1. Gypsum is a
a) mechanically formed sedimentary rock
b) igneous rock
c) chemically precipitated sedimentary rock
d) metamorphic rock

Which of the following sedimentary rocks changes into quartzite by metamorphic action ?
a) sand stone
b) lime stone
c) shale
d) gypsum

Which of the following represents a metamorphic rock?
i) slate
ii) shale
iii) quartzite
The correct answer is
a) only (iii)
b) both (i) and (iii)
c) both (ii) and (iii)
d) all (i), (ii) and (iii)

Quartitze is a
a) silicious rock
b) argillaceous rock
c) calcareous rock
d) aqueous rock

Which of the following is a mineral ?
a) basalt
b) granite
c) quartz
d) syenite

6. Slate is formed by metamorphic action on
a) shale
b) lime stone
c) sand stone
d) granite

7. Sandstone is a
i) sedimentary rock
ii) aqueous rock
iii) silicious rock
The correct answer is
a) only (i)
b) both (i) and (ii)
c) both (i) and (iii)
d) all (i), (ii) and (iii)

8. Which of the following is a rock ?
a) quartz
b) mica
c) gypsum
d) none of the above

*9. Based on the following rocks and minerals, select the correct statement.
quartz, shale, basalt, granite, marble, gypsum, mica
a) basalt and marble are the only metamorphic rocks
b) there is no sedimentary rock

c) granite is the only igneous rock
d) quartz and mica are minerals

10. A heavy stone is suitable for
a) arches
b) rubble masonry
c) roads
d) retaining walls

11. The stone suitable for rubble masonry should be .
a) hard
b) tough
c) heavy
d) light

12. Which of the following metamorphic rocks has the most weather resisting characteristics?
a) marble
b) quartzite
c) slate
d) lime stone

13. A good building stone should not absorb water more than
a) 5%
b) 10%
c) 15%
d) 20%

14. Which of the following has more fire resisting characteristics ?
a) marble
b) lime stone
c) compact sand stone
d) granite

15. Jumper is a tool used for
a) testing of stones
b) quarrying of stones
c) dressing of stones
d) none of the above

16. The important test to be conducted on a stone used in docks and harbours is
a) hardness test
b) workability test
c) weight test
d) toughness test

17. The predominant constituent which is responsible for strength in granite is
a) quartz
b) felspar
c) mica
d) none of the above

18. Granite is not suitable for ordinary building purpose because
a) it can not be polished
b) it is not a fire proof material
c) it is costly
d) it has less crushing strength

19. Which of the following stone is best suited for construction of piers and abutments of a railway bridge ?
a) granite
b) sand stone
c) lime stone
d) quartzite

20. The preparation of surface of stone to obtain plain edges or to obtain stones of required size and shape is known as
a) quarrying of stones
b) blasting of stones
c) seasoning of stones
d) dressing of stones

21. Crushing strength of a good building stone should be more than
a) 50 MPa
b) 100 MPa
c) 150 MPa
d) 200 MPa [ES 98]

22. Specific gravity for most of the building stones lies between
a) 1.5 to 2.0
b) 2.0 to 2.5
c) 2.5 to 3.0
d) 3.0 to 3.5

23. Spalling hammer is used for
a) driving wooden headed chisels
b) rough dressing of stones
c) carving of stones
d) breaking small projection of stones

24. Cross cut saw is used for
a) cutting soft stones
b) cutting hard stones
c) cutting large blocks of stones
d) dressing stones

25. Sapwood consists of
a) innermost annular rings around the pith
b) portion of timber between heartwood and cambium layer
c) thin layers below the bark
d) thin fibre which extends from the pith outwards and holds the annular rings together

26. Which of the following trees yields hard wood ?
a) deodar
b) chir
c) shishum
d) pine

27. The radial splits which are wider on the outside of the log and narrower towards the pith are known as
a) heart shakes
b) cupshakes
c) starshakes
d) rindgalls [ES 99]

28. In which of the following pairs both trees yield soft wood?
a) deodar and shishum
b) chir and sal
c) sal and teak
d) chir and deodar

*29. Which of the following timbers is suitable for making sports goods ?
a) mulberry
b) mahogany
c) sal
d) deodar

30. **Assertion A :** Shishum is used for decorative woodwork.
Reason R : Shishum can be polished to an excellent finish.
Select your answer according to the coding system given below :
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

31. The disease of dry rot in timber is caused by
a) lack of ventilation
b) alternate wet and dry conditions
c) complete submergence in water
d) none of the above

