

## Bricks

- Q.1 Crushing strength of a first class brick should not be less than  
 (a) 3.5 N/mm<sup>2</sup> (b) 7.0 N/mm<sup>2</sup>  
 (c) 10.5 N/mm<sup>2</sup> (d) 14.0 N/mm<sup>2</sup>

- Q.2 The percentage of alumina in a good brick earth lies between  
 (a) 5 to 10% (b) 20 to 30%  
 (c) 50 to 60% (d) 70 to 80%

- Q.3 The nominal size of the modular brick is  
 (a) 190 mm × 90 mm × 80 mm  
 (b) 190 mm × 190 mm × 90 mm  
 (c) 200 mm × 100 mm × 100 mm  
 (d) 200 mm × 200 mm × 100 mm

- Q.4 Percentage of silica in a good brick earth lies between  
 (a) 5 to 10% (b) 20 to 30%  
 (c) 50 to 60% (d) 70 to 80%

- Q.5 Which of the following ingredient of the brick earth enables the brick to retain its shape?  
 (a) Alumina (b) Silica  
 (c) Iron (d) Magnesia

- Q.6 Consider the following statements:  
 A good soil for making bricks should contain  
 1. about 30% alumina  
 2. about 10% lime nodules  
 3. small quantity of iron oxide  
 4. about 15% magnesia  
 Which of these statements are correct?  
 (a) 1 and 2 (b) 1 and 3  
 (c) 1, 3 and 4 (d) 2, 3 and 4

- Q.7 For good bonding in brick masonry  
 (a) all bricks need not be uniform in size  
 (b) bats must be used in alternate courses only  
 (c) the vertical joints in alternate courses should fall in plumb  
 (d) cement mortar used must have surkhi as additive

- Q.8 Match List-I with List-II and select the correct answer by using the codes given below the list:

## List-I

- A. Silica  
 B. Alumina  
 C. Lime  
 D. Oxide of iron

## List-II

1. Provides red colour  
 2. Provides bondage to clay particles  
 3. Provides hardness  
 4. Prevents shrinkage

## Codes:

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 4 | 3 | 2 | 1 |
| (b) | 1 | 3 | 4 | 2 |
| (c) | 2 | 3 | 1 | 4 |
| (d) | 4 | 1 | 2 | 3 |

- Q.9 Match List-I with List-II and select the correct answer by using the codes given below the list:

## List-I

- A. Bull-nosed brick  
 B. Plinth bricks  
 C. Coping bricks  
 D. Voussoirs

## List-II

1. For arches over doors and windows  
 2. On top of parapet wall  
 3. For use in plinths  
 4. For rounding off sharp corners

## Codes:

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 4 | 3 | 2 | 1 |
| (b) | 1 | 2 | 3 | 4 |
| (c) | 4 | 2 | 1 | 3 |
| (d) | 1 | 3 | 4 | 2 |

- Q.10 Match List-I with List-II and select the correct answer by using the codes given below the list:

## List-I

- A. Earthenware  
 B. Stoneware  
 C. Terracotta  
 D. Faience

## List-II

1. Burnt at high temperature  
 2. Burnt at low temperature  
 3. Means baked earth  
 4. Means glazed terra-cotta

## Codes:

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 2 | 1 | 3 | 4 |
| (b) | 1 | 3 | 4 | 2 |
| (c) | 2 | 1 | 3 | 4 |
| (d) | 1 | 2 | 3 | 4 |

- Q.11 Match List-I with List-II and select the correct answer by using the codes given below the list:

## List-I

- A. Silica  
 B. Alumina  
 C. Lime  
 D. Magnesia  
 E. Iron oxide

## List-II

1. In the presence of silica and alumina, accelerates fusion.  
 2. Reduces shrinkage of bricks and acts as a flux.  
 3. A tenacious finely grained mineral compounds.  
 4. In the presence of iron, it gives yellowish tint.  
 5. Fuses in the presence of alumina at low temperature.

## Codes:

- |     | A | B | C | D | E |
|-----|---|---|---|---|---|
| (a) | 4 | 2 | 3 | 5 | 1 |
| (b) | 1 | 4 | 3 | 2 | 5 |
| (c) | 3 | 2 | 4 | 1 | 5 |
| (d) | 5 | 3 | 2 | 4 | 1 |
| (e) | 1 | 4 | 3 | 5 | 2 |

- Q.12 Match List-I with List-II and select the correct answer by using the codes given below the list:

## List-I

- A. Excess lime  
 B. Iron pyrites  
 C. Pebbles or stones  
 D. Salt

## List-II

1. Causes deformation of bricks  
 2. Weak and porous bricks are obtained  
 3. Causes efflorescence  
 4. Crystallize and split the brick

