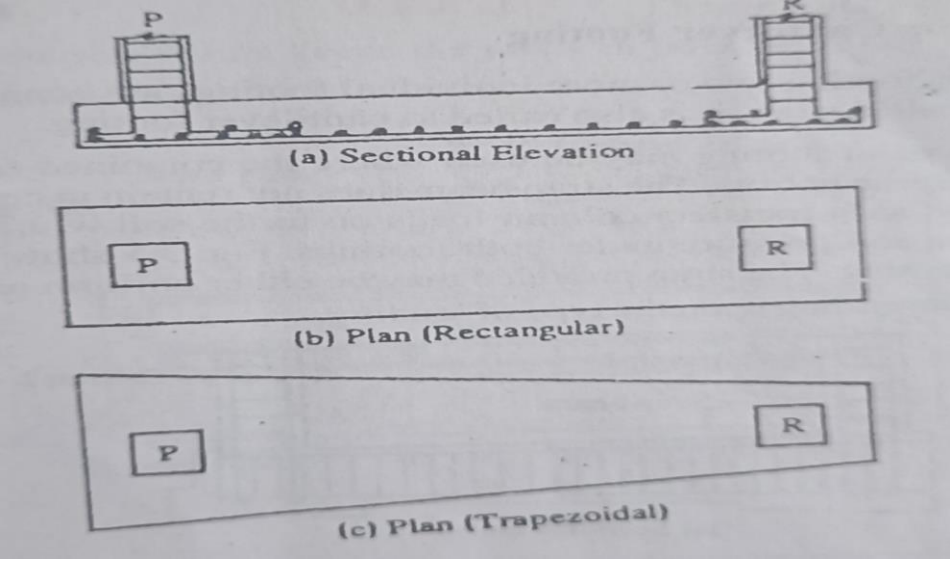
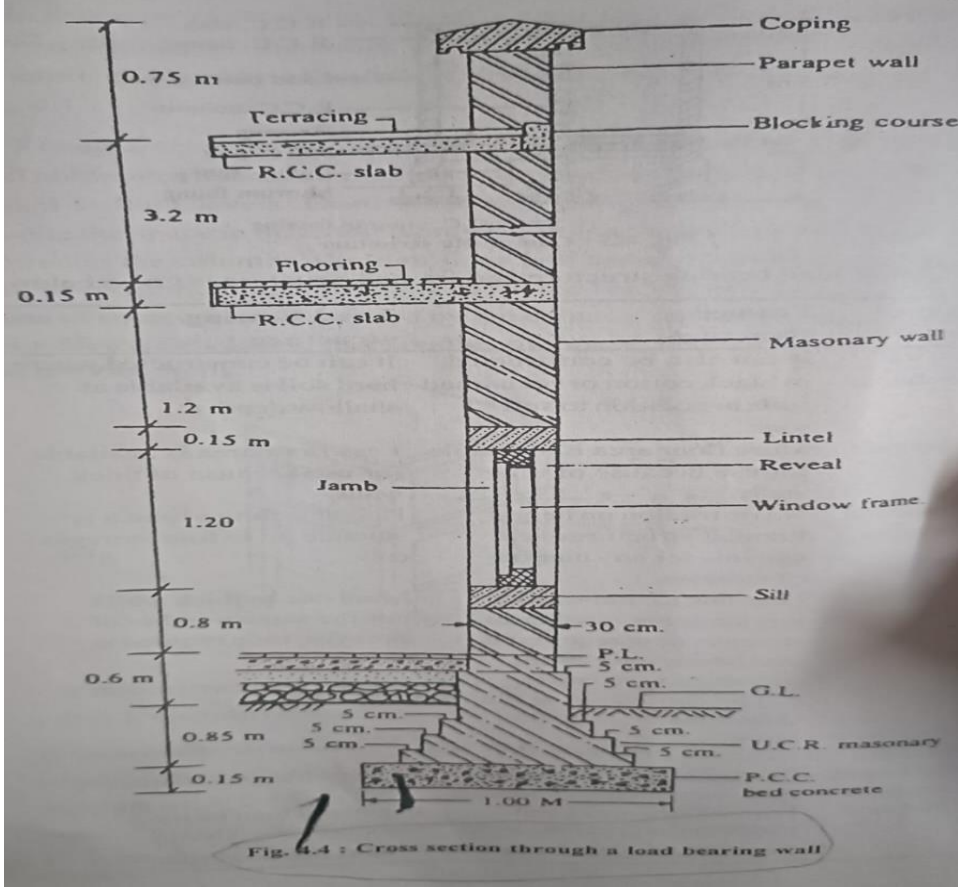
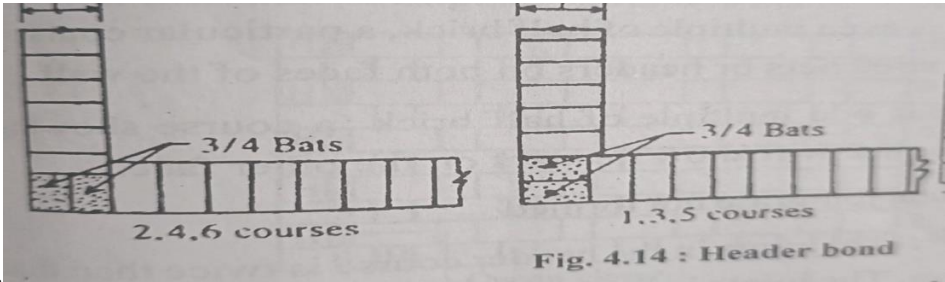


