B

B.Arch. Degree VIII Semester Regular/Supplementary Examination July 2024

AR 1802 PROFESSIONAL PRACTICE

(2014 Scheme)

Time: 3 Hours

Maximum Marks: 100

PART A

(Answer *ALL* questions)

(8 × 5 = 40)

I.   Write short notes on the following:

(a)   Comprehensive architectural services.

(b)   Code of professional conduct laid by the Council of Architecture.

(c)   Work order letter.

(d)   Security Deposit.

(e)   Role of umpire in Arbitration.

(f)   Kinds of Arbitration.

(g)   Scientific Management.

(h)   Book keeping.

PART B

(4 × 15 = 60)

II.   Discuss the significance and implications of the Architects Act 1972 in regulating the architectural profession. Also analyze the objectives, provisions and regulatory framework established by the Act and evaluate its impact on architectural practice, professional standards and public protection.

OR

III.   Enumerate the functions and role of Indian Institute of Architects. Also describe the Election of members and student membership.

IV.   What are the key stages and components of the tender process in construction projects? Discuss the importance of pre-qualification criteria, bid evaluation methods and contract awarding procedures.

OR

V.   Discuss the types of contracts in detail. Also explain the conditions favouring discharge of contracts.

VI.   Enumerate the duties and liabilities of contractors. What is meant by liquidated damages and variation and extras prime cost and provisional sum?

OR

VII.   Define Arbitration. What are the main advantages of settling the disputes and differences by Arbitration?

VIII.   Describe the role as well as principles of office management in Architectural practice.

OR

IX.   Briefly discuss the duties and responsibilities of the architects to their clients. How can discipline be maintained in an architect's office?

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A

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AR 1803 DISASTER PREPAREDNESS AND MANAGEMENT
(2014 Scheme)

Time: 3 Hours   Maximum Marks: 100

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

I.   Write short notes on:
(a)   Disaster Indian Perspective
(b)   Vulnerability
(c)   Hydrological disaster
(d)   Soil erosion conservation
(e)   Predictability
(f)   Hazard zonation Map.
(g)   Role of NGO in disaster management
(h)   Community health and casualty management.

PART B

(4 × 15 = 60)

II.   Differentiate between hazard and disaster and discuss the types of disaster with examples.

OR

III.   Explain the need for Disaster Management and discuss the disaster management cycle with respect to phases of disaster.

IV.   What is Flood? What are the impacts of flood and its mitigation strategies?

OR

V.   What are man-made hazards? Discuss Terrorism and its impacts.

VI.   Discuss the need of Community preparedness, the process of community preparedness and the role of community in different phases of disaster.

OR

VII.   Discuss retrofitting as mitigation strategy stating examples.

VIII.   Discuss Recovery, Reconstruction and Rehabilitation.

OR

IX.   Explain the role of remote sensing and GIS in Disaster Management.

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AR 1804 CONSTRUCTION MANAGEMENT
(2014 Scheme)

Time: 3 Hours   Maximum Marks: 100

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

I.   Write short notes on the following
   (a)   Direct cost and Indirect cost.
   (b)   Objectives of construction planning.
   (c)   Work break down structure.
   (d)   Elements of a network.
   (e)   Free Float and Total Float.
   (f)   PERT.
   (g)   Resource allocation.
   (h)   Role of a project manager.

PART B

(4 × 15 = 60)

II.   What are the various stages in a project management cycle? Explain in detail each of the stages and how it contributes to the overall management of the project.

OR

III.   A concrete mixer costs ₹12,000 and has an expected life of 5 years and salvage value of ₹2000. It is expected to work 2000 hours in a year. Determine the annual depreciation till its useful life span using the
   i)   Sum of the years method.
   ii)   Double declining balance method.

IV.   Prepare a Gantt Chart for the given commercial project and draw the cost completion curve.

Activity	Description	Duration	Cost
1	Foundations and slab utilities	6	12500
2	Structural Concrete Frame	4	23000
3	Roof Deck	4	10000
4	Floor Slab	2	5500
5	Exterior Walls	6	19000
6	Windows and Doors	2	5000
7	Mechanical	14	16800
8	Electrical	14	15700
9	Finishes	4	8800
10	Sewage and Infrastructure	10	10000

OR

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V.   Prepare a Network diagram or a precedence diagram for the given set of activities.