32. Plywood has the advantage of
a) greater tensile strength in longer direction
b) greater tensile strength in shorter direction
c) same tensile strength in all directions
d) none of the above

33. In which of the following directions, the strength of timber is maximum ?
a) parallel to grains
b) 45° to grains
c) perpendicular to grains
d) same in all directions [ES 95,ES 2k]

34. The moisture content in a well seasoned timber is
a) 4% to 6%
b) 10% to 12%
c) 15% to 20%
d) 100% [ES 2k]

35. The trunk of tree left after cutting all the branches is known as
a) log
b) batten
c) plank
d) baulk

36. The age of a tree can be known by examining
a) cambium layer
b) annular rings
c) medullary rays
d) heart wood

37. Plywood is made by bonding together thin layers of wood in such a way that the angle between grains of any layer to grains of adjacent layers is
a) 0°
b) 30°
c) 45°
d) 90°

38. The plywood
a) has good strength along the panel only
b) can be spilt in the plane of the panel
c) has greater impact resistance to blows than ordinary wood
d) cannot be bent more easily than ordinary wood of same thickness

39. The practical limit of moisture content achieved in air drying of timber is
a) 5%
b) 15%
c) 25%
d) 35%

40. First class timber has an average life of
a) less than one year
b) 1 to 5 years
c) 5 to 10 years
d) more than 10 years

41. A first class brick when immersed in cold water for 24 hours should not absorb water more than
a) 15%
b) 20%
c) 22%
d) 25%

42. Crushing strength of a first class brick should not be less than
a) 3.5 N/mm^2
b) 7.0 N/mm^2
c) 10.5 N/mm^2
d) 14.0 N/mm^2

43. The main function of alumina in brick earth is
a) to impart plasticity
b) to make the brick durable
c) to prevent shrinkage
d) to make the brick impermeable

44. 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%

45. Excess of alumina in brick earth makes the brick
a) impermeable
b) brittle and weak
c) to lose cohesion
d) to crack and warp on drying

46. 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

47. 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%

48. Excess of silica in brick earth results in
a) cracking and warping of bricks
b) loss of cohesion
c) enhancing the impermeability of bricks
d) none of the above

49. Which of the following ingredients of the brick earth enables the brick to retain its shape ?
a) alumina
b) silica
c) iron
d) magnesia

50. Which of the following pairs gives a correct combination of the useful and harmful constituents respectively of a good brick earth ?
a) lime stone and alumina
b) silica and alkalies
c) alumina and iron
d) alkalies and magnesium

51. The process of mixing clay, water and other ingredients to make brick is known as
a) kneading
b) moulding
c) pugging
d) drying

52. Advantage of a clamp compared to a kiln for burning bricks is that
a) it takes less time for burning

b) it gives more output of first class bricks
c) it has less initial cost
d) it is suitable when bricks are required in large numbers

53. The internal size of mould used in brick preparation is
a) equal to the size of a fully burnt brick
b) smaller than the size of a fully burnt brick
c) greater than the size of a fully burnt brick
d) none of the above

4. Pug mill is used for
a) preparation of clay
b) moulding of clay
c) drying of bricks
d) burning of bricks

5. Which of the following bricks are used for lining of furnaces ?
a) overburnt bricks
b) underburnt bricks
c) refractory bricks
d) first class bricks

6. The frog of the brick in a brick masonry is generally kept on
a) bottom face
b) top face
c) shorter side
d) longer side

57. Number of bricks required for one cubic metre of brick masonry is
a) 400
b) 450
c) 500
d) 550 [ES 97]

58. Glazing is used to make earthenware
a) hard
b) soft
c) porous
d) impervious

59. Quick lime is
a) calcium carbonate
b) calcium oxide
c) calcium hydroxide
d) none of the above

60. Quick lime is
i) slow in setting
ii) rapid in slacking
iii) good in strength
The correct answer is
a) only (i)
b) only (ii)
c) both (i) and (ii)
d) both (ii) and (iii)

61. **Assertion A :** Pure lime takes a long time to develop adequate strength.
Reason R : Pure lime has slow hardening characteristics.
Select your answer according to the coding system given below :
a) Both A and R are true and R is correct explanation of A.
b) Both A and R are true and R is not a correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

62. Hydraulic lime is obtained by
a) burning of lime stone
b) burning of kankar
c) adding water to quick lime
d) calcination of pure clay

