



MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION

(Autonomous)

(ISO/IEC-270001 – 2005 certified)

WINTER-13 EXAMINATION

Subject code: 17308 (BCO)

Model Answer

Page No: 1/19

Important Instructions to examiners:

- 1) The answer should be examined by keywords and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language error such as grammatical, spelling errors should not be given more importance. (Not applicable for subject English and communication skill).
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figure drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In the some cases, the assumed constants values may vary and there may be some difference in the candidates answer and model answer.
- 6) In case of some questions credit may be given by judgment on part of examiner of relevant answer based on candidates understanding.

Q. 1 a) Attempt any six of the following.	12
i)What is purpose of foundation ?	
Purpose of foundation – i)To distribute the total load coming on the structure over a large bearing area. ii)To secure a level or firms natural bed for courses of masonry. iii)to increase the stability of the structure on as a whole , so as to prevent it from overturning. iv)To load the bearing surface or area at a uniform rate. *(Any two point 01 mark each)	*
ii)Define header and stretcher.	
Header:- A brick or stone which lies with its greatest length at right angles to the face at the work is known as header.	01

Stretcher :- A brick or stone which lies with its longest side parallel to the face of the work is known as stretcher	01
iii) Give four component of door frame.	
Following are the four component of door frame- 1) Post 2) Head 3) Horn 4) Hold fast 5) Sill. <i>*(Any four 1/2 mark each)</i>	*
iv) Define winders and kite steps.	
Winders- The steps which are narrow on one side than the other side are known as winders. They are used to change the directions of the stairs without landing.	01
Kite Step- A series of winders from a circular or spiral stair way, when 3 steps are used to turn a 90° corner, the middle step is called a kite step or kite winder or a kite shaped quadrilateral.	01
v) List any four forms of stairs.	
Forms of stairs :- 1) Straight 2) Quarter turn 3) Half turn 4) Open well 5) Doglegged 6) Spiral 7) Bifurcated 8) Circular. <i>*(Any four 1/2 mark each)</i>	*
vi) Give two precautions taken while plastering.	
Precaution to be taken while plastering are- 1) Roughening of solid background before plastering 2) All joint in the masonry should be raked 3) The holes and hollows should be properly be filled up in advance before plastering. <i>*(Any two 01 mark each)</i>	*
vii) Define the terms : a) Guniting- b) Grouting	
a) Guniting (or shot concrete)- The technique of forming and imperious layer of rich cement mortar (1:3) for waterproofing over the exposed concrete surface or over the pipes, cisterns etc. for resisting the water pressure is known as guniting.	01
b) Grouting- The technique or process of forcing the cement grout (ie mixture of cement, sand and water) under pressure into the cracks, voids or fissures present in structured components or the ground is known as Grouting-	01
viii) Define pre tensioning and post-tensioning.	
Pre tensioning :- The method of tensioning the cables in the concrete before its casting is known as pre tensioning.	01
Post tensioning- The method of tensioning the cables in the concrete after its casting is known as ;post tensioning.	01

b) Attempt any two of the following :	08
i) What is meant by foundation and superstructure of the building ?	
<p>Foundation :-</p> <ol style="list-style-type: none"> 1) Foundation is that part of the structure which is in direct contact with the ground. 2) It transfers the load of the structure to the soil below so as to avoid overloading of the soil beneath. 3) It prevents differential settlement by evenly loading the substrata. 4) It provides a level surface for building operations. <p>Super structure :-</p> <p>The portion of the building constructed above the ground (ie plinth level or ground floor level) is termed as super structure. The components of Super structure are walls, doors and windows and ventilators, columns, beams, lintels, slab, building finishes, stairs etc.</p>	02 02
ii) Explain two methods to check the right angle corners of the given line out.	
<p>Checking out of right angle corners of the given layout.</p> <p>Right angle is set up by forming triangles with sides 3, 4 and 5 units long. If we fix the two sides of the right angle triangle to be 3 m and 4 m then the 3rd side i.e. the hypotenuse should be taken as 5 m. This method is not reliable for important works.</p> <p>In the next method, right angle corners can be checked by checking the diagonals. If both the diagonals have the same length, the layout can be considered as correct.</p> <p>Right angle corners of the given layout can be checked by using theodolite.</p>	02 02
iii) Explain 'timbering and strutting' with a neat sketch.	
<p>Timbering of excavation is necessary in case of foundation shallow as well as deep where soil has less stability of slopes. Stability of soil slopes depends upon the type of soil. Therefore, timbering is provided in case of shallow and deep excavations. In case of timbering, various members like sheeting, bracing, strut and wide sheeting are main planks which remain in contact with the sides of the trenches.</p> <p>All deep excavations need strutting as sheeting can not stand without support. The piece of timber which maintains a fixed distance between the sheeting or between the wales is known as strut.</p>	01 02
<div style="text-align: center;"> <p>Timbering of deep trench in loose soil</p> </div>	01

