming ?

(4 × 15 = 60 marks)

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**NINTH SEMESTER B.ARCH. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
EXAMINATION, DECEMBER 2021**

B.Arch.

AR 12 94—PROFESSIONAL PRACTICE

(2012 Scheme)

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. In what way functions of IIA different from CoA.
2. State any four responsibilities of Principal Architect.
3. Write a note on tender scrutiny.
4. Differentiate open and closed tender.
5. List the factors to be considered to prepare drawing for contract.
6. List the types of contact.
7. List any four factors affecting valuation.
8. Write note of purpose of valuation reports.

(8 × 5 = 40 marks)

Part B

Answer all questions.

1. Explain the scale of services and fees of Architect of varied projects.

Or

2. Explain the structure of IIA and CoA.
3. Explain the factors where tender becomes ineffective.

Or

4. Discuss the importance to study about the tender in Architecture and function of an Architect in the preparation of tender document.

Turn over

5. Explain the role of Arbitrator as an Umpire and award for the projects.

Or

6. Write note on the following :

- (a) Discharge of contract.
- (b) Duties and liabilities of contractor.

7. Explain the essential elements involved in the valuation report and write its purpose.

Or

8. Prepare the simple tender document for Government residential building and list the procedure for executing the work.

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALICUT

**NINTH SEMESTER B.ARCH. (SUPPLEMENTARY/IMPROVEMENT) DEGREE
[2012 SCHEME] EXAMINATION, DECEMBER 2021**

B.ARCH.

AR 12 93—TOWN PLANNING

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 5 marks.

1. Write short notes on :

- (a) Lewis Mumford.
- (b) Navi Mumbai.
- (c) Suburbs.
- (d) Conurbation.
- (e) Perspective plan.
- (f) Local area planning.
- (g) SEZ.
- (h) Role of town planning departments.

(8 × 5 = 40 marks)

Part B

Answer all questions.

Each question carries 15 marks.

1. (a) Describe the town planning in Indus Valley Civilization.

Or

(b) What are the contributions of CA Doxiadis to town planning ?

2. (a) Explain the need for sustainable city planning.

Or

(b) Describe the impact of urbanisation on cities.

Turn over

3. (a) Integration of rural and urban planning is essential for national development. Substantiate this statement.

Or

- (b) What types of surveys are conducted to gather data for planning ?

4. (a) What are the tools used for land use control ?

Or

- (b) Explain the Coastal Regulation Zones.

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALICUT

**NINTH SEMESTER B.ARCH. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
[2012 SCHEME] EXAMINATION, DECEMBER 2021**

B.Arch.

AR 12 92 4—ENERGY EFFICIENT ARCHITECTURE (Elective II)

Time : Three Hours

Maximum : 100 Marks

Part A

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

Write short notes on :

- (a) Roof pond.
- (b) Isolated gain.
- (c) Solar panels.
- (d) Active systems for cooling.
- (e) Environmental factors affecting energy use in buildings.
- (f) Effect of energy sources on energy use.
- (g) Any one method of energy conservation.
- (h) Effect of orientation on harnessing solar power.

(8 × 5 = 40 marks)

Part B

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

1. (a) Explain passive heating.

Or

- (b) How can buildings in hot and arid zones be passively cooled ?

Turn over

2. (a) What are the advantages and limitations of tapping solar energy ?

Or

(b) A hybrid of active and passive systems of tapping solar energy is most energy efficient. Substantiate this statement.

3. (a) What are the functional factors that affect energy use in a building ?

Or

(b) How can design of the building envelope affect the consumption of energy ?

4. (a) How can landscape design contribute to energy conservation ?

Or

(b) What is solar architecture ? How can this concept be integrated into building design for energy conservation ?