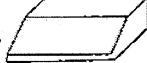
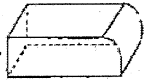
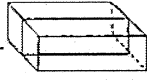
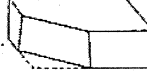
## Codes:

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 1 | 4 | 2 | 3 |
| (b) | 1 | 2 | 3 | 4 |
| (c) | 4 | 3 | 2 | 1 |
| (d) | 1 | 3 | 2 | 4 |

- Q.13 Match List-I with List-II and select the correct answer by using the codes given below the list:

## List-I

## List-II

- |  |                     |
|--|---------------------|
| A.    | 1. King closer      |
| B.    | 2. Plinth brick     |
| C.   | 3. Bull-nosed brick |
| D.  | 4. Queen brick      |

## Codes:

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 2 | 3 | 4 | 1 |
| (b) | 1 | 2 | 3 | 4 |
| (c) | 4 | 1 | 2 | 3 |
| (d) | 1 | 4 | 3 | 2 |

Q.14 Consider the following statements:

For the manufacture of good quality bricks, it is essential to

1. use a reverberatory kiln.
2. blend the soil with clay or sand as deemed appropriate.
3. knead the soil in a ghani.
4. temper the soil in a pug mill.

Which of these statements are correct

- (a) 1 and 3 (b) 2 and 4  
(c) 1, 3 and 4 (d) 2, 3 and 4

Q.15 Consider the following stages in the manufacturing of bricks:

1. Weathering
2. Moulding
3. Tempering

The correct sequence of these stages in the manufacturing of the bricks, is

- (a) 1, 2, 3 (b) 2, 3, 1  
(c) 1, 3, 2 (d) 3, 2, 1

Q.16 The frog of brick is normally made on its

- (a) top face (b) bottom face  
(c) longer face (d) shorter side

Q.17 The position of brick cut to form angles other than right angles in plan, is known as

- (a) queen closer (b) king closer  
(c) closer (d) squint closer

Q.18 For good bonding in bricks

- (a) all bricks need not be uniform in size.  
(b) bats must be used in alternate course only.  
(c) the vertical joints in alternate course should fall in plumb.  
(d) cement mortar used must have surkhi as additive.

Q.19 A relatively high water absorption of a common burnt clay brick indicates

- (a) high bond strength with mortar.  
(b) high shrinkage of brick.  
(c) low strength of brick  
(d) need for more mortar for bedding.

Q.20 For brick work in foundations, where water table is high, preferred cement mortar proportion is

- (a) 1 : 3 (b) 1 : 5  
(c) 1 : 6 (d) 1 : 8

Q.21 For one cubic metre of brick masonry, the number of modular bricks needed is

- (a) 400 or less (b) 400 to 450  
(c) 500 to 550 (d) 600 to 650

Q.22 In brick masonry,

- (a) mortar strength should match brick strength.  
(b) mortar strength should exceed brick strength.  
(c) brick strength should exceed mortar strength.  
(d) the strengths of masonry and brick are independent.

Q.23 The weight of a standard brick should be

- (a) 1000 g (b) 1500 g  
(c) 2500 g (d) 3000 g

Q.24 Frog is provided in

- (i) 9 cm high bricks only.  
(ii) 4 cm high bricks only.  
(iii) 4 cm high bricks only.  
(iv) extruded bricks only.

Of the above

- (a) only (i) is correct  
(b) only (ii) is correct  
(c) (i) and (iii) are correct  
(d) (i), (ii) & (iii) are correct

Q.25 For hidden masonry works, the bricks used should be

- (a) 1<sup>st</sup> class (b) 2<sup>nd</sup> class  
(c) 3<sup>rd</sup> class (d) any of the above

Q.26 For centring of RCC structures, the bricks used should be

- (a) 1<sup>st</sup> class (b) 2<sup>nd</sup> class  
(c) 3<sup>rd</sup> class (d) 4<sup>th</sup> class

Q.27 Which of the following constituent in earth gives plasticity to mould bricks in suitable shape?

- (a) Silica (b) Lime  
(c) Alumina (d) Magnesia

Q.28 The IS classification of bricks is based on

- (i) Compressive strength  
(ii) Water absorption  
(iii) Dimensional tolerance of the above, correct of the above, the correct statement/s is/are :  
(a) (i) only (b) (i) and (ii)  
(c) (i) and (iii) (d) (i), (ii) and (iii)

Q.29 The raw bricks shrink during drying and warp during burning because of

- (a) less lime in brick earth.  
(b) less silica and excess magnesia in brick earth.  
(c) excess of alumina and silica in brick earth.  
(d) alkalies in brick earth.