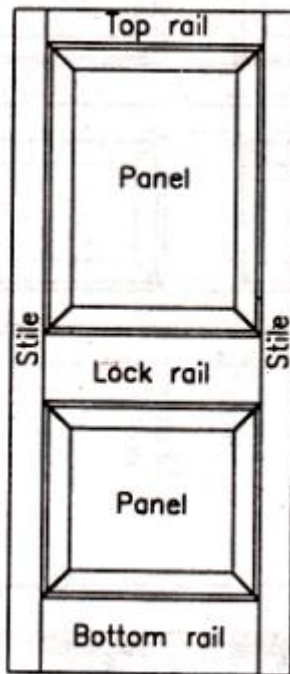
Q.2 Attempt any FOUR of the following :	16
a) List four components of superstructure of building and give functions of each.	
<p>Components of superstructure of building :-</p> <p>i) Walls –To enclose or divide the floor space in desired pattern.</p> <p>ii)Columns –To increase the stiffness of the wall to carry additional load or to carry vertical Concentrated load.</p> <p>iii) Floors-To divide a building into different levels. To Provide a firm and dry platform for people and other item like furniture, stores, equipment etc.</p> <p>iv) Doors, window and ventilators - To provide usual means of access to a building, room, and passage. To provide day light, vision and ventilation. To provide passage for hot air circulation from room in to atmosphere and cold air into the room.</p> <p>v) Stairs – To provide easy vertical communication between the floors.</p> <p>vi) Roofs –To cover the space below and protect it from rains, snow, sun, wind etc.</p> <p>vii) Building finishes- To protect the surface from advance effect of weather but also provide decorative effect.</p> <p style="text-align: center;"><i>*(Any four 01 mark each)</i></p>	*
b) Write general rules for earthquake resistant building.	
<p>Following rules which are generally consider while constructing the structure in earthquake-</p> <p>i) The should be continuity in the construction .So that total structure act as a single unit.</p> <p>ii) To avoid collision during an earthquake .It is advisable to keep some space between the adjacent structure the recommended gap width vary form is 15 mm to 30 per storey.</p> <p>iii)To avoid construction on loose soil.</p> <p>iv)The unnecessary projection such as balconies ,canopies etc should be avoided.</p> <p>v)Symmetrically designed structure should be performed .</p> <p>vi)The light weight structure are preferred to resist the seismic forces.</p> <p style="text-align: center;"><i>*(Any four 01 mark each)</i></p>	*
c) Explain excavation and foundation.	

<p>Excavation for foundation-</p> <p>i)The foundation is very important component of any structure and the foundation for most of the structure is built up below ground level .Hence foundation cannot be built up unless the soil or rock above the base level of the foundation is excavated.</p> <p>ii) Trenches are dug for the foundation of walls and pits are dug for the foundation of column.</p> <p>iii)To uphold the sides of excavation .temporary timbering support are provided type of timbering support and its erection for trenches or pits depends upon the type and character of soil or rock ,the depth and width of excavation the time of retention of excavation the climatic and weather condition etc.</p> <p>iv) There are two types of excavation depends up the nature of soil.</p> <p style="padding-left: 40px;">a) Shallow excavation – The depths of excavation is less than 1.5 m.</p> <p style="padding-left: 40px;">b)Deep excavation- The depths of excavation is more than 1.5 m</p>	<p>01</p> <p>01</p> <p>01</p> <p>01</p>
<p>d)Classify foundation into different types.</p>	
<p>Foundation are broadly into different types-</p> <p>A)Shallow foundation-</p> <p>B)Deep foundation –</p> <p>A)Shallow foundation- Types-</p> <p>i)Spread footing</p> <p style="padding-left: 40px;">a)Wall footing b)R.C. footing c)Inverted arch footing d)Column footing</p> <p>ii)Grillage foundation-</p> <p>iii)Eccentrically loaded footing</p> <p>iv)Combined footing</p> <p>v)Mat or raft footing</p> <p>B)Deep foundation –</p> <p style="padding-left: 40px;">i)Pile foundation</p> <p style="padding-left: 40px;">ii)Coffer dams</p> <p style="padding-left: 40px;">iii)Caissons</p>	<p>01</p> <p>02</p> <p>01</p>
<p>e)State various precautions to be take , while constructing foundation in black cotton soil</p>	

