TEST-1

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1. The strength of durability of concrete depends upon.
   (a) Size of aggregates
   (b) Grading of aggregates
   (c) Moisture contents of aggregates
   (d) All of these.
2. The workability of concrete is defined as the
   (a) Ease with which it can be mixed, transported and placed in position in a homogeneous state.
   (b) Bearing up of cohesion in a mass concrete.
   (c) Separation of water from the freshly mixed concrete.
   (d) None of these.
3. The maximum percentage of chemical ingredient of cement is
   (a) Alumina
   (b) Iron oxide
   (c) Lime
   (d) Silica
4. Which compound in cement, gives early age strength
   (a) C_3S
   (b) C_2S
   (c) C_3A
   (d) C_4AF
5. For cold weathering concreting the cement used is
   (a) O.P.C
   (b) R.H.C
   (c) L.H.C
   (d) None of these
6. The length of the vicat plunger is
   (a) 40mm
   (b) 60mm
   (c) 50mm
   (d) 30mm
7. The unit weight of cement in kN/m^3
   (a) 25 kN/m^3
   (b) 24 kN/m^3

(c) 20 kN/m^3
(d) 16 kN/m^3

8. Sand that is recommended for R.C.C work should have fineness modulus.
   (a) 0-2
   (b) 2-3.5
   (c) 3-4.5
   (d) 4-5
9. For dam construction the size of aggregates are
   (a) 40mm
   (b) 50mm
   (c) 60mm
   (d) 75mm
10. The bulk density of aggregates , is
   (a) kN/m^3
   (b) Kg/1tr
   (c) g/cm^3
   (d) All the above.
11. The PH value of water shall not less than.
   (a) 5.0
   (b) 6.0
   (c) 6.5
   (d) 7.0
12. Water cement ratio is
   (a) Weight of water to that of cement.
   (b) Weight of concrete to that of water.
   (c) Volume of concrete to that of water.
   (d) All the above.
13. The minimum water-cement ratio is
   (a) 0.35
   (b) 0.45
   (c) 0.50
   (d) None of these
14. The modules of elasticity of steel shall be taken as
   (a) 100kN/mm^2
   (b) 200 kN/mm^2
   (c) 250 kN/mm^2
   (d) 300 kN/mm^2
15. Tensile strength of concrete from the compressive strength, is found to be
   (a) $F_{cr}=0.7\sqrt{f_{ck}}$ N/mm^2
   (b) $F_{cr}=0.8\sqrt{f_{ck}}$ N/mm^2

(c) $F_{cr}=0.6\sqrt{f_{ck}}$ N/mm^2
(d) All the above

16. Segregation in concrete results in
    (a) Honey combing
    (b) Porous Layers
    (c) Surface scaling
    (d) All the above
17. Harshness in concrete is due to the excess of
    (a) Water
    (b) Finer particles
    (c) Middle sized particles
    (d) Coarse particles
18. In order to avoid segregation, the concrete should not be thrown from a height
    (a) Agree
    (b) Disagree
    (c) Not known
    (d) None of these
19. Reinforced cement concrete is equally strong in taking
    (a) Tensile and compressive stress
    (b) Compressive and shear stresses.
    (c) Tensile, compressive and shear stresses.
    (d) Tensile and shear stresses.
20. Plain cement concrete is strong in taking
    (a) Compressive stress.
    (b) Tensile stress
    (c) Shear stress
    (d) All of these
21. Unit weight of P.C.C . in kN/m^3 is
    (a) 24 KN/m^3
    (b) 25 kN/m^3
    (c) 20kN/m^3
    (d) 26 kN/m^3
22. For one bag of cement water required is
    (a) 10 kg
    (b) 30 kg
    (c) 35 kg
    (d) 39 kg
23. The removal of excess air after placing concrete helps in increasing the strength of concrete by
    (a) 15 to 20%
    (b) 20 to 30%
    (c) 30 to 50%

(d) 50 to 70%

24. Cement concrete is _____to moisture
    (a) Permeable
    (b) Impermeable
    (c) Rapid Harden
    (d) None of these
25. The concrete without any reinforcement has _____tensile strength
    (a) High
    (b) Medium
    (c) Low
    (d) All the above
26. Segregation of concrete
    (a) Increases the strength of concrete
    (b) Decreased the strength of concrete.
    (c) Not effect to strength of concrete.
    (d) None of these.
27. The material used as an ingredient of concrete is usually
    (a) Cement
    (b) Aggregate
    (c) Water
    (d) All the above
28. A suitable admixture added at the time of preparing the concrete mix, makes the concrete
    (a) Water proof
    (b) Acid proof
    (c) Highly strong
    (d) All of the above
29. The function of aggregates in concrete is to serve as
    (a) Binding material
    (b) Filler
    (c) Catalyst
    (d) All the above
30. Calcareous and argillaceous materials used in manufacture of cement consists of
    (a) Lime stone
    (b) Chalk
    (c) Shales
    (d) All the above
31. In the manufacture of cement, the dry of wet mixtue of calcareous and argillaceous materials is burnt in a
    (a) A Rotary kiln
    (b) A Grinder
    (c) Country kiln
    (d) All the above

32. The proportion of lime, silica, alumina and iron oxide in a Portland cement is
    (a) 63:22:6:3
    (b) 63:22:3:6
    (c) 22:63:6:3
    (d) All the above
33. The presence of lime in cement
    (a) Make s the cement sound and provides strength to the cement.
    (b) Prolong the setting time
    (c) Causes unsoundness in cement
    (d) All the above
34. The gypsum is added to the cement for
    (a) Providing high strength to the cement
    (b) Controlling the initial setting time of cement.
    (c) Lowering the clinkering temp of cement
    (d) All the above.
35. Which of the following ingredient of cement when added in excess quantity, causes the cement to set slowly.
    (a) Lime
    (b) Silica
    (c) Alumina
    (d) Iron oxide
36. Excess lime when added
    (a) Makes the cement unsound
    (b) Causes the cement to expand and disintegrate
    (c) Lowering the clinkering temp of cement
    (d) Both ‘a’ and ‘b’
37. In order to provide colour, hardness and strength to the cement, the ingredient used is
    (a) Lime
    (b) Solica
    (c) Alumina
    (d) Iron oxide
38. After the final grinding, the cement is sieved through IS sieve number
    (a) 9
    (b) 12
    (c) 24
    (d) 48
39. Efflorescence is cement is caused due to the excess of
    (a) Lime
    (b) Silica
    (c) Alkalies
    (d) Iron oxide
40. The presence of tricalcium silicate in cement