Q.30 The moulded bricks are dried before burning to an approximate moisture content of

- (a) 3% (b) 6%  
(c) 10% (d) 20%

Q.31 In the process of brick manufacturing, the pug mill is used in which of the following operation?

- (a) Weathering (b) Blending  
(c) Tempering (d) Burning

Q.32 Excess of silica makes brick,

- (a) brittle on burning.  
(b) to melt on burning.  
(c) to crack on drying.  
(d) to warp.

Q.33 Which of the following is harmful in the clay used for making bricks?

- (a) Iron oxide (b) Iron pyrite  
(c) Alkali (d) Magnesia

Q.34 When carbonaceous materials in the form of bituminous matter of carbon are present in the clay, the bricks will

- (a) be spongy (b) have black core  
(c) be porous (d) have cracks

Q.35 Consider the following operations for preparation of brick earth:

1. Digging
2. Weathering
3. Tempering
4. Blending
5. Unsoiling

The correct sequence of these operations are

- (a) 5, 1, 2, 4, 3 (b) 5, 1, 3, 2, 4  
(c) 1, 5, 2, 4, 3 (d) 5, 1, 4, 2, 3

Q.36 In some brick masonry walls, patches of whitish crystals were found on the exposed surfaces. Also chipping and spalling of bricks took place from the same walls. Which among the following are the causes of these defects?

1. Settlement of foundation
2. Over-loading of the walls.
3. Sulphate attack.
4. Efflorescence.

The correct answer is:

- (a) 1 and 2 (b) 2 and 3  
(c) 2 and 4 (d) 3 and 4

Q.37 Consider the following with regards to burning of clay bricks:

1. The clay loses its plasticity.
2. Carbonate minerals are decarbonated.
3. Some of the carbonaceous matter is burnt.
4. Clay mass is converted into glass like substance.

5. Ferrous iron is oxidized to ferric form.

The changes that occur during dehydration period are :

- (a) 1, 3, 5 (b) 1, 2, 4  
(c) 1, 2, 3 (d) 2, 4, 5

**Answers Bricks**

1. (c) 2. (b) 3. (c) 4. (c) 5. (b) 6. (a) 7. (a) 8. (a) 9. (a) 10. (a)  
 11. (a) 12. (a) 13. (a) 14. (b) 15. (c) 16. (a) 17. (a) 18. (c) 19. (a) 20. (a)  
 21. (c) 22. (a) 23. (d) 24. (a) 25. (b) 26. (b) 27. (a) 28. (c) 29. (b) 30. (a)  
 31. (c) 32. (a) 33. (b) 34. (a) 35. (a) 36. (d) 37. (c)

**Explanations Bricks**

2. (b)  
 The ingredients of a good brick clay (per cent) are  
 (i) Silica (50-60%)  
 (ii) Alumina (20-30%)  
 (iii) Lime (2-5%)  
 (iv) Oxide of Iron (5 to 6 > 7%) and  
 (v) Magnesia (<1%)
3. (c)  
 The standard dimension of modular brick as recommended by the Bureau of Indian Standards is Length  $\times$  Width  $\times$  Thickness = 190  $\times$  90  $\times$  90 mm, including the thickness of mortar so that the effective size of brick becomes 200  $\times$  100  $\times$  100 mm. This is known as nominal size of modular brick.
5. (b)  
 Silica is present either free as sand or in combination as silicate of alumina. Presence of silica prevents shrinking, cracking or warping of green brick. In the presence of lime and oxide of iron, silica fuses at lower temperature and provides the brick its hardness and durability.
18. (c)  
 For getting a good brick bond,  
 (i) the amount of lap should be one-fourth brick along the length of the wall and one-half brick across the thickness of wall.
- (ii) the brick should be of uniform size to get uniform lap.  
 (iii) the stretchers should be used in the facing.  
 (iv) the use of brick bat should be discouraged except under special circumstances.  
 (v) the vertical joints in the alternate courses should be vertically above each other.
21. (c)  
 Number of modular bricks of size 20 cm  $\times$  10 cm  $\times$  10 cm with mortar  

$$= \frac{1}{0.2 \times 0.1 \times 0.1} = \frac{1000}{2} = 500 \text{ bricks}$$
  
 The nominal size of brick is taken as 20 cm  $\times$  10 cm  $\times$  10 cm while the actual size is 19 cm  $\times$  9 cm  $\times$  9 cm.
22. (a)  
 There is no point in using a mortar with higher strength than the masonry units since the units will crush earlier than the mortar. Also it will be wasteful of money to use a very weak mortar for high strength masonry units. Thus there is an optimum relationship between masonry unit strength and mortar strength.
31. (c)  
 Tempering consists of kneading the earth with feet so as to make the mass stiff and plastic (by plasticity) and done in pug mills and the operation is called pug miles.