<p>i) To limit the loads on the soil to 5.5 tones /m². If water is liable to find an access to the foundation, the limit of loading should be restricted to 4900 kg/ m² .</p> <p>ii) To take the foundation to such depth where the cracks cease to extend. The minimum depth of foundation should be at least 1.5 m.</p> <p>iii) To provide reinforced concrete ties or bands all-round the main walls of the building-</p> <p>iv) If the depth of black cotton soil at a given site is only 1 to 1.5 m the entire black cotton soil above the hard bed may be completely removed and the foundation laid on the hard bed below.</p> <p>v) To break the direct contact between black cotton soil and masonry.</p> <p>vi) Construction in black cotton soil should undertaken during dry season.</p> <p>vii) The masonry for the walls should start at least 15 cm below the general ground level.</p> <p>viii) In important structure raft foundation should be provided so as to float the building.</p> <p style="text-align: center;"><i>*(Any four 01 mark each)</i></p>	*
<p>f) Draw a neat sketch of stone masonry and show the following components.</p> <p style="text-align: center;">i) Facing b) Backing iii) Bond stone iv) Hearting . .</p> <p>i) Facing – The material used in the face of the wall is known as facing.</p> <p>ii) Backing- The material used in ** the back at the wall known as backing .</p> <p>iii) Bond stone- () – A stone passing the a wall from front to back face and acting as a binder for two face and acting as a binder for two *** at eh wall *** is stone.</p> <p>iv) Hearting- The portion of a wall between trainy and back is known as hearting .</p>	

<p style="text-align: center;">Facing, Backing, Bond Stone & Heating * (Fig. 02 mark and labeling 02 marks)</p>	*
<p>Q.3 Attempt any FOUR of the following</p>	16
<p>a) State any eight points you will observe in the construction of brick masonry work.</p>	
<p>Following points are to be observed in the construction of brick masonry work-</p> <ol style="list-style-type: none"> 1)The bricks to be used should confirmed the requirements of specification of the work. 2)The bricks should be saturated before its use with water so as to prevent absorption of moisture from the mortar. 3)The bricks should be properly led on their beds with the frog upper most . 4)The brick work should be carried out in proper bond . 5)The brick bats should not be used except as the closers and brick of sides less than half brick should be rejected. 6)Single scaffolding should be adopted to carry out brick work at higher level. 7)Brick work should be carried out as per line and level. Plumbed should be used to check the vertical face and wooden templates for the inclined faces . 8)After construction brick work should be well water for period of about 2 to 3 weeks. 9)All the joints should be properly flushed and filled with mortar so that no cavity is left 	*

<p>in between.</p> <p>10)The face joins are generally raked to a minimum depth of 10 to 15 mm when mortar is still green.</p> <p>11)Half brick partition walls should be reinforced with suitable reinforcement .</p> <p>12)When it is desire to increase the length of wall under construction at a future date the wall is stopped with a toothed end.</p> <p>13)As for as possible the brick wall should be raised uniformly with proper bond . The height brick masonry construction in a day should be less than 1.5 m.</p> <p style="text-align: center;">*(Any 08 point ½ mark each)</p>	
<p>b) Describe with the help of neat sketch, components of two panel single shutter door.</p>	
<p>Paneled door are framed and following are the comports of two panel single shuttle door. The thickness of panel is about 20 mm. The panels are secured in position by grew made inside the framework and incase of single shuttle door the number of panels are two</p> <p>1)Top rail- Horizontal member , One in number ,location – at the top</p> <p>2)Lock rail - Horizontal member , One in number ,location – at the middle , used to provide locking arrangement.</p> <p>3)Bottom rail-- Horizontal member , One in number ,location – at the bottom .</p> <p>4)Style – Vertical member , Two in number ,location – at the end of the panel.</p> <p>5)Panels- Two in number location one in between lock rail and top rail .Other in between lock rail and bottom rail</p>	*



TWO PANEL SINGLE SHUTTER DOOR

**(Sketch 02 mark and Description 02 mark)*

c) State advantages of aluminum sliding window and louvered window.

Advantages of aluminum sliding window –

- i) These windows are decent in appearance when properly finished.
- ii) Windows requires very less maintenance .
- iii) Aluminum windows dose not required painting.
- iv) These windows are being made of thinner sections, admit more light and ventilation for given areas as compare to wooden types .

***(Any 02 point 01 mark each)**

Advantages of louvered window-

- i) These windows allows free passage of air when closed.
- ii) They provides ventilations and simultaneously privacy.
- iii) These windows provides sufficient light even when closed.
- iv) Louvered window provides protections against excessive day light and glare inside the buildings without affecting ventilation.

***(Any 02 point 01 mark each)**

d) State requirement of good-staircase with respect to the following point.

- i) Location ii) Length of flight iii) Head room iv) Pitch of stair-

i)Location--A stair should be located in building in a position where there is both light and ventilation and also to provide easy access to the occupant to the building.

01

ii)Length of flight-A flight should be not contain more than 12 steps and less than 3 steps to give comfort and safety .