63. The main constituent which imparts hydraulicity to hydraulic lime is
a) calcium oxide
b) silica
c) clay
d) water

64. Study the following statements.
i) Hydraulic lime is suitable for white washing.
ii) Fat lime is suitable for whitewashing.
iii) Hydraulic lime is suitable for making mortar.
iv) Fat lime is suitable for making mortar.
The correct answer is
a) (i) and (iv)
b) (ii) and (iii)
c) (i) and (ii)
d) (iii) and (iv)

65. The main ingredients of Portland cement are
a) lime and silica
b) lime and alumina
c) silica and alumina
d) lime and iron

66. The constituent of cement which is responsible for all the undesirable properties of cement is
a) dicalcium silicate
b) tricalcium silicate
c) tricalcium aluminate
d) tetra calcium alumino ferrite

67. Le Chatelier's device is used for determining the
a) setting time of cement
b) soundness of cement
c) tensile strength of cement
d) compressive strength of cement

68. The main constituent of cement which is responsible for initial setting of cement is
a) dicalcium silicate
b) tricalcium silicate
c) tricalcium aluminate
d) all of the above

69. The initial setting time for ordinary Portland cement as per IS specifications should not be less than
a) 10 minutes
b) 30 minutes
c) 60 minutes
d) 600 minutes

70. As per IS specifications, the maximum final setting time for ordinary Portland cement should be
a) 30 minutes
b) 1 hour
c) 6 hours
d) 10 hours

*71. For testing compressive strength of cement, the size of cube used is
a) 50 mm
b) 70.6 mm
c) 100 mm
d) 150 mm

72. The normal consistency of ordinary Portland cement is about
a) 10%
b) 20%
c) 30%
d) 40%

73. Early attainment of strength in rapid hardening cement is mainly due to
a) gypsum
b) finer grinding
c) tricalcium silicate
d) tricalcium aluminate

74. After storage, the strength of cement
a) decreases
b) increases
c) remains same
d) may increase or decrease

75. According to IS specifications, the compressive strength of ordinary portland cement after three days should not be less than
a) 7 MPa
b) 11.5 MPa
c) 16 MPa
d) 21 MPa

76. Addition of pozzolana to ordinary Portland cement increases
a) bleeding
b) shrinkage
c) permeability
d) heat of hydration

77. Gypsum consists of
a) H_2S and CO_2
b) $CaSO_4$ and H_2O
c) Lime and H_2O
d) CO_2 and calcium

78. For testing compressive and tensile strength of cement, the cement mortar is made by mixing cement and standard sand in the proportions of
a) 1:2
b) 1:3
c) 1:4
d) 1:6

79. The slump recommended for mass concrete is about
a) 25 mm to 50 mm
b) 50 mm to 100 mm
c) 100 mm to 125 mm
d) 125 mm to 150 mm

80. With increase in moisture content, the bulking of sand
a) increases
b) decreases
c) first increases to a certain maximum value and then decreases
d) first decreases to a certain minimum value and then increases

81. Which of the following cements is suitable for use in massive concrete structures such as large dams ?
a) ordinary Portland cement
b) low heat cement
c) rapid hardening cement
d) sulphate resisting cement

82. Proper amount of entrained air in concrete results in
i) better workability
ii) better resistance to freezing and thawing
iii) lesser workability
iv) less resistance to freezing and thawing
The correct answer is
a) (i) and (ii)
b) (i) and (iv)
c) (ii) and (iii)
d) (iii) and (iv)

83. The most common admixture which is used to accelerate the initial set of concrete is
a) gypsum
b) calcium chloride
c) calcium carbonate
d) none of the above

84. The maximum quantity of calcium chloride used as an accelerator in cement in percentage by weight of cement is
a) 1
b) 2
c) 3
d) 4

85. The basic purpose of a retarder in concrete is
a) to increase the initial setting time of cement paste in concrete
b) to decrease the initial setting time of cement paste in concrete
c) to render the concrete more water tight
d) to improve the workability of concrete mix

86. Which of the following cements contains maximum percentage of dicalcium silicate?
a) ordinary Portland cement
b) low heat cement
c) rapid hardening cement
d) sulphate resisting cement

87. The most commonly used retarder in cement is
a) gypsum
b) calcium chloride
c) calcium carbonate
d) none of the above

88. Three basic raw materials which are needed in large quantities for production of steel are
a) iron ore, coal and sulphur
b) iron ore, carbon and sulphur
c) iron ore, coal and lime stone
d) iron ore, carbon and lime stone

