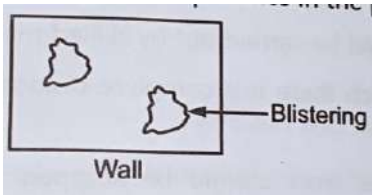


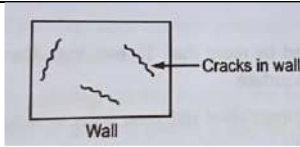


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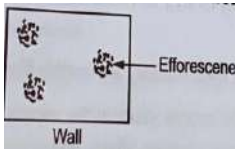
312338 - Building Material and Construction
(Sem II)

As per MSBTE's K Scheme
CE / CR / CS

Unit V		Building finishes	Marks - 10	
S. N.	MSBTE Board Asked Questions	Exam Year	Marks	
1	Explain four defects in plastering with neat sketch.	S-19	4M	
Ans.	<p>Following are the defects in plastering:</p> <p>1) Blistering of plastered surface: it is the defect in which small patches of plaster are swelled out from the plastered surface.</p>  <p>2) Crazing: it is the defect in which a series of hair cracks on plastered surface are formed due to improper proportion of ingredients.</p> <p>3) Cracking: it is the defect in which cracks are developed because of following reasons</p> <ul style="list-style-type: none"> a) Improper preparation of surface to be plastered. b) Structure defects c) Lack of curing d) Faulty workmanship 			



4) Effloresces: it is the defect in which the whitish crystalline substances appears on the surface due to presence of salt in plaster materials and bricks.



5) Popping: it is the defect in which conical holes are formed in the plastered surface due to presence of some particles which expand on setting.

6) Flaking: it is the defect in which very loose mass of plastered surface is formed due to poor adhesion between successive coats.

7) Rust strains: it is the defect in which rust strains are formed on the plastered surface done on metal laths.

8) Uneven surface: it is the defect caused by poor workmanship.

9) Peeling: it is the defect in which there is complete dislocation of some portion of plastered surface which forms the patches.

2	<p>Explain the procedure of preparation of surface along with the method of application of color wash paint on the wall.</p>	S-19	4M
Ans.	<p>The correct preparation of surface plays an important role in preserving the properties and life of the paint.</p> <p>For these the procedure is as follows:</p> <ol style="list-style-type: none"> 1.If the receiving surface is rough, it should be made smooth by rubbing with sand paper. 2.The surface should be perfectly dry before applying the paint. 3.In a case of newly plastered surface, the surface is damp then it should be allowed to dry for at least one month. 4.If the walls are old, then all dirt, dust and rust should be removed from the surface 		

	<p>by HCL.</p> <p>5.If oily materials are available on surface it should be removed by HCL.</p> <p>6.All the nail hole's in the walles should be filled with mortar so that the surface become smooth.</p> <p>7.If the surface is having efflorescence patches they should be clean with dry cloth.</p> <p>8.The surface should be thoroughly rubbed with sand paper, washed clean and allowed to dry before applying the paint.</p> <p>Method of application of colorwash paint on the wall.</p> <p>1.By Brushing.</p> <p>2.By Spraying.</p> <p>3. By Rollers.</p>		
3	State any four precautions to be taken while plastering.	S-19	4M
Ans	<p>i. Before application of the plastering, the surface must be clean and free of dirt, oil, or other elements which may interfere with bonding.</p> <p>ii. Smooth or non-absorbent surfaces should be prepared.</p> <p>iii. It is strongly recommended that the surfaces be dampened with clean water prior to applying the plastering for improved performance in adhesion, durability, and reduced cracking.</p> <p>iv. Sand used must be sieved and washed.</p> <p>v. The material used in preparation of plastering mixes must be measured by volume using gauge-boxes or by weight.</p> <p>vi. Chicken mesh of 20 gauges as approved shall be used over junctions of concrete and masonry or two dissimilar materials.</p> <p>vii. Raking out of joints is expected to be carried out along with masonry but it should be checked thoroughly so as to receive good key.</p> <p>viii. The method of application is also important and hence it is recommended that the mix be thrown on the surface rather than stuck with trowel. This increases the</p>		