01

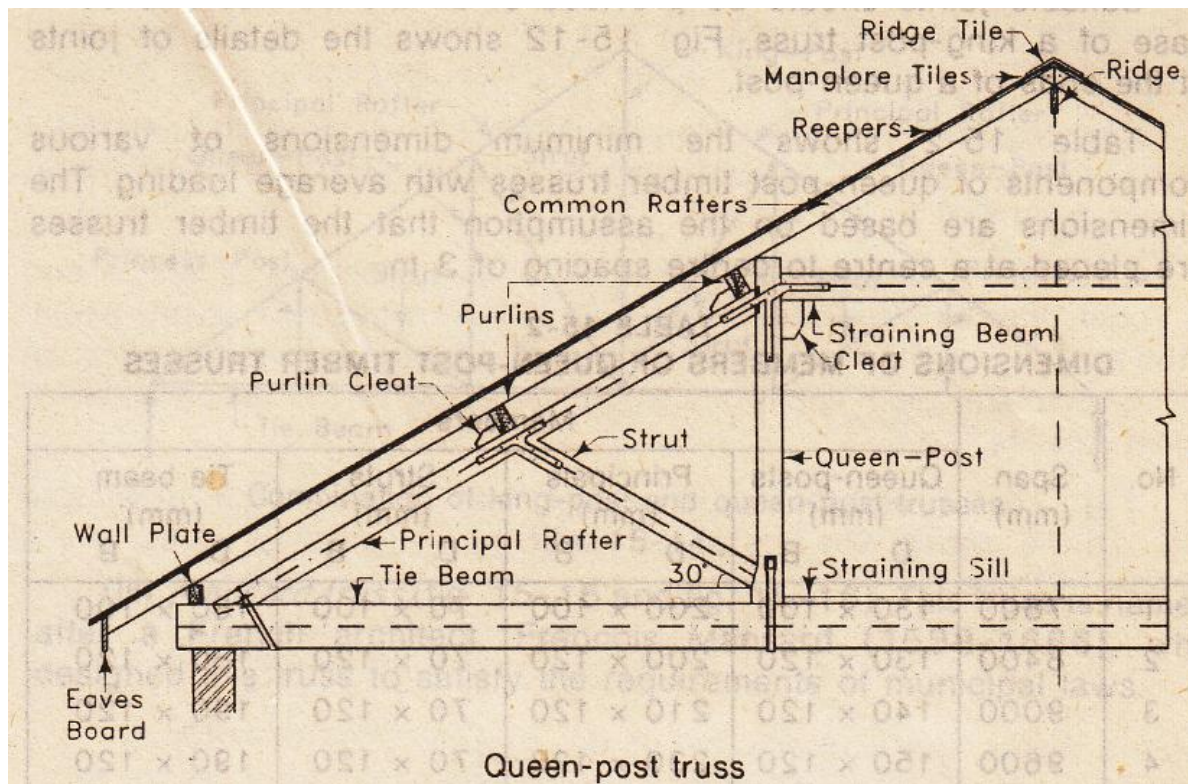
iii)Head room-The head room or Clarence the between the tread and the soffit of the flight immediately about it should not be less than 2.14 m..

01

iv)Pitch of stair-The pitch of long stair should be made flatter by introducing landing to make the accent tired some and less dangerous. In general the slop if stair should never exceed 40° and should not be flatter than 25° .

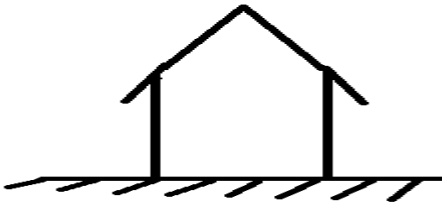
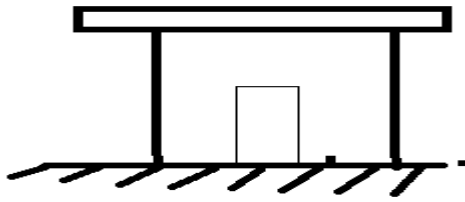
01

e) Draw a queen post roof and label the components.



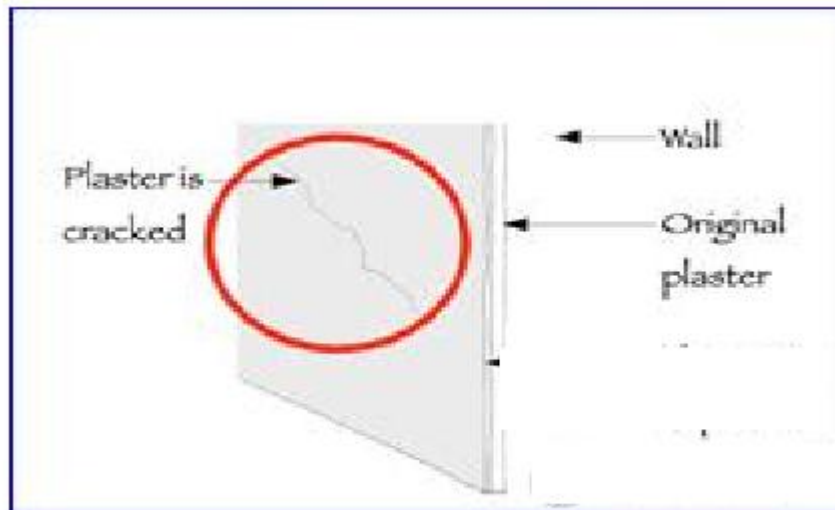
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*(Sketch 02 mark labeling any four components 1/2 mark each)