89. Compared to mild steel, cast iron has
i) high compressive strength
ii) high tensile strength
iii) low compressive strength
iv) low tensile strength
The correct answer is
a) (i) and (ii)
b) (ii) and (iii)
c) (iii) and (iv)
d) (i) and (iv)

90. Which of the following gradients exerts maximum influence on properties of steel?
a) iron
b) carbon
c) manganese
d) sulphur

91. Which of the following is the purest form of iron ?
a) cast iron
b) wrought iron
c) mild steel
d) high carbon steel

92. The ultimate tensile strength of structural mild steel is about
a) 160N/mm^2
b) 260 N/mm^2
c) 420 N/mm^2
d) 520 N/mm^2

93. Percentage of carbon content in mild steel is
a) less than 0.25
b) between 0.25 and 0.7
c) between 0.7 and 1.5
d) greater than 1.5

94. Which of the following stresses is used for identifying the quality of structural steel ?
a) ultimate stress
b) yield stress
c) proof stress
d) none of the above

95. The ratio of the thickness of web to that of flange of steel rolled structural beams and channels is
a) less than 1
b) equal to 1
c) greater than 1
d) less than 1 in beams but greater than 1 in channels

96. Paints with white lead base are suitable for painting of
a) wood work
b) iron work
c) both wood work and iron work
d) none of the above

97. **Assertion A :** Paints with white lead base are not recommended for painting of iron works.
Reason R : Paints with white lead base do not check rusting of iron.
Select your answer according to the coding system given below :
a) Both A and R are true and, R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

98. The amount of water used for one kg of distemper is
a) 0.2 litre
b) 0.4 litre
c) 0.6 litre
d) 0.8 litre

*99. The vehicle used in case of enamel paints is usually
a) linseed oil
b) water
c) varnish
d) none of the above

*100. **Assertion A :** Normally turpentine oil is recommended as thinner for indoor painting.
Reason R : Turpentine oil is costlier than other thinners.
Select your answer according to the coding system given below :
a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

101. In brick masonry the bond produced by laying alternate headers and stretchers in each course is known as
a) English bond
b) double flemish bond
c) zigzag bond
d) single flemish bond

102. The stretcher bond in brick masonry can be used only when the thickness of wall is
a) 90 mm
b) 180 mm
c) 190 mm
d) 280 mm

103. The pressure acting on the stones in stone masonry construction should be
a) along the direction of bedding planes
b) at 45° to the direction of bedding planes

c) at 60° to the direction of bedding planes
d) perpendicular to the direction of bedding planes

104. Which of the following should be used for hearting of thicker walls ?
a) headers
b) stretchers
c) brick bats
d) queen closer

105. A queen closer is a
a) brick laid with its length parallel to the face or direction of wall
b) brick laid with its breadth parallel to the face or direction of wall
c) brick having the same length and depth as the other bricks but half the breadth
d) brick with half the width at one end and full width at the other

106. Minimum thickness of wall where single flemish bond can be used is
a) half brick thick
b) one brick thick
c) one and a half bricks thick
d) two bricks thick

107. The most important tool in brick laying for lifting and spreading mortar and for forming joints is
a) trowel
b) square
c) bolster
d) scutch

108. Expansion Joints in masonry walls are provided in wall lengths greater than
a) 10m
b) 20 m
c) 30 m
d) 40m

109. The type of bond provided in brick masonry for carrying heavy loads is
a) single flemish bond
b) double flemish bond
c) English bond
d) zigzag bond

110. A mortar joint in masonry which is normal to the face of wall is known as
a) bed joint
b) wall joint
c) cross joint
d) bonded joint

111. The slenderness ratio for masonry walls should not be more than
a) 10
b) 20
c) 30
d) 40 [ES 98]

112. The proportions of lime and sand in the mortar normally used in brick construction are
a) 1:2
b) 1:4
c) 1:6
d) 1:8

113. Number of vertical joints in a stretcher course is x times the number of joints in the header course, where x is equal to
a) 1/2
b) 1
c) 2
d) 1/4

114. As compared to stretcher course, the thickness of joints in header course should be
a) less
b) more
c) equal
d) equal or more

115. As compared to English bond, double flemish bond is
a) stronger
b) more compact
c) costly
d) none of the above

116. Single flemish bond consists of
a) double flemish bond facing and English bond backing in each course
b) English bond facing and double flemish bond backing in each course
c) stretcher bond facing and double flemish bond backing in each course
d) double flemish bond facing and header bond backing in each course