	<p>adhesion.</p> <p>ix. Scaffolding should be rigid, allowing free and safe movement on the platform and it should be at sufficient distance or height from the working areas. Scaffolding shall be with proper railings.</p> <p>x. Corners, external or internal, shall be finished along with final coat. It is advisable to have rounded corners.</p> <p>xi. Finishing of plaster may be carried out with wooden float (randhas) or trowelled smooth with sheet metal trowels as specified. Care shall be taken to avoid excessive trowelling and overworking of the wooden float.</p> <p>xii. Plaster shall be cut to correct horizontal or vertical line at the end of the day or if work requires to be suspended for any reason.</p>		
4	State the necessities of 'Plastering'.	S-22	2M
Ans.	<p>Necessity of 'Plastering':</p> <ol style="list-style-type: none"> 1. To provide an even smooth, regular, clean and durable finished surface. 2. To resist the atmospheric influences particularly the infiltration of rain 3. To conceal the defective workmanship. 4. To fill the joints formed in masonry. 5. To cover inferior quality materials. 6. The internal plaster provides a smooth surface which does not allow dust, dirt and vermin to lodge on it. 7. To prepare satisfactory base for decorating the surface by the application of white or colour wash, distemper or paint. 		
5	Illustrate the methods of application of paint and suggest relevant type of paint for different surfaces.	S-22	4M
Ans	<p>Method of application of colour wash paint on the wall.</p> <ol style="list-style-type: none"> 1. By Brushing. 2. By Spraying. 3. By Rollers. <p>Paint for different surfaces:</p> <p>Clean Surface: The surface should be cleaned thoroughly and made free from all dirt, dust, moulds and mortar droppings, by washing and scraping.</p>		

6	Suggest the flooring material for a given type of building with justification.	S-22	4M
Ans	<p>Living room: Ceramic tiles, Kotah, vitrified tiles.</p> <p>Foot Path: Pavement bloc, chequered tiles, interlocking blocks. Auditorium: Concrete floor, P.V.C. tiles</p> <p>Nursery school: Chequered tiles, interlocking blocks, pavement blocks.</p> <p>Bathroom: Glazed tiles, ceramic tiles.</p> <p>Hospital: Marble, ceramic tiles, Kotah, vitrified tiles</p> <p>Garage: Ceramic tiles, Kotah, Granite</p>		
7	Describe the procedure for 'double coat plastering'.	IMP	4M
Ans	<p>The mix ratio of mortar in case of cement plastering depends upon the nature of the work to be plastered.</p> <ul style="list-style-type: none"> • For rich plastering work at sensitive places (e.g. in side bathrooms, W.C. etc.), 1:3 cement plaster mix is used. For general plastering of walls 1:5 to 1:8 cement plaster mixes are used. <p>Preparing the surface:</p> <ul style="list-style-type: none"> • Before applying the plaster, the surface should be prepared properly. • The joint of masonry are properly raked to a depth of 20 mm to provide key to plaster. • The surface is then thoroughly wetted with water, washed well and kept wet for six hours. • When the surface is ready, plaster is applied. <p>Applying the plaster</p> <ul style="list-style-type: none"> • Cement plastering may be applied in one or two coats. • In case plastering is to be done in two coats the first coat is applied as described below. • The mortar is dashed against the prepared surface into a uniform thickness with the 		

	<p>help of trowel.</p> <ul style="list-style-type: none"> • Wooden screeds 7.5 cm wide and of required thickness of the plasters are generally fixed vertically 2.4 to 3 m apart to act as gauges/ guides in order to keep the plaster to the required thickness. Careful plumb line should be done in fixing of these screeds. • Surplus mortar is removed with the help of mason's straight edge and then the mortar is pressed well with a wooden float so that mortar may fill in the joints of the masonry. • The thickness of this coat should not be more than 16 mm. • Before applying the second coat, the first coat is allowed to set but it should not become dry and it is also roughened with a scratching tool to provide key to the second coat. • The second coat is then applied in a thin layer not exceeding 3 mm in thickness within 48 hours. It is then well trowelled and rubbed perfectly smooth with the help of a steel float. It is then allowed to set for 2 days and cured for more than 7 days. 		
8	Define the terms : (i) Plastering (ii) Pointing	S-23	2M
Ans	<p>(i) Plastering: - Plastering is a process of covering rough surface with a plastic material like mortar to obtain an even, smooth, regular, clean and durable surface.</p> <p>(ii) Pointing: - The term pointing is applied to the finishing of mortar joints in masonry. In exposed masonry, joints are considered to be the weakest and most vulnerable spots from which rain water or dampness can enter. Pointing consists of raking the joints to a depth of 10 to 20 mm and filling it with better quality mortar in desired shape.</p>		
9	State any four advantages of roof trusses.	S-23	4M
Ans	<ol style="list-style-type: none"> 1. Strength is increased as compared to traditional roof framing methods. 2. Weight of roof truss is less as compared with others. 3. Improved resistance to wind damage. 4. Roof trusses can be manufactured in variety of shapes and sizes to suit any design. 5. Roof trusses can save on-site costs. 6. Faster shell completion time. 7. Greater flexibility in locating plumbing, duct work and electrical wiring. 8. Quick installation. 		