(a) Hydrates the cement rapidly
(b) Generates less heat of hydration.
(c) Offer high resistance to sulphate attack
(d) All of these

ANSWER:

1(d),2(a),3(c),4(a),5(b),6(c),7(d),8(b),9(a),10(b),11(b),12(a),13(a),14(b),15(a),16(d),17(c),18(a),19(c),20(a),21(a),22(c),23(a),24(b),25(c),26(b),27(d),28(d),29(b),30(d),31(a),32(a),33(a),34(b),35(b),36(d),37(d),38(a),39(c),40(a)

TEST-2

Sub-R.C.C

Time :1hour
Total Marks-40
Name of the Student:-

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1. The presence of dicalcium silicate in cement.
   (a) Hydrates the cement slowly.
   (b) Generates less heat of hydration.
   (c) Has more resistance to sulphate attack.
   (d) All of these
2. High percentage of tricalcium silicate and low percentage of dicalcium silicate in cement results in.
   (a) Rapid hardening
   (b) High early strength
   (c) High heat of generation
   (d) All the above
3. The first compound which reacts with water when mixed with cement is
   (a) Tricalcium Aluminate
   (b) Tricalcium silicate
   (c) Di-calcium silicate
   (d) Teracalcium aluminate
4. The sum of the percentage of tricalcium silicate and dicalcium silicate for Portland cement varies from.
   (a) 50 to 60%
   (b) 60 to 70%
   (c) 70 to 80%
   (d) 80 to 90%

5. The rate of hydration is _____proportional to the generation of heat
   (a) Directly
   (b) Indirectly
   (c) Equally
   (d) None of these
6. Rapid hardening cement is used
   (a) Where high early strength is desired
   (b) Where form work is to be removed as early as possible
   (c) For construction of road pavements.
   (d) All of the above
7. Low heat cement is used in
   (a) Thin structures
   (b) Thick structures
   (c) Sea structures
   (d) Submarine structures
8. Blast furnace slag cement concrete requires _____time for shuttering and curing.
   (a) Less
   (b) More
   (c) Medium
   (d) All the above
9. Which of the following cements is expected to have the highest compressive strength after 3 days
   (a) Ordinary Portland cement
   (b) Rapid hardening cement
   (c) High alumina cement
   (d) Sulphate resisting cement.
10. Under sea structure, the cement used is
   (a) R.H.C
   (b) L.H.C
   (c) H.A.C
   (d) RSC
11. The cement, widely used in retaining walls, is
   (a) R.H.C
   (b) L.H.C
   (c) S.R.C.
   (d) O.P.C.
12. The strength of concrete using air entraining cement gets reduced by
   (a) 5 to 10%
   (b) 10 to 15%
   (c) 15 to 20%
   (d) 20 to 25%
13. Pozzolana is essentially a silicious material containing clay up to

(a) 20%
(b) 40%
(c) 60%
(d) 80%

14. Which of the following statements is correct?
    (a) Sulphate resisting cement is particularly used for canal lining.
    (b) Low heat cement should not be used for thin concrete structures.
    (c) Rapid hardening cement should not be used for massive concrete structures
    (d) All of the above
15. Match the correct answer

Group A	Group B
`1. Bhakra dam	(A) High alumina cement
2. Chemical plants	(B) Pozzolana cement
3.Not to be used in thin R.C.C. structures.	(C)Sulphate resisting cement
4. Marina works	(D) Blast furnace slag cement

16. The degree of grinding of cement is called
    (a) Fineness
    (b) Soundness
    (c)Impact value
    (d) Bulking
17. Too much fineness of cement
    (a) Results cracks in concrete
    (b) Generates greater heat
    (c) Develops later strength
    (d) All the above
18. According to IS Code , the requirement of an ordinary Portland cement is
    (a) The residue does not exceed 10% when sieved through is sieve no .9
    (b) Its initial setting time is not less than 30 minutes.
    (c) its expansion is not morethan 10mm for unaerated cement
    (d) All the above.
19. The compressive strength an ordinary Portland cement (1:3) after 7 days test should not be less than.
    (a) 11N/mm^2
    (b) 17.5 N/mm^2
    (c) 22 N/mm^2
    (d) 27.5N/m^2
20. The percentage of water for making a cement paste of normal consistency varies from
    (a) 15 to 25%
    (b) 25 to 35%
    (c) 35 to 50%
    (d) 50 to 60%
21. For performing the compressive strength test of cement, the size of cube mould should be
    (a) 7.06cm
    (b)75mm
    (c)80mm

(d)All the above

22.The cubes of cement prepared for compressive strength test should be kept at a temp of _____in an atmosphere of at least 90% humidity of r 24hours

(a) $15^0 \pm 2^0C$
(b) $21^0 \pm 2^0C$
(c) $27^0 \pm 2^0C$
(d) $30^0 \pm 2^0C$

23. The inert mineral material used for the manufacture of mortars and concrete is

(a) Cement
(b) Water
(c) Aggregates
(d) Admixture

24. Accordingly to IS: 383-1970, a good aggregate for concrete construction should be

(a) Chemically inert
(b) Sufficiently strong
(c)Sufficiently hard and durable
(d) All the above

25. For reinforced concrete, the aggregate used is

(a) Sand
(b) Gravel
(c) Crushed rock
(d) All of these

26. For the manufacture of concrete a low density, the aggregate used is

(a) Furnace clinker
(b) Coke breeze
(c)Saw dust
(d) All the above

27. The aggregate which pass through 75mm IS sieve and entirely retain on 4.75 IS sieve is known as

(a) Cyclopean aggregate
(b) Coarse aggregate
(c)Fine aggregate
(d) Aall-in-aggregate

28. The minimum particle size of fine aggregate is

(a) 0.0075mm
(b) 0.075mm
(c)0.75mm
(d)0.95m

29. . The aggregates of _____-shape have manimum voids

(a) Irregular
(b) Angular
(c)Rounded
(d) Flaky

30. The aggregates of _____-shape have maximum voids

(a) Irregular
(b) Angular
(c)Rounded
(d) Flaky

31.Which of the following statement is correct

(a) The maximum size of coarse aggregate should not exceed one fourth of the minimum dimension of the plain concrete member.