117. The differential settlement in case of foundations on sandy soils should not exceed
a) 25 mm
b) 40 mm
c) 65 mm
d) 100 mm

118. In case of foundations on black cotton soils, the most suitable method to increase the bearing capacity of soils is to
a) increase the depth of foundation
b) drain the soil
c) compact the soil
d) replace the poor soil

119. The type of footing which is used to transmit heavy loads through steel columns is
a) raft foundation
b) grillage foundation
c) well foundation
d) isolated footing

120. The maximum total settlement for isolated foundations on clayey soils should be limited to
a) 25 mm
b) 40 mm
c) 65 mm
d) 100 mm

121. The type of pile which is driven at an inclination to resist inclined forces is known as
a) friction pile
b) sheet pile
c) batter pile
d) anchor pile

122. The minimum depth of foundation in clayey soils is
a) 0.5 m
b) 0.7 m
c) 0.9 m
d) 1.2 m

123. The maximum total settlement for raft foundation on clayey soils should be limited to
a) 25 mm
b) 25 to 40 mm
c) 40 to 65 mm
d) 65 to 100 mm

124. The bearing capacity of a water logged soil can be improved by
a) compacting the soil
b) draining the soil
c) increasing the depth of foundation
d) grouting

125. The type of flooring suitable for use in churches, theatres, public libraries and other places where noiseless floor covering is desired is
a) cork flooring
b) glass flooring
c) wooden flooring
d) linoleum flooring

126. The vertical distance between the springing line and highest point of the inner curve of an arch is known as
a) intrados
b) rise
c) spandril
d) extrados

127. Depth or height of the arch is the
a) perpendicular distance between intrados and extrados
b) vertical distance between springing line and intrados
c) perpendicular distance between springing line and extrados
d) none of the above

128. The triangular space formed between the extrados and the horizontal line drawn through the crown of an arch is known as
a) haunch
b) spandril
c) voussoirs
d) skewbacks

129. The lintels are preferred to arches because
a) arches require more headroom to span the openings like doors, windows etc.
b) arches require strong abutments to withstand arch thrust
c) arches are difficult in construction
d) all of the above

130. In the construction of arches, sand box method is used for
a) centring
b) actual laying of arch work

c) striking of centring
d) none of the above

131. The type of arch generally constructed over a wooden lintel or over a flat arch for the purpose of carrying the load of the wall above is
a) segmental arch
b) pointed arch
c) relieving arch
d) flat arch

132. The type of joint commonly used at the junction of a principal rafter and tie beam in timber trussess is
a) mortise and tennon joint
b) oblique mortise and tennon joint
c) butt joint
d) mitred joint

133. The type of roof suitable in plains where rainfall is meagre and temperature is high is
a) pitched and sloping roof
b) flat roof
c) shell roof
d) none of the above

134. Pitched and sloping roofs are suitable for
a) coastal regions
b) plain regions
c) covering large areas
d) all of the above

135. The type of roof which slopes in two directions with a break in the slope on each side is known as
a) gable roof
b) hip roof
c) gambrel roof
d) mansard roof

136. Mansard roof is a roof which slopes in
a) two directions without break in the slope on each side
b) two directions with break in the slope on each side
c) four directions without break in the slope on each side
d) four directions with break in the slope on each side

137. The horizontal timber piece provided at the apex of a roof truss which supports the common rafter is called
a) ridge board
b) hip rafter
c) eaves board
d) valley rafter

138. The lower edge of the pitched roof, from where the rain water of the roof surface drops down, is known as
a) hip
b) gable
c) ridge
d) eaves

139. Higher pitch of the roof
i) results in stronger roof
ii) results in weaker roof
iii) requires more covering material
iv) requires less covering material
The correct answer is
a) (i) and (iii)
b) (i) and (iv)
c) (ii) and (iii)
d) (ii) and (iv)

140. Couple close roof is suitable for maximum span of
a) 2.5 m
b) 3.5 m
c) 4.5 m
d) 5.5 m

141. In a colar beam roof
a) there is no horizontal tie beam
b) there is a horizontal tie at the feet of rafters only
c) there is a horizontal tie at almost the middle of rafters only
d) there are two horizontal ties, one at the feet and other at the middle of the rafters