f) Compare pitch roof and flat slab.			
Sr	Pitch roof	Flat slab	
1	A sloping roof is known as pitched roof.	A roof which is nearly flat is known as flat roof.	*
2	It is suitable at the place at the place where there is heavy rainfall.	Flat roof is not suitable at the places where there is heavy rainfall.	
3	Initial cost is less than flat roof.	Initial cost is higher than pitched roof.	
4	Types-a)Single roofs b) Double or purline roofs. c) Trussed roof.	Types-a)Madras ferrace roof. b)Bengal ferrace roof.	
5	Work is progress fastly.	Work is progress slowly.	
6			
<i>*(Any 04 points 01 marks each)</i>			
Q.4 Attempt any FOUR of the following :			16
a) Describe the procedure of laying Shahabad stone floor.			
<p>The shahabad for flooring may be square or rectangular. The subgrade is prepared by laying a 10 to 15 cm thick layer of lime concrete over a bed of well compacted earth. on this subgrade well wetted shahabad stones are laid on 20 to 25 mm thick layer of bed mortar.</p> <p>When the stone slabs are properly set, mortar in the joints is raked out to a depth of about 20 mm and flush pointed with cement mortar (1:3). A slope of 1 to 40 is necessary to be given in shahabad stone flooring for proper drainage</p>			02 02
b) Explain any two defects in plastering with its neat sketch.			

- Defects in plaster work :-
- 1) Cracking:- This contain in formation of cracks in plaster work.
 - 2) Blowing or blistering of plaster:- This consists in formation of small patches of plaster swelling out beyond the plastered surface and are chiefly due to faulty slacking lime particles in the plaster.
 - 3) Crazing:- A series of hair cracks on plastered surface are formed due to improper proportions of ingredients.
 - 4) Popping:- Conical holes are formed in the plastered surface due to some particles which expand on setting.
 - 5) Uneven surface:- This defect caused by poor workmanship.
 - 6) Flaking:- It is defect in which very loose mass of plastered surface is formed due to poor adhesion between successive coats.

*



Cracks in plaster



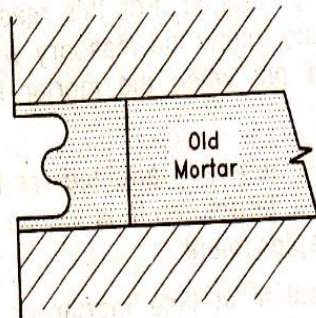
Crazing in plaster

**(1 mark for explanation and 1 mark for sketch - any 2 max. 4 marks)*

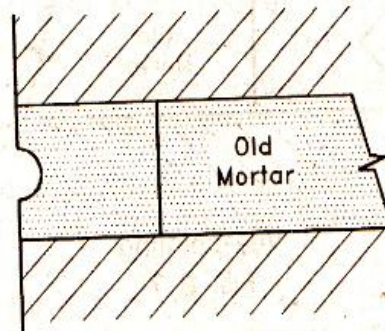
c) Enumerate four types of pointing with neat sketch.

Types of pointing

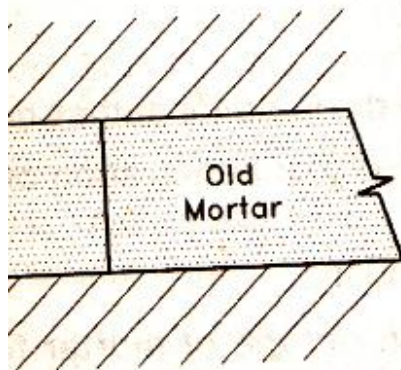
- 1) Beaded pointing
- 2) Rubbed pointing
- 3) Struck pointing
- 4) Tuck pointing
- 5) Vee pointing
- 6) Weathered pointing