(b) The maximum size of coarse aggregate should not exceed one fifty of the minimum dimension of the reinforced concrete member

(c)The aggregates of 40mm, 20mm and 10mm sizes are commonly used for concrete works

(d) All the above

32. An aggregate which may contain some moisture in the pores but having dry surface is known as.
    (a) Dry aggregate
    (b) Moist aggregate
    (c) Saturated surface dry aggregate
    (d) All the above
33. An aggregate having all the pores filled with water but having dry surface is called .
    (a) Dry aggregate
    (b) Moist aggregate
    (c) Saturated surface dry aggregate
    (d) All the above
34. An aggregate having all the pores are filled with water and also having its surface wet is called
    (a) Dry aggregate
    (b) Moist aggregate
    (c) Saturated surface dry aggregate
    (d) All the above
35. The deleterious materials present in the aggregate
    (a) Prevent normal hydration of cement
    (b) Reduce the strength and durability of concrete.
    (c) Modify the setting action and cause efloresecence.
    (d) All of the above
36. The resistance of an aggregates to compressive forces is known as
    (a) Crushing value
    (b) Impact value
    (c)Abrasion value
    (d) None of these
37. The resistance of an aggregates to wear is known as
    (a) Shear value
    (b) Crushing value
    (c)Abrasion value
    (d) Impact value
38. Los Angles machine is used to perform
    (a) Crushing strength
    (b) Impact test
    (c) Water absorption
    (d) Abrasion resistance test
39. The value fineness modules for fin sand is
    (a) 1.1 to 1.3
    (b) 1.3 to 1.6
    (c)1.6 to 2.2
    (d) 2.2 to 2.6
40. If th fineness modules of sand is 3, then the sand is graded as
    (a) Very fine sand

(b) Fine sand
(c)Medium sand
(d) Coarse sand

ANSWER:

1(d),2(d),3(a),4(c),5(a),6(d),7(b),8(b),9(c),10(c),11(b),12(b),13(d),14(d),15(1.b)(2.a)(3.d)(4.c),16(a),17(d),18(d),19(b),20(b),21(a),22(c),23(c),24(d),25(d),26(d),27(b),28(b),29(c),30(b),31(d),32(a),33(c),34(b),35(d),36(a),37(c),38(d),39(d),40(d)

TEST-3

Sub-R.C.C

Time :1hour
Total Marks-40
Name of the Student:-

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1. The standard sand now used in India is obtained from
   (a) Ennore (Chennai)
   (b) Mumbai
   (c) Orissa
   (d) Jajpur
2. Insufficient quantity of water
   (a) Makes the concrete mix harsh
   (b) Makes the concrete mix unworkable
   (c) Causes segregation in concrete
   (d) Causes bleeding in concrete.
3. Excess quantity of water
   (a) Makes the concrete mix harsh
   (b) Makes the concrete mix unworkable
   (c) Causes segregation in concrete
   (d) Causes bleeding in concrete.
4. According to the rule of water cement ratio, the strength of concrete wholly depends upon.
   (a) The quality of cement.

(b) The quality of cement mixed with aggregate.
(c) The amount of water used in preparation of concrete mix.
(d) All of the above

5. The strength of cement concrete increases with
   (a) The increase of water cement ratio.
   (b) The decrease of water cement ratio.
   (c) The increase of cement ratio
   (d) None of these
6. In case of honey –comb structure, the water-cement ratio is
   (a) More than 0.35
   (b) Less than 0.35
   (c) More than 0.45
   (d) Less than 0.45
7. Hydration of cement is due to the chemical action of water with.
   (a) Tricalcium silicate
   (b) Dicalcium silicate
   (c) Tricalcium aluminate
   (d) All of these
8. The development of first 28 days strength is on account of the hydration of
   (a) Tricalcium silicate
   (b) Dicalcium silicate
   (c) Tricalcium aluminate
   (d) Tetra calcium alumina ferrite
9. Water cement ration is, usually, expressed in
   (a) Litres of water required per bag of cement
   (b) Litres of water required per kg of cement
   (c) Both (a) and (b)
   (d) None of these
10. High temp_____the setting time of cement in concrete
    (a) Increases
    (b) Decreases
    (c) No effect
    (d) None of these
11. The concrete mix is said to be workable if it has
    (a) Compatibility
    (b) Movability
    (c) Stability
    (d) All of these
12. The internal friction between the ingredients to concrete is minimized by
    (a) Adopting coarse aggregates
    (b) Using more water
    (c) Reducing the surface area

(d) All of these

13. For the improvement of work ability of concrete , the shape of aggregate recommended is
    (a) Irregular
    (b) Angular
    (c) Round
    (d) Flaky
14. The use of air-entraining agents in concretes
    (a) Increases workability of concrete
    (b) Decreases bleeding
    (c) Decreases strength
    (d) All of these
15. The workability of concrete is expressed by
    (a) Water-cement ratio
    (b) Slump value
    (c) Compaction factor
    (d) Both (a) and (b)
16. The workability of concrete can be improved by adding
    (a) Hydrated lime
    (b) Fly ash
    (c) Calcium chloride
    (d) All the above
17. The steel mould used for slump test is in the form of a
    (a) Cube
    (b) Cylinder
    (c) Frustrum of a cone
    (d) None of these
18. The top diameter, bottom diameter and height of the mould used for slump test are
    (a) 100mm, 200mm, 300mm
    (b) 200mm,100mm,300mm
    (c) 200mm,300mm,100mm
    (d) 100mm,300mm,200mm
19. For high degree of workability, the slump value should vary between
    (a) 0 to 25mm
    (b) 25 to 50mm
    (c) 50 to 80mm
    (d) 80 to 100mm
20. For high degree of workability , the compaction factor is
    (a) 0.65
    (b) 0.75
    (c) 0.85
    (d) 0.95
21. Vibrated concrete needs _____slump values

(a) High
(b) Less
(c) Nil
(d) None of these

22. The slump test of concrete is used to measure its
    (a) Consistency
    (b) Mobility
    (c) Homogeneity
    (d) All the above
23. The Vee-Bee test is suitable for concrete mixes of low and very low workabilities
    (a) True
    (b) False
    (c) Not known
    (d) All the above
24. As per IS:456-1978, the concrete mixes are designated into
    (a) 4 grades
    (b) 5 grades
    (c) 6 grades
    (d) 7 grades
25. Which of the following grade is not recommended by IS 456-1978?
    (a) M_{10}
    (b) M_{20}
    (c) M_{40}
    (d) M_{55}
26. In order to prepare a test specimen, it is necessary to
    (a) Mix the cement and fine aggregate (sand) dry hand
    (b) Mix the coarse aggregate
    (c) Mix water to the cement, fine aggregate and coarse aggregate
    (d) All of the above
27. The ratio of differenct ingredients (cement, sand and aggregate) in concrete mix of grade M_{20} is.
    (a) 1:1:2
    (b) 1:1.5:2
    (c) 1:2:4
    (d) 1:3:6
28. For mass concrete in piers and abutments, the grade of concrete mix used, is
    (a) 1:1:2
    (b) 1:1.5:2
    (c) 1:2:4
    (d) 1:3:6
29. For highly loaded columns, the concrete mix used is
    (a) 1:1:2
    (b) 1:1.5:2