142. The function of king post in a king post roof truss is
a) to support the frame work of the roof
b) to receive the ends of principal rafter
c) to prevent the walls from spreading outward
d) to prevent the tie beam from sagging at its centre

143. The function of cleats in a roof truss is
a) to support the common rafter
b) to support purlins
c) to prevent the purlins from tilting
d) all of the above

144. The term string is used for
a) the underside of a stair
b) outer projecting edge of a tread
c) a sloping member which supports the steps in a stair
d) a vertical member between two treads

145. The vertical posts placed at the top and bottom ends of a flight supporting the hand rail are known as
a) balusters
b) newal posts
c) balustrades
d) railings

146. The maximum number of steps in a flight should generally be restricted to
a) 10
b) 12
c) 15
d) no limit

147. The number of steps in a flight generally should not be less than
a) 2
b) 3
c) 5
d) no limit

148. Sum of tread and rise must lie between
a) 300 to 350 mm
b) 400 to 450 mm
c) 500 to 550 mm
d) 600 to 650 mm

149. Minimum width of landing should be
a) equal to width of stairs
b) half the width of stairs
c) twice the width of stairs
d) one fourth the width of stairs

150. In any good staircase, the maximum and minimum pitch respectively should be
a) 90° and 0°
b) 75° and 30°
c) 60° and 10°
d) 40° and 25°

151. The height between two floors is 3.00 m and riser is 150 mm. Assuming two flights between the floors, the number of treads will be
a) 18
b) 19
c) 20
d) 21

152. Half turn stairs are the stairs which change their direction through
a) 90°
b) 180°
c) 270°
d) 360°

153. Doglegged stairs are
a) half turn stairs
b) quarter turn stairs
c) straight stairs
d) three quarter turn stairs

154. Nosing is the outer projecting edge of a
a) riser
b) tread
c) baluster
d) landing

155. The lower most horizontal piece of a shutter is known as
a) style
b) transom
c) sill
d) bottom rail

156. From the point of view of maximum day light, the windows in a room should be located on
a) eastern side
b) western side
c) northern side
d) southern side

157. In 10 DS 20, DS refers to
a) double shutter door
b) single shutter door
c) double shutter window
d) single shutter window

158. The designation of frames of doors, windows and ventilators shows their
i) width
ii) height
iii) type

The correct order in which they are shown in the designation of frames is
a) (i), (ii), (iii)
b) (i), (iii), (ii)
c) (ii), (i), (iii)
d) (iii), (i), (ii)

159. The minimum number of holdfasts recommended on each side of a door frame and a window frame respectively are
a) 2 and 1
b) 3 and 2
c) 2 and 2
d) 2 and 3

160. The horizontal projections at head and sill of a door frame which are embedded into the side walls for fixing the frame are known as
a) horns
b) holdfasts
c) jambs
d) rebates

161. The type of window provided on the sloping side of a pitched roof is called
a) dormer window
b) gable window
c) lantern
d) none of the above

162. As compared to top rail, the bottom and lock rails in a door frame are normally made
a) thinner
b) thicker
c) wider
d) narrower

163. The opening left in flat roofs for lighting purposes is called
a) lantern
b) dormer window
c) sky light
d) gable window

164. The suitable door for entrance in an air conditioned building is a
a) revolving door
b) louvered door
c) collapsible door
d) swinging door

165. Minimum elongation of steel for Fe250 and Fe415 respectively should be
a) 14.5% and 14.5%
b) 14.5 % and 23%
c) 23% and 14.5%
d) 23% and 23%

166. Match list I with List II and select the correct answer using the codes given below the lists :

	List I		List II
A.	wired glass	1.	Used for thermal Insulation
B.	fibre glass	2.	used in outside windows to resist fire and breakage
C.	ground glass	3.	used where light is to be admitted but vision is to be obscured

Codes :

a)	A	B	C
	1	2	3
b)	A	B	C
	2	3	1
c)	A	B	C
	3	1	2
d)	A	B	C
	2	1	3

167. Select the incorrect statement.
a) Cullet is a broken glass added to the batch prior to melting.
b) Glass is unaffected by hydrofluoric acid.
c) Lehr is a cooling oven in which completed articles of glassware are slowly cooled at a controlled rate.
d) None of the above

*168. Select the correct statement.
a) Thermoplastics undergo chemical change in the presence of heat.
b) Thermoplastic does not soften on heating.
c) both (a) and (b)
d) none of the above

