

	P.E.S. COLLEGE OF ENGINEERING (AN AUTONOMOUS INSTITUTE) CHH. SAMBAJINAGAR-431002 Summer Examination – 2026 Course: F.Y.M.Tech. Branch : Structural Engineering 	
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B)	Describe the construction techniques used in building gopurams in South Indian temples. Solution:- Marking Scheme <table><tr><th>Content</th><th>Marks Distribution</th></tr><tr><td>Introduction to gopurams</td><td>2</td></tr><tr><td>Materials used in construction</td><td>3</td></tr><tr><td>Masonry and structural techniques</td><td>3</td></tr><tr><td>Stability and load transfer concepts</td><td>2</td></tr><tr><td>Summary</td><td>2</td></tr></table>	Content	Marks Distribution	Introduction to gopurams	2	Materials used in construction	3	Masonry and structural techniques	3	Stability and load transfer concepts	2	Summary	2	K2	
Content	Marks Distribution														
Introduction to gopurams	2														
Materials used in construction	3														
Masonry and structural techniques	3														
Stability and load transfer concepts	2														
Summary	2														
			12												
Q. 3	Solve Any one of the following.														
A)	Explain the structural features of the TajMahal with reference to dome construction, symmetry, and load distribution. Solution:- Marking Scheme <table><tr><th>Content</th><th>Marks Distribution</th></tr><tr><td>Introduction to TajMahal</td><td>2</td></tr><tr><td>Symmetrical planning and layout</td><td>3</td></tr><tr><td>Dome construction techniques</td><td>3</td></tr><tr><td>Load distribution mechanism</td><td>2</td></tr><tr><td>Conclusion</td><td>2</td></tr></table>	Content	Marks Distribution	Introduction to TajMahal	2	Symmetrical planning and layout	3	Dome construction techniques	3	Load distribution mechanism	2	Conclusion	2	K2	12
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B)	Describe the marble inlay techniques and construction materials used in Mughal structural engineering. Solution:- Marking Scheme <table><tr><th>Content</th><th>Marks Distribution</th></tr><tr><td>Introduction to Mughal construction materials</td><td>2</td></tr><tr><td>Marble properties and applications</td><td>3</td></tr><tr><td>Inlay techniques and craftsmanship</td><td>3</td></tr><tr><td>Structural significance of materials</td><td>2</td></tr><tr><td>Conclusion</td><td>2</td></tr></table>	Content	Marks Distribution	Introduction to Mughal construction materials	2	Marble properties and applications	3	Inlay techniques and craftsmanship	3	Structural significance of materials	2	Conclusion	2	K2	12
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Q.4	Solve Any one of the following.														
A)	Apply the principles of truss and cantilever systems to explain the structural behavior of the Pamban Bridge railway bridge. Solution:- Marking Scheme <table><tr><th>Content</th><th>Marks Distribution</th></tr><tr><td>Introduction to railway bridge engineering</td><td>2</td></tr><tr><td>Explanation of truss systems</td><td>3</td></tr><tr><td>Cantilever action and load transfer</td><td>3</td></tr><tr><td>Application to Pamban Bridge structure</td><td>2</td></tr><tr><td>Conclusion</td><td>2</td></tr></table>	Content	Marks Distribution	Introduction to railway bridge engineering	2	Explanation of truss systems	3	Cantilever action and load transfer	3	Application to Pamban Bridge structure	2	Conclusion	2	K3	12
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Conclusion	2														
B)	Demonstrate the application of gravity dam design principles in the construction of the Mullaperiyar Dam. Solution:- Marking Scheme <table><tr><th>Content</th><th>Marks Distribution</th></tr><tr><td>Introduction to hydraulic structures</td><td>2</td></tr><tr><td>Gravity dam design principles</td><td>3</td></tr><tr><td>Materials used in dam construction</td><td>3</td></tr><tr><td>Stability and load considerations</td><td>2</td></tr><tr><td>Conclusion</td><td>2</td></tr></table>	Content	Marks Distribution	Introduction to hydraulic structures	2	Gravity dam design principles	3	Materials used in dam construction	3	Stability and load considerations	2	Conclusion	2	K3	12
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Q. 5	Solve Any one of the following.														
A)	Apply the principles of reinforced concrete design and concrete technology in explaining the construction of the BhakraNangalDam. Solution:- Marking Scheme	K3	12												

	<table><tr><th>Content</th><th>Marks Distribution</th></tr><tr><td>Introduction to national infrastructure projects</td><td>2</td></tr><tr><td>Principles of reinforced concrete design</td><td>3</td></tr><tr><td>Concrete technology advancements</td><td>3</td></tr><tr><td>Application in BhakraNangal Dam</td><td>2</td></tr><tr><td>Conclusion</td><td>2</td></tr></table>	Content	Marks Distribution	Introduction to national infrastructure projects	2	Principles of reinforced concrete design	3	Concrete technology advancements	3	Application in BhakraNangal Dam	2	Conclusion	2		
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B)	Apply earthquake resistant design principles in the planning and construction of modern high-rise buildings. Solution:- Marking Scheme <table><tr><th>Content</th><th>Marks Distribution</th></tr><tr><td>Introduction to high-rise structures</td><td>2</td></tr><tr><td>Earthquake resistant design concepts</td><td>3</td></tr><tr><td>Structural systems used in tall buildings</td><td>3</td></tr><tr><td>Safety and stability considerations</td><td>2</td></tr><tr><td>Conclusion</td><td>2</td></tr></table>	Content	Marks Distribution	Introduction to high-rise structures	2	Earthquake resistant design concepts	3	Structural systems used in tall buildings	3	Safety and stability considerations	2	Conclusion	2	K3	12
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