(c) 1:2:4
(d) 1:3:6

30. The correct proportioning of various ingredients of concrete largely
    (a) Bulking of sand
    (b) Water context
    (c) Absorption
    (d) All the above
31. The maximum quantity of aggregate per 50kg of cement should not axceed.
    (a) 100kg
    (b) 200kg
    (c) 350kg
    (d) 450kg
32. The minimum quantity of cement to be used in controlled concrete is
    (a) 120kg/cm^2
    (b) 160 kg/cm^2
    (c) 220 kg/cm^2
    (d) 280 kg/cm^2
33. The concrete in which no preliminary tests are performed for designing the mix is called
    (a) Rich concrete
    (b) Controlled concrete
    (c) Lean concrete
    (d) Ordinary concrete
34. The factors which effects the design of concrete mix is
    (a) Fineness modulus
    (b) Water cement ratio
    (c) Slump
    (d) All of these
35. The process of mixing, transporting, placing and compacting the cement, concrete should not take more than.
    (a) 30 minutes
    (b) 60minutes
    (c) 90 minutes
    (d) 120mm
36. To prevent segregation the concrete should to be thrown from a height of more than.
    (a) ½ m
    (b) 1m
    (c) 1.5m
    (d) 2m
37. The process of consolidating concrete mix after placing it in position is termed as.
    (a) Curing
    (b) Wetting
    (c) Compaction

(d) All of these

38. The object of curing is to
    (a) Prevent the loss of water by evaporation.
    (b) Reduce the shrinkage of concrete
    (c) Preserve the properties of concrete
    (d) All of these
39. If 30% excess water is added, the strength of concrete is reduced by
    (a) 30%
    (b) 40%
    (c) 50%
    (d) 60%
40. After moulding, the test specimens of trial mix are placed at a temp. of
    (a) 10 ± 2^0C
    (b) 15 ± 2^0C
    (c) 23 ± 2^0C
    (d) 27 ± 2^0C

ANSWER:

1(a),2(botha&b),3(bothc&d),4(c),5(a),6(b),7(d),8(a),9(a),10(b),11(d),12(d),13(c),14(d),15(d),16(d),17(c),18(a),19(d),20(d),21(b),22(a),23(a),24(d),25(d),26(d),27(b),28(d),29(a),30(d),31(d),32(c),33(d),34(d),35(a),36(b),37(c),38(d),39(c),40(d)

TEST-4

Sub-R.C.C

Time :1hour
Total Marks-40
Name of the Student:-

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1. In the reinforced cement concrete structure, the steel reinforcement consists of .
   (a) Deformed bars
   (b) Cold twisted bars
   (c) Mildsteel and medium tensile steel bars
   (d) All of these
2. In singly reinforced beams, steel reinforcement is provided in
   (a) Compressive zone
   (b) Tensile zone
   (c) Neutral zone

(d) All the above

3. In a simply supported reinforced concrete beam, the reinforcement is placed.
   (a) Above the neutral axis
   (b) Below the neutral axis
   (c) At the neutral axis
   (d) None of these
4. In a singly reinforced beam, the effective depth is measured form the compression edge to the
   (a) Tensile edge
   (b) Centre of tensile reinforcement
   (c) Neutral axis of the beam
   (d) All of the above
5. The application of elastic theory to the beams is based on the assumption that
   (a) At any cross-section, plane sections before bending remain plane after bending
   (b) All tensile stresses are taken up by reinforcement alone and none by the concrete.
   (c) Steel reinforcement is free from initial stresses when it is embedded in concrete.
   (d) All of the above
6. In case of a cantilever beam , the tensile zone is D.
   (a) Above the neutral axis
   (b) Below the neutralaxis
   (c) At the neutral axis
   (d) All the above
7. If σ_{cbc} is the permissible stress in compression due to bending in concrete in N/mm^2 , the modular ration(m) is of the order of
   (a) $\frac{280}{\sigma_{cbc}}$
   (b) $\frac{280}{3\sigma_{cbc}}$
   (c) $\frac{280}{4\sigma_{cbc}}$
   (d) None of these
8. In a singly reinforced concrete beam, if the load is vey small.
   (a) Only concrete will resist tension
   (b) Only steel bars will resist tension.
   (c) Both concrete & steel will resist tension.
   (d) Both concrete & steel will resist compression.
9. The modular ratio is the ration of
   (a) Young's modulus of steel to the young's modulus of concrete
   (b) Young's modules of concrete to the young's modulus of steel
   (c) Load carried by steel to the load carried by concrete.
   (d) Load carried by concrete to the load carried by step.

10. In a reinforced concrete column, the cross –sectional area of steel bar is as and that of concrete ia AC; the equivalent area of the section n terms of concrete is equal to.
    (a) $As+mA_c$
    (b) A_c+mA_s
    (c) A_s-mA_c
    (d) A_c-mA_s
11. In a singly reinforced concrete beam, as the load increases.
    (a) Only concrete will resist tension
    (b) Only steel bars will resist tension.
    (c) Both concrete and steel will resist tension.
    (d) Both concrete and steel will resist compression.
12. Normally, the tensile strength of concrete is about_____of its compressive strength
    (a) 10 to 15%
    (b) 15 to 20%
    (c) 20 to 25%
    (d) 25 to 30%
13. If the load on beam is increased, the tensile stress sin the concrete below the neutral axis will
    (a) Increase
    (b) Decrease
    (c) Remain unchanged
    (d) None of these
14. Under normal loading conditions, the tensile stressed setup in the concrete will be _____the permissible stress.
    (a) More than
    (b) Less than
    (c) Equal to
    (d) All the above
15. A reinforced concrete beam will crack if tensile stress set up in the concrete below the neutral axis is
    (a) More than the permissible stress
    (b) Less than the permissible stress
    (c) Equal to the permissible stress
    (d) All the above.
16. In a sibgly reinforced beam the depth of neutral axis below the top of the beam (n_c) is
    (a) $N_c=\frac{m\sigma_{cbc}}{m\sigma_{cbc}+\sigma_{st}} \times d$
    (b) $N_c=\frac{m\sigma_{cbc}}{m\sigma_{cbc}-\sigma_{st}} \times d$
    (c) $N_c=\frac{m\sigma_{cbc}+\sigma_{st}}{m\sigma_{cbc}} \times d$