10	State the necessity of pointing with its suitable type.	S-23	4M
Ans:	<p>1. Tuck pointing is done for pleasing appearance of the building.</p> <p>2. To protect joints from weather effects.</p> <p>3. To improve the appearance of building.</p> <p>4. It helps to seal the voids or spaces which may carry water and cause the decaying of joints mortar.</p> <p>5. It gives strong and reliable bond finishing at joints of bricks/stone masonry.</p> <p>6. It avoids cracking and shrinkage at joints.</p> <p>7. It doesn't allow the dust, dirt to lodge over it.</p> <p>8. Beaded pointing gives a very good appearance but is difficult to maintain.</p> <p>9. Recessed pointing is suitable to withstand the work of bricks better texture and better-quality mortar.</p>		
11	Enlist types of floors and state their suitability.	IMP	2M
Ans.	<p>1. Mud floor- <u>Suitability:</u> This type of flooring is very popular in the villages.</p> <p>2. Wood floor- <u>Suitability:</u> Such type of flooring is used for auditoriums, dance halls, gymnasium floors.</p> <p>3. Stone floor- <u>Suitability:</u> Rough type of stone flooring is used for go-downs, sheds, stores. Fair quality is used where there is considerable wear and tear as in case of bus shelters, schools, hospitals, temple.</p> <p>4. Concrete floor- <u>Suitability:</u> This type of flooring is used both in residential and public buildings.</p>		
12	Enlist any four types of floor finishes.	IMP	2M
Ans.	<p>Four types of floor finishes:-</p> <p>1)Shahabad flooring 2) Kota flooring 3) Marble flooring 4) Granite flooring 5)Kadappa 6) Mosaic tiles 7) Pavement blocks 8)Tiled flooring 9) Tremix floor 10)Vitrified tiles 11) IPS 12) Ceramic</p>		

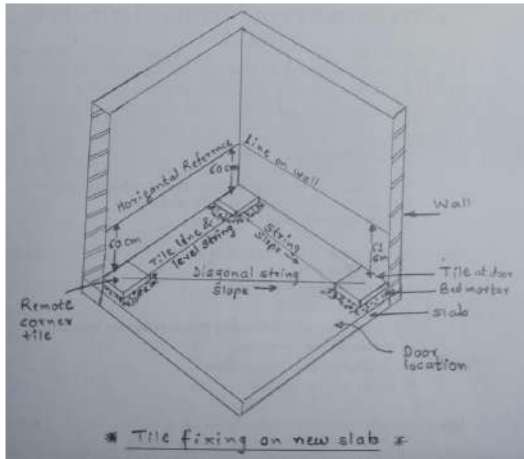
13	Suggest the roofing material for various types of pitched roofs with justification.	IMP	4M
Ans	<p>Roof covering is an essential component of pitched roof to be placed over the framework</p> <p>Types of roof covering</p> <ul style="list-style-type: none"> • Thatch covering: It is a very old roofing method and has been used in both tropical and temperate climates. People who desire a rustic look for their home, would like a more ecologically friendly roof. • Wood shingle roofing: Used in hilly areas • Tile roofing: Used for residential buildings and country houses • Asbestos cement sheet roofing: Used for industrial buildings, factories, sheds, cinema houses, auditorium, residential buildings • Galvanised corrugated iron sheet roofing: Not used for slopes flatter than 1 in 4 • Eternit or slate roofing: slate roof pitches as low as 15°. • Light weight roofing: Used for wide span industrial structures 		
14	Describe the procedure for carrying out the 'Plastering' in cement mortar in two coats. Explain the procedure of internal plastering a newly built brick wall.	IMP	4M
Ans.	<ul style="list-style-type: none"> • The mix ratio of mortar in case of cement plastering depends upon the nature of the work to be plastered. • For rich plastering work at sensitive places (e.g. in side bathrooms, W.C. etc.), 1:3 cement plaster mix is used. For general plastering of walls 1:5 to 1:8 cement plaster mixes are used. <p>Preparing the surface</p> <ul style="list-style-type: none"> • Before applying the plaster, the surface should be prepared properly. • The joint of masonry are properly raked to a depth of 20 mm to provide key to plaster. • The surface is then thoroughly wetted with water, washed well and kept wet for six hours. • When the surface is ready, plaster is applied. <p>Applying the plaster</p> <ul style="list-style-type: none"> • Cement plastering may be applied in one or two coats. • In case plastering is to be done in two coats the first coat is applied as described 		