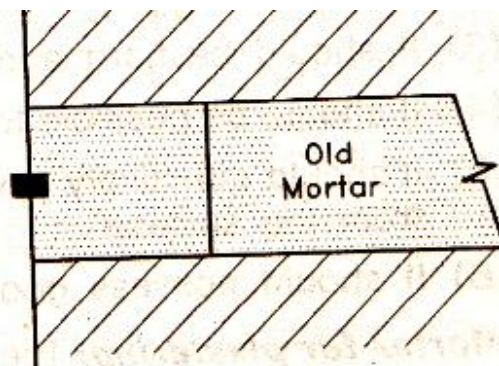
Beaded pointing



Rubbed pointing



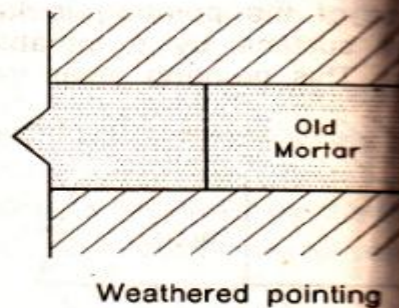
Struck pointing



Tuck pointing



Vee-pointing



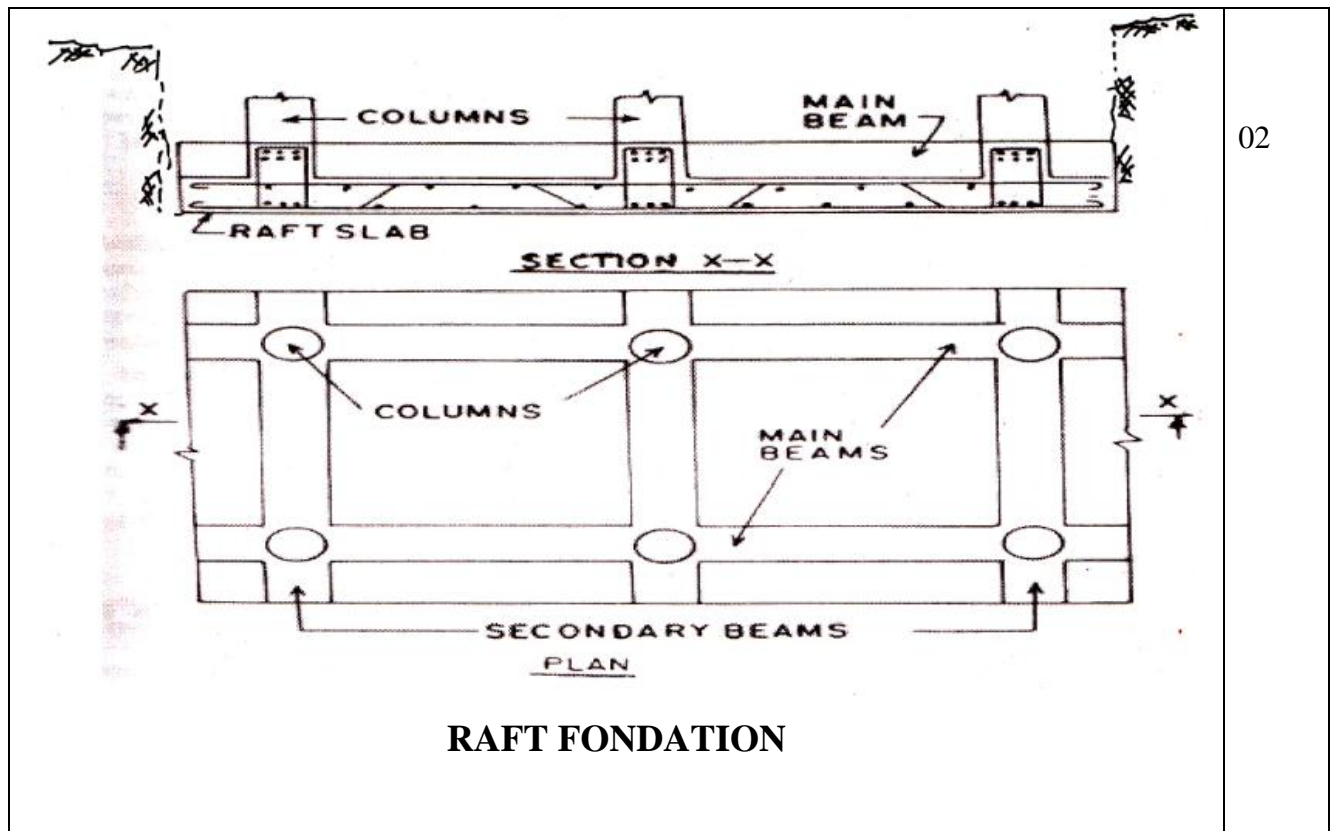
Weathered pointing

*(Any four figures 01 mark each)