(d) $N_c = \frac{m\sigma_{cbc} - \sigma_{st}}{m\sigma_{cbc}} \times d$

17. If the breadth of a singly reinforced beam is d, effective depth is d, depth of neutral ax is below the top of beam is n and the compressive stress in the extreme fibre of concrete is σ_{cbc} , the the moment of resistance of the beak is equal to .
    (a) $M.R = b_n \frac{\sigma_{cbc}}{2}\left(\frac{3d-n}{3}\right)$
    (b) $M.R = b_n \frac{\sigma_{cbc}}{2}\left(\frac{d-n}{3}\right)$
    (c) $M.R = b_n \frac{\sigma_{cbc}}{2}\left(\frac{2d-n}{3}\right)$
    (d) $M.R = b_n \frac{\sigma_{cbc}}{2}\left(\frac{2d-n}{4}\right)$
18. The leave arm in a singly reinforced beam is
    (a) $\frac{d-n}{3}$
    (b) $\frac{2d-n}{3}$
    (c) $\frac{3d-n}{3}$
    (d) $\frac{4d-n}{3}$
19. In a beam section, if the steel reinforcement is of such a magnitude that the permissible stresses in concrete and steel are developed simultaneously, the section is.
    (a) Balanced section
    (b) Economical section
    (c) Critical section
    (d) All the above
20. The section in which concrete is not fully stressed to its permissible value when stress in steel reaches its maximum value is
    (a) Under-reinforced section
    (b) Over-reinforced section
    (c) Critical section
    (d) Balanced section
21. The actual neutral axis of n under reinforced section is above the critical neutral axis of a balanced section
    (a) Correct
    (b) Incorrect
    (c) Not known
    (d) None of these
22. The neutral axis of a balanced section is called
    (a) Balanced neutral axis
    (b) Critical neutral axis

(c) Equivalent neutral axis
(d) All of these

23. The moment of resistance of an under- reinforced section is computer on the basis of
    (a) Compressive force developed in concrete
    (b) Tensile force developed in steel
    (c) Both (a) & (b)
    (d) All the above
24. In a singly reinforced beam, if the stress in concrete reaches its allowable limit later than the steel reaches, its permissible value, the beam section is said to be
    (a) Under-reinforced section
    (b) Over-reinforced section
    (c) Critical section
    (d) Balanced section
25. If the tensile stress in steel reinforcement is σ_{st} depth of neutral axis is n and the effective depth d, then the moment of resistance of an under-reinforced section is
    (a) $\sigma_{st}A_{st}\left[\frac{d-n}{3}\right]$
    (b) $\sigma_{st}A_{st}\left[\frac{2d-n}{3}\right]$
    (c) $\sigma_{st}A_{st}\left[\frac{3d-n}{3}\right]$
    (d) $\sigma_{st}A_{st}\left[\frac{4d-n}{3}\right]$
26. In an over-reinforced section
    (a) Steel reinforcement is not fully stressed to its permissible value
    (b) Concrete is not fully stressed to its permissible value
    (c) Either (a) and (b)
    (d) Both (a) and (b)
27. For an over –reinforced (singly reinforced)rectangular reinforced concrete section
    (a) The lever arm will be less than that for a balanced section
    (b) The maximum stress developed by concrete will be equal to allowable stress in concrete
    (c) The maximum stress developed by steel will be equal to the allowable
    (d) All the above
28. The moment of resistance of an over-reinforcement section is determined on the basis of
    (a) Compressive force developed in concrete
    (b) Tensile force developed in steel
    (c) Both (a) & (b)
    (d) None of these
29. The neutral axis of an over –reinforced section falls
    (a) On the critical neutral axis of balanced section.

(b) Below the critical neutral axis of balanced section
(c) Above the neutral axis o balanced section
(d) Al l the above

30. For a balanced section, the moment of resistance obtained from compressive force will be _____the moment of resistance obtained from the tensile force
    (a) Greater than
    (b) Less than
    (c) Equal to
    (d) None of these
31. As the percentage of steel in a beam increases, the depth of neutral axis
    (a) Increases
    (b) Decreases
    (c) Equal to
    (d) None of these
32. For a balanced reinforced section, the depth of critical neutral axis from the top of the beam (n_c) is given by
    (a) $\frac{m\sigma_{cbc}}{\sigma_{st}} = \frac{n_c}{d - n_c}$
    (b) $\frac{m\sigma_{cbc}}{\sigma_{st}} = \frac{d - n_c}{n_c}$
    (c) $\frac{m\sigma_{cbc}}{\sigma_{st}} = \frac{n_c}{d + n_c}$
    (d) $\frac{m\sigma_{cbc}}{\sigma_{st}} = \frac{d + n_c}{n_c}$
33. The effective depth of a singly reinforced rectangular beam is 300mm. the section is over-reinforced and the neutral axis is 120mm below the top. If the maximum stress attained by concrete is 5N/mn^2 and the modular ratio is 18, then the stress developed in the steel will
    (a) 130N/mm^2
    (b) 135N/mm^2
    (c) 160N/mm^2
    (d) 180N/mm^2
34. The maximum shear stress (τ_{max}) in a reinforced concrete beam of width (b) and subjected to as hear force (F) is equal to
    (a) $\frac{F}{b(3d - n)}$
    (b) $\frac{2F}{b(3d - n)}$
    (c) $\frac{3F}{b(3d - n)}$
    (d) $\frac{4F}{b(3d - n)}$
35. Regarding the working stress design of under reinforced concrete section,

(a) The neutral axis depth will be greater than that of a balanced section.
(b) The stress in steel intension will reach its maximum permissible value first.
(c) The moment of resistance will be less than that of the balanced section.
(d) The concrete on the tension side is also be considered for calculating the moment of resistance of the section.

36. If modular ratio is m, effective depth is d and stress ratio is r=$\frac{\sigma_{st}}{\sigma_{cbc}}$
Then the depth of neutral axis (n_c) of a balanced section is
(a) $\frac{m}{(m-r)} \times d$
(b) $\frac{m}{(m+r)} \times d$
(c) $\frac{(m+r)}{m} \times d$
(d) $\frac{m}{r} \times d$

37. The deep beams are designed for
(a) Shear force only
(b) Bending moment only
(c) Both S.F & B.M
(d) Bearing

38. In a reinforced concrete beam , the shear stress distribution above the neutral axis following a
(a) A straight line
(b) Circular curve
(c) Parabolic curve
(d) All the above

39. The maximum shear stress in rectangular beam is _____times of average shear stress.
(a) 1.15
(b) 1.25
(c) 1.50
(d) 1.75

40. For a reinforced concrete beam section, the shape of shear stress diagram is
(a) Parabolic over the whole section with maximum value at the neutral axis.
(b) Parabolic above the neutral axis and rectangular below the neutral axis.
(c) Linearly varying as the distance form the N.A.
(d) All the above.