(4 × 15 = 60 marks)

**NINTH SEMESTER B.ARCH. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
(2012 SCHEME) EXAMINATION, DECEMBER 2021****B.ARCH.****AR 12 92 3—URBAN CONSERVATION (Elective II)**

Time : Three Hours

Maximum : 100 Marks

Part A

1. What is the need to study about the values in Architectural Conservation ?
2. Write a note on Authenticity.
3. State any two philosophies observed in case studies.
4. List any four strategies observed in urban conservation projects.
5. Write a note on purpose of integrated conservation.
6. List any five world heritage sites.
7. List any five international agencies involved in conservation.
8. State the aspects of urban conservation.

(8 × 5 = 40 marks)

Part B

1. Briefly analysis the character of heritage zones. Illustrate with suitable examples.
Or
2. Describe with suitable example the methodology of conservation of heritage zones in Europe.
3. Describe Adaptive reuse strategies of urban renewal with suitable examples.
Or
4. Describe redevelopment strategies of urban renewal with suitable examples.
5. Describe the role of conservation to conserve the environment with suitable examples.
Or
6. Explain the role of DCR guidelines in conservation. Illustrate with suitable examples.
7. Explain the role and functions of ASI.
Or
8. Explain the role and functions of any one of the international agency.

(4 × 15 = 60 marks)

**NINTH SEMESTER B.ARCH. (SUPPLEMENTARY/IMPROVEMENT) DEGREE
[2012 SCHEME] EXAMINATION, DECEMBER 2021**

B.ARCH.

AR 12 92 2—ARCHITECTURAL RESEARCH (ELECTIVE II)

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. Write short notes on :

- (a) Deductive approach.
- (b) Ethics in research.
- (c) Theory and its relation to method.
- (d) Statistical studies.
- (e) Simulation and modelling research.
- (f) Logical argumentation as a research strategy.
- (g) Writing strategies in research report.
- (h) Scholarly writing.

(8 × 5 = 40 marks)

Part B

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

1. (a) Give an overview of the history of architectural research.

Or

(b) Explain how research can contribute to the practice of architecture.

2. (a) Discuss the differences between quantitative and qualitative methods of research.

Or

(b) Explain the process of hypothesis formulation and testing.

Turn over

3. (a) Give examples of interpretative historical research in architecture.

Or

(b) Explain the relevance of case study strategy in architectural research.

4. (a) Explain the format of a research report.

Or

(b) How can one achieve readability in research writing?

(4 × 15 = 60 marks)

CHMK LIBRARY UNIVERSITY OF CALICUT

**NINTH SEMESTER B.ARCH. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
[2012 SCHEME] EXAMINATION, DECEMBER 2021**

B.Arch.

AR 12 921—URBAN DESIGN (Elective I)

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer any **eight** questions.*

Each question carries 5 marks.

1. List any *five* objectives of urban design.
2. Difference between urban planning and urban design.
3. Abbreviate UDPFI and list it's any *two* purpose.
4. In what way financing agencies in evaluating the urban design projects ?
5. What do you mean by the term urban renewal ?
6. State any *five* micro scale projects referred in your syllabus as part of urban design project formulation.
7. What do you mean by the term space linkage ?
8. What do you mean by the term feasibility with respect to urban design ?

(8 × 5 = 40 marks)

Part B

*Answer **all** questions.*

Each question carries 15 marks.

1. Briefly discuss the implementation of Kevin Lynch elements in your neighbourhood street. Illustrate with suitable sketches ?

Or

2. Briefly explain the need for urban design in present day context. Illustrate with suitable examples and sketches.

Turn over

3. Describe with suitable examples methodologies to be followed for urban conservation projects.

Or

4. Briefly discuss issues identified in water front development and suggest suitable solution for the same.

5. Discuss the characteristics of urban space with suitable case studies.

Or

6. Explain the role of Urban Arts Commission in urban design projects observed from the case studies.

7. Briefly discuss the evaluation of urban design through case studies.

Or

8. Bring out the pros and cons of urban design projects of India observed from case studies.

(4 × 15 = 60 marks)