	<p>below.</p> <ul style="list-style-type: none"> • The mortar is dashed against the prepared surface into a uniform thickness with the help of trowel. • Wooden screeds 7.5 cm wide and of required thickness of the plasters are generally fixed vertically 2.4 to 3 m apart to act as gauges/ guides in order to keep the plaster to the required thickness. Careful plumb line should be done in fixing of these screeds. • Surplus mortar is removed with the help of mason's straight edge and then the mortar is pressed well with a wooden float so that mortar may fill in the joints of the masonry. • The thickness of this coat should not be more than 16 mm. • Before applying the second coat, the first coat is allowed to set but it should not become dry and it is also roughened with a scratching tool to provide key to the second coat. • The second coat is then applied in a thin layer not exceeding 3 mm in thickness within 48 hours. It is then well trowelled and rubbed perfectly smooth with the help of a steel float. It is then allowed to set for 2 days and cured for more than 7 days. 		
15	Describe the procedure of laying a floor finish on a newly constructed slab.	IMP	4M
Ans	<ol style="list-style-type: none"> 1. Slab is cleared off from loose mortar deposited during plaster work and level the surface. 2. Chalk out the marking on wall @ 0.6 m above the slab surface in one level. 3. Construct mortar dots at four corners of wall to required thickness of bedding for tiles (15 X 15 cm or as per tile size) 4. Place the tile at remote corner i.e. at highest position of tile required and check the vertical distance from reference line as required for maintaining required level / slope towards door, by adjusting mortar bedding thickness, check level of tile top with spirit level. 5. Place another tile at opposite corner and follow same procedure as per point no 4 and similarly for all corners. 6. Check diagonal level of tying the by string from corner tile and central tile for 		

reference is fixed.

7. Lay mortar bedding strip between two remote corner and lay the tile in line and level.

8. Repeat point no 7 procedure up to door corner.



16

State the necessities of painting.

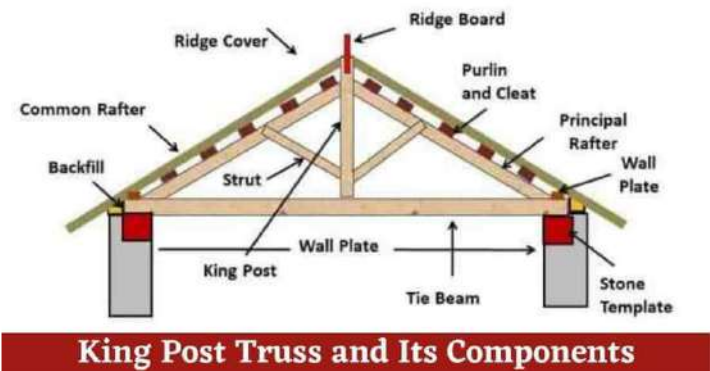
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4M

Ans.

Necessities of painting :-

- **Necessity of painting it protects the surface from weathering effect of the atmosphere.**
- **It prevents decay of wood and corrosion in metal.**
- **It gives good appearance to the surface. Decorative effect maybe ecreated by painting and the surface becomes hygienically good, clean, colorful and attractive.**
- **Due to painting the life of material increases.**
- **Due to painting cleaning of the surface becomes easy.**
- **Painting imparts sanitation and improved illumination.**