ANSWER:

1(d),2(b),3(b),4(b),5(d),6(a),7(b),8(c),9(c),10(b),11(b),12(a),13(a),14(a),15(a),16(a),17(a),18(c),19(d),20(a),21(a),22(b),23(b),24(b),25(c),26(a),27(b),28(a),29(b),30(c),31(a),32(a),33(b),34(c),35(bothb&c),36(b),37(b),38(c),39(c),40(b)

TEST-5

Sub-R.C.C

Time :1hour
Total Marks-40
Name of the Student:-

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1. Shear reinforcement is provided in the form of
   (a) Vertical bars
   (b) Inclined bars
   (c) Combination of vertical and inclined bars
   (d) All the above
2. At the centre of beam, the shearing stresses are
   (a) More
   (b) Less
   (c) Negligible
   (d) None of these
3. The centre to centre spacing of vertical stirrups, in a rectangular beam, is
   (a) Increased towards the centre of the span of the beam
   (b) Decreased towards the centre of the span of the beam.
   (c) Increased at the ends.
   (d) None of these
4. The number of stirrups resisting shear force, in a reinforced beam, is given by
   (a) $\frac{shear\ force}{spacing\ of\ stirrups}$
   (b) $\frac{lever\ arm}{spacing\ of\ stirrups}$
   (c) $\frac{spacing\ of\ stirrups}{leaver\ arm}$

(d) $\frac{spacing\ of\ stirrups}{shfar\ force}$

5. A stirrups consists of _____diameter mildsteel bars bent round the tensile reinforcement
   (a) 1 to 5mm
   (b) 5 to 12mm
   (c) 12 to 18mm
   (d) All the above
6. According to IS:456-1978, the spacing of stirrups shall not exceed a distance _____the leverarm of the resisting moment.
   (a) Equal to
   (b) Two times
   (c) Three times
   (d) All the above
7. The torsion resisting capacity of a given reinforced concrete section.
   (a) Decreases with decrease in stirrups spacing.
   (b) Decreases with increase in longitudinal bars.
   (c) Does not depend upon stirrups and longitudinal steels.
   (d) Increases with increase in stirrups and longitudinal steels.
8. When the steel bars are embedded in concrete. The concrete after setting, adheres to the surface of the bars and thus resist any force that tends to pull or push this road. The intensity of this adhesive force is called.
   (a) Bond stress
   (b) Shear stress
   (c) Compressive stress
   (d) All of these
9. The longitudinal shearing stresses acting on the surface between the steel and concrete are called.
   (a) Bond stress
   (b) Tensile stresses
   (c) Compressive stresses
   (d) None of these
10. If L is the lever arm in reinforced concrete beam, S is the total perimeter of the steel bars and F is the shear force, then bond stress developed in concrete around the steel reinforcement is
    (a) $\frac{F.S}{L}$
    (b) $\frac{F.L}{S}$
    (c) $\frac{F}{S.L}$
    (d) $F.S.L$
11. As per IS :456-1978, the permissible value of bond – stress for M_{15} grade of concrete is
    (a) 0.5 N/mm^2

(b) 1 N/mm^2
(c) 1.5 N/mm^2
(d) 2 N/mm^2

12. If the bond stress developed in a reinforced concrete beam is more than permissible value, it can be brought down by.
    (a) Increasing the depth of beam
    (b) Increasing the number of bars.
    (c) Decreasing the diameter of the bars
    (d) All of these
13. If $\emptyset$ is the diameter of reinforcing bar, then for M_{15} grade concrete and mild steel, the bond length used for spicing bar in tension is equal to
    (a) 28 $\emptyset$
    (b) 38$\emptyset$
    (c) 58$\emptyset$
    (d) 68$\emptyset$
14. When the diameter of a reinforcement bar is $\emptyset$, the anchorage value of the hook alone is equal to
    (a) 2 $\emptyset$
    (b) 8 $\emptyset$
    (c) 16 $\emptyset$
    (d) 32 $\emptyset$
15. If $\emptyset$ is the bar diameter, σ_s is the actual tensile stress in bar and τ_{bd} is the permissible average bond stress the length of lap for reinforcement bars in tension shall not be less than.
    (a) $\frac{\emptyset\sigma_s}{2\tau_{bd}}$ or 24 $\emptyset$ which ever is smaller
    (b) $\frac{\emptyset\sigma_s}{2\tau_{bd}}$ or 24 $\emptyset$ which ever is smaller
    (c) $\frac{\emptyset\sigma_s}{2\tau_{bd}}$ or 24 $\emptyset$ which ever is smaller
    (d) $\frac{\emptyset\sigma_s}{2\tau_{bd}}$ or 24 $\emptyset$ which ever is smaller
16. If $\emptyset$ is the bar diameter, σ_s, is the actual compressive stress in bar and τ_{bd} is the permissible average bond stresses the length for reinforcement bars in compression shall not be less than.
    (a) $\frac{\emptyset\sigma_s}{2\tau_{bd}}$ or 24 $\emptyset$ which ever is smaller
    (b) $\frac{\emptyset\sigma_s}{4\tau_{bd}}$ or 24 $\emptyset$ which ever is smaller
    (c) $\frac{\emptyset\sigma_s}{2\tau_{bd}}$ or 30 $\emptyset$ which ever is smaller
    (d) $\frac{\emptyset\sigma_s}{5\tau_{bd}}$ or 30 $\emptyset$ which ever is smaller
17. In a doubly reinforced beam , steel reinforcement is provided in a

(a) Tensile zone
(b) Compression zone
(c) Either (a) & (b)
(d) Both (a) & (b)