d) Explain in brief : i) Neeru finishing ii) White washing

<p>i) Neeru finishing:- It is the finishing coat. This coats is applied after 5 days after first or second coat is applied. This coat consisting of flat lime called neeru and fine white sand in the ratio of 1:2 is laid in thickness of 3 mm with straight plane edge. The surface is well rubbed with wooden float and then finally finished with trowel or steel float to obtain the desired surface. A soapstone or polishing stone is very often used to obtain a fine polished surface. Sometimes a small quantity of mica powder is added to the mixture of the final coat.</p> <p>ii) White washing:- Lime is used for white washing. Due to white washing, the surface of wall becomes white and look beautiful. White washing is cheap and hence widely used. White washing is made from pure fat lime which may be slaked at site. Slaking is carried out in a tub until the mixture has a creamy consistency. This is allowed to rest for about 24 to 48 hours. This mixture is strained through crease cloth. the white wash is applied with a brush to the specified number of coats.</p>	02 02
<p>e)Describe any two causes of formation of cracks in walls and measure adopted to prevent them.</p>	
<p>causes of cracks in walls and remedial measures :-</p> <ol style="list-style-type: none"> 1) Unsoundness of cement:- Use proper grade of cement 2) Continuous vertical joints in masonry:- Staggered vertical joints in masonry. 3) Weak lintels:- Provide strong lintel. 4) Uneven settlement of foundation :- Provide strong foundation 5) Use of low quality material :- Use of good quality material 6) Insufficient curing:- Sufficient curing. 7) Faulty design:- provide proper design. <p><i>*(01 mark for cause and 1 mark for remedial measure - any 02 point max. 04 marks</i></p>	*
<p>f)Explain in details necessity of plinth protection.</p>	
<p>Necessity of plinth protection:-The plinth is the lowermost visible part of the building above the ground level. As such, it is the most vulnerable part for settlement. Also plinth is susceptible to attack the termites, ants rats and other burrowing animals. It is also susceptible to seepage of moisture. Thus, it is necessary to protect the plinth from these disruptive forces</p>	04
<p>Q.5 Attempt any FOUR of the following :</p>	16
<p>a) Suggest remedial measures to avoid settlement.</p>	
<p>Remedial measure to avoid settlement:-</p> <ol style="list-style-type: none"> 1)To prevent the settlement of structure ,soil strata should be hard so as to without the load a structure. 2)For design purpose ,however a lower value of bearing capacity is ultimate load to keep the settlement within permissible limit. 3)The value of factor of safety increases as the uncertainty about the loading ,ground structure and position of water table is high . 4)The entire load of the structure is transmitted to the underlying soil by the substructure . 5)It is important to know the maximum load carrying capacity of the underlying soil. 6)The structure will be safe if the underlying soil carries the load safely. <p><i>*(Any four 01 mark each)</i></p>	*

b) State four precautions taken during pre-stressing of structural member.	
<p>1) It is well inspected that whether the beam mould or either site is properly fixed to steel beam section or steel joint which used as abutment .</p> <p>2) Check weather steel anchor plate and abutment with nut and washer is property fixed or not.</p> <p>3) Check whether anchor is secured or not before stressing commences.</p> <p>4) In case of pre-tensioning the wires are cut or released and bond between the stressed wire and concrete should and concrete should prevent the tenders from regaining thir original length thus including the priestess .</p> <p>5) The anchors are placed end to end with a space between each stop end and the wire stretched between two steel joints act abutments which firmly fixes to the floor bed.</p> <p>6) Joints in the ducting should be well deped so as to prevent penetration of the grout during subsequent filling of the void.</p> <p>7) On the completion the pre stressing the jack is removed and the duct grouted as a precaution against of the tendon.</p> <p style="text-align: center;"><i>*(Any four 01 mark each)</i></p>	
c) Draw a neat sketch and explain raft foundation.	
<p>Raft Foundation-</p> <p>In made up ground soft clay or marchy site having low value of bearing capacity heavy concentrated structural loads are generally supported by proving raft foundation .Raft foundation consist of thick reinforced concrete alb covering the entire area on the bottom of the structure like a floor .The slab is reinforced with bars running at right angles to each other both near bottom and top faced of the slab .Some time it is necessary to carry the excessive column load by an arrangement by inverted main beams and secondary beams, cast monolithically with raft slab</p>	02



02

d) What is roller compacted concrete?

This type of concrete are defined as a dry concrete material which has been consolidated by external vibration using vibratory rollers. It differs from normal concrete basically in its consistency. The roller compacted should be dry enough to support the load of vibratory roller and the same time it should be the wet enough to permit proper consolidated by vibration. This type of concrete is used with advantage in mass concrete work. It can be lead in thin layers of about 25 cm depth in continuous operations. This results in substantial reduction in the heat of hydration and hence the need to perform the special concrete cooling operations in mass concrete work can be avoided. The use of roller compacted concrete permits faster construction and saving labor cost.

02

02

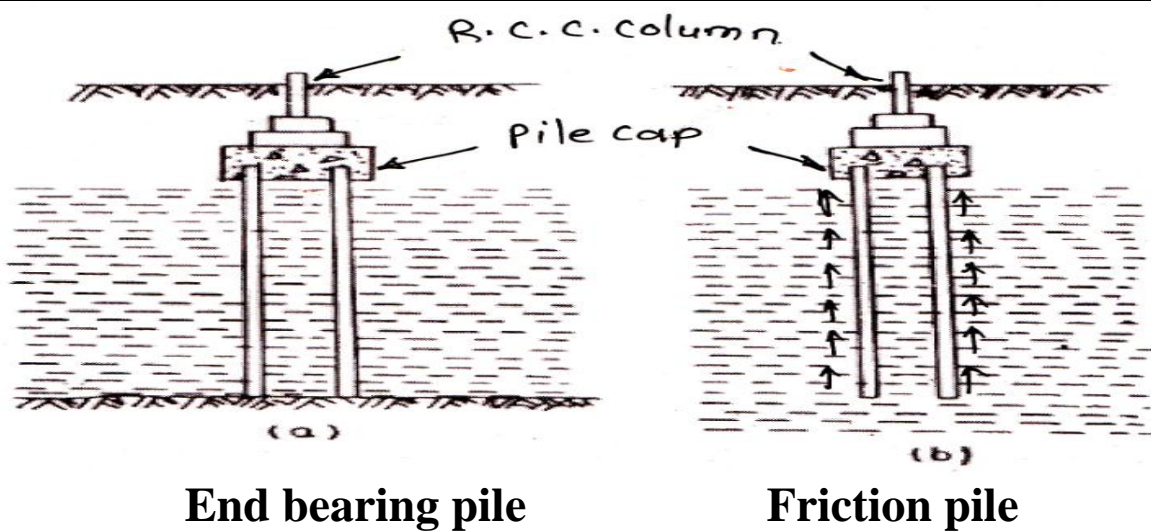
e)What is steel fiber reinforced concrete ?