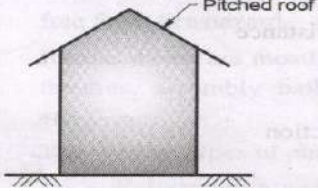
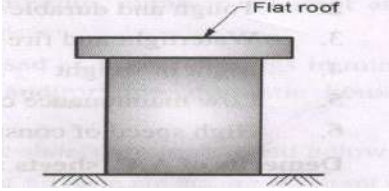
17	Draw a neat sketch of king post truss.	IMP	4 M
19			
19	Explain the procedure of surface preparation along with the method of application of Colour wash paint on the wall.	IMP	4M
Ans.	<p>The correct preparation of surface plays an important role in preserving the properties and life of the paint. For these the procedure is as follows:</p> <ol style="list-style-type: none"> 1. If the receiving surface is rough, it should be made smooth by rubbing with sand paper. 2. The surface should be perfectly dry before applying the paint. 3. In case of newly plastered surface, if the surface is damp then it should be allowed to dry for at least one month. 4. If the walls are old, then all dirt, dust and rust should be removed from the surface. 5. If oily materials are present on the surface, it should be removed. 6. All the nail holes in the walls should be filled with mortar/putty so that the surface becomes smooth. 7. If the surface is having efflorescence patches they should be clean with dry cloth. 8. The surface should be thoroughly rubbed with sand paper, washed clean and allowed to dry before applying the paint. <p>Method of application of colorwash paint on the wall.</p> <p>1. By Brushing. 2. By Spraying. 3. By Rollers</p>		
20	Define Neeru Finishing.	IMP	2M
Ans.	<p>It is final coat / third coat of lime plastering consisting lime and white sand in 1:2 proportion applied after 5days of second coat and finally finished with trowel or polished stone.</p>		

21	State any four characteristics of good Paint.	IMP	4M
Ans.	<p>1)The paint film should get dry rapidly.</p> <p>2)It should provide workability.</p> <p>3)It should provide resistance to failure by cracking and flaking.</p> <p>4)The paint should be cheap in initial cost.</p> <p>5)It should spread maximum surface area in minimum quantity without compromising quality.</p> <p>6)Paint colour should not change due to weathering conditions.</p> <p>7)The paint should forms hard and durable surface.</p> <p>8)It should not affect health of workers during its application.</p>		
22	State any four advantages of steel roof trusses.	IMP	4M
Ans.	<p>Advantages of steel roof trusses are:</p> <ol style="list-style-type: none"> 1. Steel trusses are economical for large spans. 2. Steel trusses are light in weight and can be fabricated in different shapes and sizes as per requirement. 3. These trusses are fire proof. 4. Free from the attack of white ants etc. 5. Durability of steel trusses is more. 6. Installation of the trusses is easy than the other or wooden trusses. 		
23	Explain king post truss and queen post truss with suitability of each.	IMP	4M
Ans.	<p>King Post Truss:</p> <ol style="list-style-type: none"> 1. When the central post known as a king forms a support for the the tie beam it is known as king post truss. 2. The inclined member is known as the struts which help to prevent the principal rafter from bending in the middle. <p>Suitability: A king post truss is suitable for roofs of span varying from 5 m to 8 m.</p> <p>Queen Post Truss:</p> <ol style="list-style-type: none"> 1. The truss which has two vertical members at central to support the principal rafter is known as queen post truss. 2. The upper ends of the queen post are kept in position by means of a horizontal 		

	<p>member known as a straining beam.</p> <p>Suitability: A queen post is suitable for roofs of spans varying from 8 m to 12 m.</p> <p>Note: If sketches are drawn, marks may be given.</p>		
24	Describe the procedure of laying the Shahabad stone floor.	IMP	4M
Ans	<p>The method of laying the Shahabad stone floor can be broadly divided in the following steps:</p> <ol style="list-style-type: none"> 1. Ground preparation 2. Laying and construction of Shahabad floor 3. Cleaning 4. Curing. <p>1. Ground Preparation : The surface of the ground for receiving the floor is leveled, well watered and rammed before laying the Shahabad stone tile.</p> <p>2. Laying and construction of Shahabad floor: Upon the prepared surface of the ground, lean cement concrete (1:4:8) is laid in the necessary slope of 1 in 120 to 1 in 240. Then cement mortar bed (CM 1:8) is laid for thickness 35 to 50 mm. Then Shahabad tiles are laid side by side on mortar bed and joints are filled with mortar.</p> <p>3. Cleaning: As Shahabad stone can not get good polish,it is avoided; only cleaning of the paste is done in the joints.</p> <p>4. Curing: After flooring is completed, the whole surface is covered with wet bags or with 5 cm of wet sand and kept wet for at least 10 days by sprinkling water at suitable intervals.</p>		
26	Discuss in detail the procedure of pointing.	IMP	4M
Ans	<p>Procedure of pointing :</p> <ol style="list-style-type: none"> 1. All the mortar joints in the masonry are raked out to a depth of 10-15 mm with the help of pointing tool. 2. Dust and loose mortar are thoroughly cleaned. 3. The joints and the surface are washed with the clean water and kept wet for sometimes. 4. Mortar is taken in small pans and the joints are filled up with small trowel by pressing it into the joints from close contact with the old mortar joints. The joints are 		