18. A doubly reinforced section is used
    (a) When the members are subjected to alternate external loads and the bending moment in the sections reverses.
    (b) When the member are subjected to loading eccentric in either side of the axis.
    (c) When the members are subjected to accidental lateral loads .
    (d) All of the above
19. In doubly reinforced rectangular beam, the allowatte stress in compression steel is_____the permissible stross intension insteel.
    (a) Greater than
    (b) Less than
    (c) Equal to
    (d) All of these
20. If the effective depth of a doubly reinforced concrete is d, the maximum stress in steel & concrete are σ_{st} and σ_{cbc}, then the neutral axis depth factor (k) if given by
    (a) K= $\frac{m\sigma_{cbc} + \sigma_{st}}{m\sigma_{cbc}}$
    (b) K= $\frac{m\sigma_{cbc}}{m\sigma_{cbc+\sigma_{st}}}$
    (c) K= $\frac{m\sigma_{cbc} - \sigma_{st}}{m\sigma_{cbc}}$
    (d) K= $\frac{m\sigma_{cbc}}{m\sigma_{cbc} - \sigma_{st}}$
21. The section of the beam having greater width at the top in comparison to the width below neutral axis is known as.
    (a) Critical section
    (b) T-section
    (c) L-section
    (d) None of these
22. The portion of the slab which acts monolithically with the beam and which resists the compressive stresses, is called _____of flange of the T-beam
    (a) Length
    (b) Breadth
    (c) Thickness
    (d) Depth
23. The breadth of the flange of a T-beam is
    (a) 1/3rd of the effective span of the T-beam
    (b) Twelve times the depth of slab plus breadth of rib.

(c) Centre to centre distance between the adjacent beam.
(d) Least of (a) , (b) or (c)

24. In a T-beam , the breadth of the rib is equal to the
    (a) Total thickness of the slab, including cover
    (b) Width of the portion of the beam in the compression zone
    (c) Width of the portion of the beam in the compression zone
    (d) All the above.
25. The thickness of flange in a T-beam is taken equal to the total thickness of the slab, including cover.
    (a) True
    (b) False
    (c) Not known
    (d) None of these
26. Slab forms the compression flange of the T-beam
    (a) Yes
    (b) No
    (c) Not known
    (d) None of these
27. The breadth of rib in a T-beam should at least be equal to _____the depth of rib
    (a) One –half
    (b) One –third
    (c) One-fourth
    (d) One –sixth
28. In a T-beam, the vertical distance between the bottom of the flange and the centre of the tensile reinforcement is
    (a) Breadth of flange
    (b) Thickness of flange
    (c) Breadth of slab
    (d) Depth of rib
29. The effective depth of a T-beam is the distance between the
    (a) Centre of the flange and the top of the tensile reinforcement
    (b) Top of the flange and the centre of the tensile reinforcement
    (c) Bottom of the flange and the centre of the tensile reinforcement
    (d) Centre of the flange and the bottom centre of the tensile reinforcement
30. The neutral axis in a T-beam section falls
    (a) Within the flange
    (b) Outside the flange
    (c) Either (a) or (b)
    (d) All the above
31. When the neutral axis of T-beam falls outside the flange (below the slab), then
    (a) $Bd_s\left(n-\frac{d_s}{2}\right)=mA_{st}(d-n)$

(b) $Bd_s\left(n+\frac{d_s}{2}\right)=mA_{st}(d-n)$

(c) $Bd_s(n+ds)=mA_{st}(d+n)$

(d) None of these

32. For Q.No.31, the depth of the net compression $\left(\frac{\square}{y}\right)$ between the top of the beam is given by

(a) $\frac{\square}{y}=\frac{2n-ds}{n-ds}\times\frac{ds}{3}$

(b) $\frac{\square}{y}=\frac{3n-2ds}{2n-ds}\times\frac{ds}{3}$

(c) $\frac{\square}{y}=\frac{n-ds}{2n-ds}\times\frac{ds}{3}$

(d) $\frac{\square}{y}=\frac{2n-ds}{3n-2ds}\times\frac{ds}{3}$

33. The moment of resistance of a T-beam where the neutral axis falls in the web is

(a) $\sigma_{\downarrow}cbc\times B\times d_{\downarrow}s\times(d-\square(/y))$

(b) $\sigma_{\downarrow}cbc\times B\times d_{\downarrow}s\times(d+\square(/y))$

(c) $\sigma_{\downarrow}cbc\times B\times d_{\downarrow}s\times(0.5d-\square(/y))$

(d) $\sigma_{\downarrow}cbc\times B\times d_{\downarrow}s\times(d+\square(/y))$

34. When a vertical member is carry by mainly axial loads, is called as

(a) Strut

(b) Column

(c) Tie

(d) All of these

35. Along column is one whose ratio of effective length to its least lateral dimension exceeds

(a) 5

(b) 10

(c) 12

(d) 20

36. The analysis of slab spanning in one direction is done by assuming it to be a beam of

(a) 1m length

(b) 1m width

(c) 1m

(d) None of these

37. The purpose of transverse reinforcement, in a slab is to

(a) Distribute the effect to f point load on the slab more evenly and uniformly

(b) Distribute the shrinkage and temp cracks more ever

(c) Keep the main reinforcement in position

(d) All of the above.

38. In a slab, the transverse reinforcement is provided at _____to the span of the slab

(a) 45^0

(b) 60^0
(c) 90^0
(d) 180^0

39. The distribution reinforcement is also called _____reinforcement.
    (a) Longitudinal
    (b) Transverse
    (c) Main
    (d) None of the these
40. The diameter of bars for main reinforcement in slabs, may be
    (a) 2 to 4mm
    (b) 4 to 8mm
    (c) 8 to 14mm
    (d) 14 to 18mm

ANSWER:

1(d),2(c),3(a),4(b),5(b),6(a),7(d),8(a),9(a),10(c),11(b),12(d),13(c),14(c),15(d),16(b),17(d),18(d),19(b),20(b),21(b),22(b),23(d),24(c),25(a),26(a),27(b),28(d),29(b),30(c),31(a),32(b),33(a),34(b),35(c),36(b),37(d),38(c),39(b),40(c)

TEST-6

Sub-R.C.C

Time :1hour
Total Marks-40
Name of the Student:-

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1. The pitch of bars of main reinforcement in slab should not exceed _____the effective depth of slab.
    (a) Double
    (b) Three times
    (c) Five times
    (d) Six times