Steel fiber reinforced concrete –

This type of concrete is formed by adding steel fibers in the ingredients of concretes. Steel fibers are normally produced by cutting 10 to 16 mm length of low carbon steel wires 0.25 mm to 0.75 mm in diameter. Steel fibers have tendency to cluster together which creates the difficulty in ensuring their uniform random distribution in the concrete .This difficulties is overcome by using fiber bundles. The steel fibers in the fibers bundles separate out during

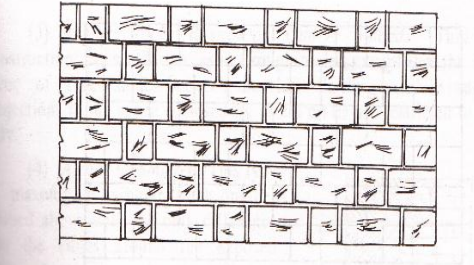
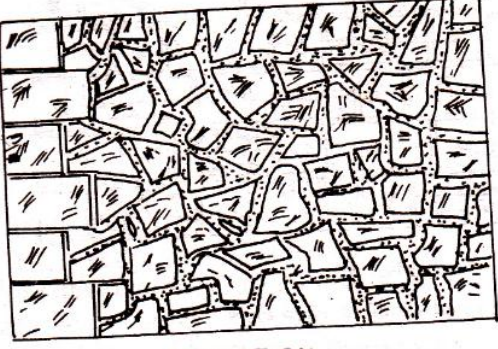
02

the process of mixing concrete and get distributed in the random fashion in the concrete mix. By addition 2 to 3 Perc. Of fiber it is possible to achieve 2 to 3 times increase in the flexural strength of concrete and substantial increase in explosion resistance ,crack resistance and other properties of concrete.	02
f) Give the situation, where vacuum dewatering concreting is suitable in construction.	
Following are the where vacuum dewatering concreting is suitable in construction- 1)For making industrial floors . 2)Used in parking decks. 3)Used in bridges . 4)Used in footpath. 5)Places where surface in contact with impact loading . 6) In road constructions. <i>*(Any four 01 mark each)</i>	*
Q.6 Attempt any TWO of the following :	16
a)Explain with a neat sketch- i)Friction piles ii)End bearing piles	
i)Friction piles- When piles are required to be driven at a site where the soil is weak or soft to a considerable depth , the load carried by the a pile is borne by the friction developed between the sides of the pile and surrounding ground in such cases the pile is named as friction pile.	02
ii)End bearing piles- Bearing pile are those which are driven in the ground until a hard stratum is reached such pile act as pillars supporting a super structure and transmitting to the load down to the load at which it can be safely born by the ground.	02
	04



b) Differentiate with the help of sketch between coursed and uncoursed rubble masonry.

Mention its suitability.

Sr	Coursed rubble masonry	Un coursed rubble masonry	
i)			04
ii)	Courses are defined.	Courses are not defined.	01
iii)	It shows pleasant appearance.	It shows rough appearance.	01
iv)	This type of masonry is suitable for compound walls ,boundary walls, plinth walls, retaining walls etc.	It is used in building construction work where the wall height is low like residential, public buildings, piers and abutment of small bridges etc.	02

c) Explain various equipment and accessories required for pre stressing.	
<p>Equipment and accessories required for pre stressing:-</p> <p>i) Tensioning apparatus – Pre stressing steel may be tensioned by means of leavers, screw jack ,hydraulic jack or similar mechanical apparatus .The type of tensioning apparatus shall be such that a controlled force can be applied .</p> <p>ii) Temporary griping device: Wedges, yokes, double cones are the gripping device signally or in group.</p> <p>iii) Releasing Devices: It should be such that during the period between the tensioning and release the tension in the prestressing element if fully maintained by position means as external anchorage.</p> <p>iv) Anchorage : The anchorage may consist of any device which will provide following clauses:</p> <p>a) It should be strong enough to resist a breaking strength of tendors.</p> <p>b) Holding capacity should be more.</p> <p>c) It should be safe against dynamic, static and impact loads.</p> <p>Various accessories required for pre stressing:- 1) Steel tenders 2)Anchor 3)Steel anchor plate4)Support Piers 5)Dividing plates or spacers 6) Nut bolts.</p>	<p>04</p> <p>04</p>