	<p>left – flush, sunk or raised depending upon the requirements.</p> <p>5. Excess mortar is scrapped away.</p> <p>6. The finished work is cured for 3-4 days in case of lime mortar and for 10 days when cement mortar is used.</p>		
26	Differentiate between white wash and distemper.	IMP	4M
Ans	White washing	Distemper	
	1. It is process of giving wash covering to the plastered or pointed surface with the slaked lime is called white washing.	1. It is process of applying dry distemper or oil bound distemper to the plastered surface.	
	2. Material required are fat lime or unslakedlime mixed with water.	2. Distemper is composed of base, carrier, binder and colouring pigments.	
	3. The finished dry surface of white washshould be smooth and even and it should not come off readily on fingers when rubbed. They are not washable.	3. This gives smooth surface and cannot be removed with washing.	
	4. White washing is economical.	4. Distemper is costly than white washing.	
	5. They do not provide pleasing appearance	5. They provide pleasing appearance.	
27	Define skirting	IMP	2M
Ans	Skirting is a full or half tiles laid vertically as finish to the wall, held in between the bottom of floor and wall.		
28	State the necessity of pointing?	IMP	2M
Ans	<p>Necessity of pointing:</p> <p>1. Joints on the face of stone or brick masonry are rouhly filled in, while the walls are being raised. These joints are considered to be weakest spots for giving access to rain water or dampness, therefore they need protection.</p> <p>2.Pointing is necessary for protecting the joints from adverse effect of atmosphere.</p> <p>3. To magnify the appearance of the surface by exhibiting the pattern of the joints, their thickness, colours, and textures prominently.</p>		

29	State two purpose of termite proofing.	IMP	4M
Ans.	<p>Purpose of termite proofing:</p> <ol style="list-style-type: none"> 1. To control or prevent the termite growth in building. The termites enter into the buildings through cracks, walls, pipes and floor joints, etc. Once termites are developed into the building area, it is very difficult and costly to remove. 2. To prevent damage of materials of organic origin with a cellulosic base, household articles like furniture, furnishings, clothing stationary, etc. 3. To prevent damage of rubber, leather, plastics, neoprene as well as lead coating used for covering of underground cables. 4. To avoid widespread damage by termites in high construction cost buildings have necessitated evolving suitable measures for preventing access of termites to buildings. 		
30	Explain the importance and necessity of water proofing.	IMP	4M
Ans.	<p>Importance and necessity of water proofing:</p> <ol style="list-style-type: none"> 1. One of the basic requirement is that the structure should remain dry as far as possible. If this condition is not satisfied it is likely that the building may become inhabitable and unsafe from structural point of view. 2. This will improve the life of building and make the hygienic conditions in the building for the users. 3. Dampness in the building gives rise to breeding of mosquitoes. 4. Dampness may cause unsightly patches. 5. Dampness may cause softening and crumbling of plaster. 6. Efflorescence may cause due to dampness. 7. Timber and fittings are deteriorated due to dampness 8. Electrical wiring and fittings may get damaged and cause short circuiting. 		
31	State the necessity of plinth protection.	IMP	2M
Ans.	<ol style="list-style-type: none"> 1. Plinth protection is required to avoid/reduce water seeping in the earth reaching the plinth wall and reaches the floor level by capillary action. 2. Plinth protection reduces direct water entering into the soil close to the plinth wall. 		

32	Distinguish between pitched roof and flat roof.		IMP	4M
Ans.	Pitched roof	Flat Roof		
	1.Sloping Roof is known as pitched roof.	1. A roof which is nearly flat is known as flat roof		
	2.Types: i) single roofs ii) double or purlin roofs iii) trussed roof iv) lean to roof	2.Types: i) Madras terrace roof ii) Bengal terrace roof iii) R.C.C. roof		
	3. Suitable at the places where there is heavy rainfall	3. Not suitable at places where there is heavy rainfall		
	4. Initial cost is less than a flat roof	4. Initial cost is high than a pitched roof.		
	5. Progress of the roof is fast as compared to flat roof.	4. Progress of the roof is slow as compared to pitched roof.		
				

Thank You

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