169. Which of the following defect is caused by vapourization of entrapped moisture or solvents in a painted surface ?

a) saponification
b) blistering
c) blooming
d) cissing

170. Extenders are added to the paint body to
a) give colour
b) accelerate the process of drying
c) reduce the viscosity
d) increase the volume

171. Match list I with List II and select the correct answer using the codes given below the lists :

	List I		List II
A.	Pigment	1.	Turpentine
B.	Drier	2.	Iron oxide
C.	Thinner	3.	Zinc sulfate
D.	Extender	4.	Aluminium silicate

Codes :

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

172. Fibre saturation point of timber is the moisture content in % when
a) it is 12%
b) the cell walls are saturated with water and cells cavity contains no water
c) the cell walls are dried and cells cavity contains water
d) the cell walls are dried and cells cavity contains no water

173. Which of the following mortar is most suitable for construction work in water-logged areas ?
a) lime mortar
b) gauged mortar
c) cement mortar
d) mud mortar

174. After addition of cement, the gauged mortar should be used within
a) 30 minutes
b) 1-2 hours
c) 8-10 hours
d) 24 hours

175. Which of the following test is used to determine the rate of wear of stones ?
a) crushing test
b) abrasion test
c) attrition test
d) impact test

176. Match list I with List II and select the correct answer using the codes given below the lists :

	List I		List II
A.	Agricultural implements	1.	Jack
B.	Boat construction	2.	Deodar
C.	Railway sleepers	3.	Babul
D.	Musical Instruments	4.	Benteak

Codes :

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

[ES 93]

177. Which of the following pairs regarding the defects in timber are correctly matched?
1. Upsets ..... Due to over maturity and unventilated storage of wood
2. Foxiness .....Due to crushing of fibres running transversely
3. Star shakes .....Radial splits widest at the circumference and diminishing towards the centre
4. Heart shakes .....Cracks widest at the centre and diminishing towards the outer circumference

Select the correct answer using the codes given below.
Codes :
a) 1 and 2
b) 3 and 4

c) 1, 3 and 4
d) 2 and 4 [ES 93]

178. Which of the following pairs regarding explanations and the terminologies pertaining to masonry are correctly matched?
1. Reveal ..... Projecting stone to serve as support for joist
2. Throating .....Groove provided on the underside of projecting elements like sills
3. Gable .....Triangle shaped masonry work provided at the ends of sloped roof
4. Freeze ..... Vertical sides of finished openings for doors and windows

Select the correct answer using the codes given below.
Codes :
a) 1 and 2
b) 2 and 3
c) 3 and 4
d) 1 and 4 [ES 93]

179. What is efflorescence ?
a) Formation of white patches on the brick surface due to insoluble salts in the brick clay
b) Swelling of brick due to presence of carbonaceous matter and gas
c) Deformation of brick due to exposure to rain
d) Impurities in the brick clay which show after burning. [ES 93]

180. Match list I with List II and select the correct answer using the codes given below the lists :

List I (Laboratory Tests)		List II (Property)
A. Vicat apparatus	1.	Soundness of cement
B. Le-Chatelier apparatus	2.	Initial setting time of cement
C. Slump test	3.	Workability of cement concrete
D. Fineness modulus	4.	Relative size of aggregates

Codes :

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

[ES 93]

*181. For a given environment, the most significant factor that influences the total shrinkage of concrete is
a) cement content of mix
b) total amount of water added at the time of mixing
c) size of the member concreted
d) maximum size of the coarse aggregate used [ES 93]

182. As a construction material, plywood is preferred to thin planks of timber because of
a) good strength and dimensional stability in both lateral and longitudinal directions
b) good dimensional stability in both longitudinal and lateral directions
c) good strength in both longitudinal and lateral directions
d) savings in cost and environmental considerations. [ES 93]

183. The aggregate crushing value of coarse aggregates which is used for making concrete, which in turn is used for purposes other than wearing surfaces, should not exceed
a) 30%
b) 40%
c) 45%
d) 50% [ES 93]

184. Vanadium steel is normally used in the manufacture of
a) axles and springs
b) ball bearings
c) magnets
d) railway switches and crossings [ES 93]

25. The angle of intersection of the two plane mirrors of an optical square is
a) 30°
b) 45°
c) 60°
d) 90°

26. The allowable length of an offset depends upon the
a) degree of accuracy required
b) method of setting out the perpendiculars and nature of ground
c) scale of plotting
d) all of the above

27. Which of the following angles can be set out with the help of French cross staff?
a) 45° only
b) 90° only
c) either 45° or 90°
d) any angle