2. If plain bars are used, the area of distribution reinforcement in slabs should not less than
   (a) 0.12% of the gross area f concrete
   (b) 0.15% of the gross area of concrete
   (c) 0.18% of the gross area of concrete
   (d) 0.20% of the gross area of concrete
3. If high yield strength deformed bars are used, the are of distribution reinforcement in slabs, should not less than.
   (a) 0.12% of the gross area of concrete
   (b) 0.15% of the gross area of concrete
   (c) 0.18% of the gross area of concrete
   (d) 0.20% of the gross area of concrete
4. The diameter of bars used for distribution reinforcement in slabs, may vary from
   (a) 2 to 4mm
   (b) 4 to 6mm
   (c) 6mm to 8mm
   (d) 8 to 12mm
5. If the maximum bending moment of a simply supported slab in M and moment of resistance factor is R, then the effective depth of slab (d) is given by
   (a) $d=\frac{M}{\sqrt{100R}}$
   (b) $d=\frac{\sqrt{M}}{100R}$
   (c) $d=\sqrt{\frac{M}{100R}}$
   (d) $d=\frac{M}{100R}$
6. in a simply supported slab, the pitch of distribution reinforcement should not be more than_____the effective depth of slab or 60cm which ever is smaller.
   (a) Double
   (b) Three times
   (c) Five times
   (d) Six times
7. The clear cover in a simply supported slab should not be less than the diameter of the reinforcing bar
   (a) Correct
   (b) Incorrect'
   (c) Not known
   (d) None of these

8. When a slab is continuous over several spans, negative (i.e. hogging) bending moment is induced over the
   (a) End supports
   (b) Intermediate supports
   (c) Both (a) & (b)
   (d) Non of the
9. The reinforcement in a continuous slab is provided
   (a) At the top of the slab portion over the intermediate supports.
   (b) At the bottom of the slab portion over the intermediate supports.
   (c) All the middle of the slab portion over the intermediate supports
   (d) All the above
10. For a slab continuous over two equal spars, the maximum bending moment near the centre of each span is taken as:
   (a) $-\frac{WL^2}{8}$
   (b) $+\frac{WL^2}{8}$
   (c) $-\frac{WL^2}{8}$
   (d) $+\frac{WL^2}{8}$
11. Find the correct statement from the followings.
   (a) For a cantilever slab, the ratio of span to overall depth should not 12.
   (b) One way slab which carry uniformly distributed load should be designed to resist a sagging bending moment near mid-span.
   (c) When the slab is built into a brick or masonry wall the slab should be designed to resist a hogging moment at the face of the support.
   (d) All of the above.
12. When the slab is supported on all the four edges and the ratio of long span to short span is small, bending takes place along both the spans, such a slab is known as
   (a) Slab spanning in one direction
   (b) One way slab.
   (c) Slab spanning in two direction.
   (d) Two-way slab.
13. A two way slab
   (a) May be simply supported on the four edges, with comers not held down and carrying uniformly distributed load.
   (b) May be simply supported on the four edge , with corners held down and carrying uniformly distributed load.
   (c) May have edges fixed or continuous and carrying uniformly distributed load.
   (d) All the above.
14. A slab simply supported on the four edges, with corners not held down and carrying uniformly distributed load, is used in

(a) Singly storeyed buildings.
(b) Double storeyed buildings.
(c) Multi storeyed buildings
(d) All the above

15. The reinforcement in the short span is placed_____the reinforcement in the long span.
    (a) Below
    (b) Above
    (c) Middle
    (d) None of these
16. The maximum bending moment and deflection for two way slab is much _____-____than that of a one wayslad.
    (a) Greater
    (b) Smaller
    (c) Equal
    (d) All of these
17. According to Grushoff-rankine theory for a two way slab
    (a) $\frac{W_x}{W_y} = \frac{L_y}{L_x}$
    (b) $\frac{W_x}{W_y} = \left(\frac{L_y}{L_x}\right)^3$
    (c) $\frac{W_x}{W_y} = \left[\frac{L_y}{L_x}\right]^2$
    (d) $\frac{W_x}{W_y} = \left(\frac{L_y}{L_x}\right)^4$
18. If the sides o a slab simply supported on its edges and spanning in two way are equal, then the maximum bending moment is multiplied by.
    (a) 0.25
    (b) 0.50
    (c) 0.75
    (d) 0.85
19. A reinforcing slab, build monolithically with the supporting columns and is reinforced in two or more directions, without any provision of beams is called a
    (a) Two way slab
    (b) Flat slab
    (c) Continus slab
    (d) Cireulashion
20. In a simply supported slab, alternate bars are curtailed at
    (a) $1/4^{th}$ of the span
    (b) $1/5^{th}$ of the span
    (c) $1/6^{th}$ of the span

(d) $1/7^{th}$ of the span

21. The floor slab of a building is supported on reinforced cement floor beams. The ratio of the end and intermediate span is kept.
    (a) 0.7
    (b) 0.8
    (c) 0.9
    (d) 0.6
22. The effective span of a simply supported slab is
    (a) Distance between the centers of the bearings
    (b) Clear distance between the inner faces of the walls plus twice he thickness of the slab.
    (c) Cleat spa plus effective depth of the slab.
    (d) All the above
23. The maximum ratio of span to depth of a slab simply supported and spanning in one direction is
    (a) 35
    (b) 25
    (c) 30
    (d) 20
24. The maximum ratio of span to depth of a slab simple supported and spanning in two directions, is
    (a) 25
    (b) 30
    (c) 35
    (d) 40
25. The maximum ratio of span to depth of a cantilever slab is
    (a) 8
    (b) 10
    (c) 12
    (d) 14
26. The amount of reinforcement for main bars in a slab, is based upon
    (a) Maximum bending moment
    (b) Minimum bending moment
    (c) Maximum shear force
    (d) Minimum shear force
27. The transverse reinforcements provided at right angles to the main reinforcement.
    (a) To distribute the load.
    (b) To resist the temp stresses
    (c) To resist the shrinkage stresses
    (d) All the above
28. The weight of reinforced concrete is generally take as
    (a) 2300 kg/m^3

(b) 2400 kg/m^3
(c) 2500kg/m^3
(d) 2800kg/m^3

29. If the permissible compressive stress for a concrete in bending is ckg/m^2, the modular ratio is
    (a) 2800/C
    (b) 2300/C
    (c) 2800/3C
    (d) 2800/4C
30. For a continuous slab supported at ends and carried over intermediate beams.
    (a) Max [3] sagging B.M for the end spans=$WL^2/10$
    (b) Max [3]hogging B.M. at support next of the end support=$-WL^2/10$
    (c) Max [3]sagging B.M for the interior span=$+WL^2/12$
    (d) Max [3]hogging B.M at other interior support=$-WL^2/12$
    (e) All the above

ANSWER:

1(b),2(b),3(a),4(c),5(c),6(c),7(a),8(b),9(a),10(d),11(d),12(c),13(d),14(a),15(a),16(b),17(d),18(b),19(b),20(d),21(c),22(c),23(c),24(c),25(c),26(a),27(d),28(d),29(d),30(e),