Activity	Predecessors (depends on)
A	L
B	L,R
C	G
D	---
E	F,M,N,Q
F	C,P,R
G	D,H
H	---
J	L
K	L,O
L	D,G,H
M	A,B,L,R
N	J,K
O	G
P	C,R
Q	A,J,L
R	C

VI.   Given the following project logic and estimates of activity duration, determine the mean project duration and project duration variance. How many days would be required to give a 90 percent chance of completing the project on time?

Activity	Successors	Duration		
		a	b	c
A	-	5	6	9
B	J	5	8	13
C	A	3	4	9
D	A	8	9	10
E	D,J	10	12	15
F	H,G,K	8	11	12
G	D,J	2	3	3
H	B,C	5	7	11
I	E	3	5	9
J	A	8	9	10
K	A	12	14	18

OR

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VII.   Given the following data, draw the network and plot the least-cost curve for going from crash duration to a normal duration. Assume an indirect cost of ₹200/day.

Activity	Duration		Preceded by	Crash Cost	Cost Rate
	Crash	Normal			
A	15	20	H	6000	400
B	5	7	H	2750	550
C	6	12	I	3000	500
D	3	9	B,C	4500	1500
E	6	10	C	4200	700
F	3	7	A,D,E	600	200
G	2	4	-	400	200
H	10	14	G	4000	400
I	7	9	G	3800	400

VIII.   Explain the concept of the duration-cost trade-off in the context of construction management. Identify and describe at least three methods that can be used to expedite the project, including their potential impact on both the duration and the cost.

OR

IX.   How does project management software help in project planning and time cost optimization? Explain any two softwares used in construction project management.

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AR 1805 (a) ENERGY EFFICIENT ARCHITECTURE (ELECTIVE III)
(2014 Scheme)

Time: 3 Hours

Maximum Marks: 100

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

I.   Write short notes on the following:
(a)   Energy efficiency in architecture.
(b)   Energy efficient HVAC system.
(c)   Solar water heating.
(d)   Reduction of transportation energy.
(e)   IoT.
(f)   Power management and video surveillance.
(g)   Biophilia and Biophilic design.
(h)   Patterns of biophilic design.

PART B

(4 × 15 = 60)

II.	Explain how solar passive techniques in building design help to save energy with the aid of sketches.	(15)
	OR	
III.	Define life cycle energy of a building. Explain it in terms of embodied energy and operational energy.	(15)
IV.	How did smart building evolve over time? How does a smart building differ from an ordinary building?	(15)
	OR	
V. (a)	ICT in smart buildings, needs and merits.	(5)
(b)	Energy efficiency and continuing evolution of technology in smart buildings.	(10)
VI.	Explain any four smart building systems.	(15)
	OR	
VII.	Explain how HVAC and lighting control can be achieved in a smart building.	(15)
VIII.	Explain the impact of Biophilic design and its energy effectiveness.	(15)
	OR	
IX.	Explain the impact of Biophilic design on master plan.	(15)

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AR 1806 (a) ARCHITECTURAL CONSERVATION (ELECTIVE 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) INTACH
   (b) Ethics in Conservation practice.
   (c) Wooden Roof Construction.
   (d) Spanning elements
   (e) Pollution causes decay.
   (f) Vandalism.
   (g) Restoration in Architectural Conservation.
   (h) Seven degrees of Intervention in conservation.

PART B

(4 × 15 = 60)

II.   Describe the beginning of conservation movement.
                                        OR
III.   Describe the beginning and formation of ASI. How does it help in the protection of historic structures?

IV.   Kerala traditional architecture is one of the finest examples of Vernacular Architecture. Explain.
                                        OR
V.   Elaborate with suitable examples the defects in construction techniques for structures?

VI.   What are the climatic causes of decay on built heritage?
                                        OR
VII.   Explain the consequences of natural disasters in old structures.

VIII.   What are the various steps in Architectural Documentation? How does it help in conservation of the historic fabric?
                                        OR
IX.   Explain 'Values' associated with historic monuments.

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