28. Which of the following methods of offsets involves less measurement on the ground?
a) method of perpendicular offsets
b) method of oblique offsets
c) method of ties
d) all involve equal measurement on the ground

29. The permissible error in chaining for measurement with chain on rough or hilly ground is
a) 1 in 100
b) 1 in 250
c) 1 in 500
d) 1 in 1000

30. The correction for sag is
a) always additive
b) always subtractive
c) always zero
d) sometimes additive and sometimes subtractive

31. Cross staff is an instrument used for
a) measuring approximate horizontal angles
b) setting out right angles
c) measuring bearings of the lines
d) none of the above

32. Normal tension is that pull which
a) is used at the time of standardising the tape
b) neutralizes the effect due to pull and sag
c) makes the correction due to sag equal to zero
d) makes the correction due to pull equal to zero

33. Which of the following is not used in measuring perpendicular offsets ?
a) line ranger
b) steel tape
c) optical square
d) cross staff

34. If the length of a chain is found to be short on testing, it can be adjusted by
a) straightening the links
b) removing one or more small circular rings
c) closing the joints of the rings if opened out
d) all of the above

35. The maximum tolerance in a 20 m chain is
a) ±2 mm
b) ±3 mm
c) ±5 mm
d) ±8 mm

36. For accurate work, the steel band should always be used in preference to chain because the steel band
a) is lighter than chain
b) is easier to handle
c) is practically inextensible and is not liable to kinks when in use
d) can be easily repaired in the field

37. The length of a chain is measured from
a) centre of one handle to centre of other handle
b) outside of one handle to outside of other handle
c) outside of one handle to inside of other handle
d) inside of one handle to inside of other handle

38. Select the incorrect statement.
a) The true meridians at different places are parallel to each other.
b) The true meridian at any place is not variable.

c) The true meridians converge to a point in northern and southern hemispheres.
d) The maps prepared by national survey departments of any country are based on true meridians.

39. If the true bearing of a line AB is 269° 30′, then the azimuth of the line AB is
a) 0° 30′
b) 89° 30′
c) 90° 30′
d) 269° 30′

40. In the prismatic compass
a) the magnetic needle moves with the box
b) the line of the sight does not move with the box
c) the magnetic needle and graduated circle do not move with the box
d) the graduated circle is fixed to the box and the magnetic needle always remains in the N-S direction

41. For a line AB
a) the forebearing of AB and back bearing of AB differ by 180°
b) the forebearing of AB and back bearing of BA differ by 180°
c) both (a) and (b) are correct.
d) none is correct

42. Local attraction in compass surveying may exist due to
a) incorrect levelling of the magnetic needle
b) loss of magnetism of the needle
c) friction of the needle at the pivot
d) presence of magnetic substances near the instrument

43. If the quadrantal bearing of a line is N 25° W, then the whole circle bearing of the line is
a) S 25° E
b) 205°
c) 335°
d) 295°

44. If the forebearing of a line AB is 35° and that of line BC 15°, then the included angle between the lines is
a) 20°
b) 50°
c) 160°
d) 230°

45. In the quadrantal bearing system, a whole circle bearing of 293° 30' can be expressed as
a) W 23° 30′ N
b) N 66° 30′ W
c) S 113° 30′ N
d) N 23° 30′ W

46. The prismatic compass and surveyor's compass
a) give whole circle bearing (WCB) of a line and quadrantal bearing (QB) of a line respectively
b) both give QB of a line and WCB of a line
c) both give QB of a line
d) both give WCB of a line

47. The horizontal angle between the true meridian and magnetic meridian at a place is called
a) azimuth
b) declination
c) local attraction
d) magnetic bearing

48. A negative declination shows that the magnetic meridian is to the
a) eastern side of the true meridian
b) western side of the true meridian
c) southern side of the true meridian
d) none of the above

49. If the magnetic bearing of the sun at a place at noon in southern hemisphere is 167°, the magnetic declination at that place is
a) 77° N
b) 23° S
c) 13° E
d) 13° W

50. The graduations in prismatic compass
i) are inverted
ii) are upright
iii) run clockwise having 0° at south
iv) run clockwise having 0° at north
The correct answer is
a) (i) and (iii)
b) (i) and (iv)
c) (ii) and (iii)
d) (ii) and (iv)

51. Agate cap is fitted with a
a) cross staff
b) level
c) chain
d) prismatic compass