	P.E.S. COLLEGE OF ENGINEERING (AN AUTONOMOUS INSTITUTE) CHH. SAMBHAJINAGAR-431002 Summer Examination – 2026 Course: F.Y.B.Tech. Branch :All Semester : II Subject Code & Name: BTPESA205T Fundamentals of Civil Engineering Max Marks: 30 Date:09/07/2026 Duration: 2 Hr.			
	Instructions to the Students: 1. All the questions are compulsory. 2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question. 3. Use of non-programmable scientific calculators is allowed. 4. Assume suitable data wherever necessary and mention it clearly.			
		(Level/CO)	Marks	
Q. 1	Solve Any five of the following.		2X5=10	
A)	What is Civil Engineering? Ans: Civil engineering is a professional discipline focused on the design , construction and maintenance of the physical and natural built environment including public infrastructure like roads, bridges, dams, buildings.	K1	2	
B)	State Four properties of First class brick. Ans: 1.Machine or table moulded, 2. Uniform red colour, 3. Sharp straight edges, 4. Absorption of water by weight less than 20 %.	K1	2	
C)	What are four field tests of cement? Ans: 1. Colour should be uniform, 2. Should feel cool, 3. There should not be any lumps in cement, 4. Should float on water.	K1	2	
D)	What are the uses of aggregates? Ans: 1. Prevents shrinkage and cracking of mortar or concrete, 2. It is used to give strength.	K1	2	
E)	What is Fly-ash? Ans: Fly ash is a fine , powdery byproduct of burning pulverised coal in thermal power plants consisting of silica, alumina and iron oxide.	K1	2	
F)	What is mild steel ? Ans: Steel is a combination of iron and carbon and when carbon present is less than 0.25% in steel it is called mild steel.	K1	2	
G)	What are theuses of bitumen? Ans: Bitumen is used as a binder, cementing, adhesive and water proofing material.	K1	2	
Q.2	Solve Any Two of the following.		10	
A)	Define shallow foundation. What are the types of shallow foundation? Explain one of them. Ans: If the ratio of depth to width of foundation is less than one , it is called shallow foundation. Types: 1. Spread footing, 2. Isolated column footing, 3. Combined footing, 4.Continuous footing, 5. Strap footing, and mat foundation. Spread footing: Spread footings are commonly used shallow foundation to transfer load of wall or isolated column. The base of the wall or column is spread to distributethe load on large area to reduce intensity of load	K2	5	

B)	What are the purposes of foundation? Ans: the purposes are: 1. To distribute the load on larger area, 2. To prevent unequal settlement of the foundation, 3. Provide level and hard surface, 4. To increase stability, 5. To prevent lateral movement of supporting material.	K2	5
C)	Draw a neat sketch of “ plan and elevation of trapezoidal combined footing”.  (a) Sectional Elevation (b) Plan (Rectangular) (c) Plan (Trapezoidal)	K2	5
Q. 3	Solve Any Two of the following.		10
A)	Draw a “Cross section through a load bearing wall showing different component parts and technical details”.  Fig. 4.4 : Cross section through a load bearing wall	K2	5

B)	What is bond in brick masonry? What are the types of bond? Draw Header bond in plan. Ans: Bond is the arrangement of bricks in courses, in such a way that continuous vertical joints are avoided. Types: 1. Stretcher bond, 2. Header bond, 3. English bond, and 4. Flemish bond  Fig. 4.14 : Header bond	K2	5
C)	Explain the basic principle of surveying. Describe the purpose of surveying. Ans: The basic principle of surveying is to work from whole to part. Purposes: 1. Give details of area surveyed, 2. To determine land area, 3. To show profile of ground, 4. Find volume of work, 5. Locate alignments of highways, canals etc. 6. Present topographical features.	K3	5
	*** End ***		