DO NOT BREAK THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

QUESTION BOOKLET | SERIES I

Subjects : General English, Civil Engineering

BOOKLET SERIAL NO.	5037	Marks : 300
		Time : $2\frac{1}{2}$ hours

Read the following instructions carefully before you
begin to answer the questions.

INSTRUCTIONS TO CANDIDATES

1. This booklet contains **150 questions** to be answered in a separate OMR Answer Sheet using Black Ball Pen in following two parts:

    Part-A-General English : 50 questions, Part-B-Civil Engineering : 100 questions,

2. All Questions are compulsory.

3. You will be supplied the Answer sheet separately by the invigilator. You must complete the details of particulars asked for.

4. Answers must be shown by completely blackening the corresponding circles in the Answer Sheet against the relevant question number by Black Ball Pen. OMR Answer Sheet without marking series/ double series marking shall not be evaluated.

Example :

Supposing the following question is asked :-

The Capital of Meghalaya is-
A. Guwahati
B. Kohima
C. Shillong
D. Delhi

You will have four alternatives in the Answer Sheet for your response corresponding to each question of the Question Booklet as below :-

(A) (B) (C) (D)

In the above illustration, if your chosen response is alternative C i.e. Shillong, then the same should be marked on the Answer Sheet by blackening the relevant circle with a Black Ball Point Pen only as below :-

(A) (B) ● (D)

WHICH IS THE ONLY CORRECT METHOD OF ANSWERING

5. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any one question.

6. There will NOT be any negative marking for wrong answers.

7. The Answer Sheet must be handed over to the invigilator before you leave the Examination Hall.

8. No rough work is to be done on the Answer Sheet. Space for rough work has been provided in the question booklet.

Marks :100

Each question carries 2 marks :

SECTION-I

Directions : Read the following passage and answer the questions below, following the instructions :

When they first meet a stranger, women are reluctant to relinquish their reserve, fearing unknown dangers. But the trauma of imminent dangers had broken down her fences in a single blow, rendering preliminaries unnecessary. Some unknown divinity lacking patience, had brought the two of them face to face on a solitary mountain road, and fused their hearts together. The lightning flash of this sudden revelation would haunt them often at night, etching itself against the darkness. Like the flaming imprint of the sun and stars on the azure of the sky during some great cosmic collision, it left a deep impression within their consciousness.

Choose the appropriate antonyms of the following :

1. Reluctant
a) Interference   b) Divulge
c) Unenthusiastic   d) Unintelligible

2. Relinquish
a) Abdicate   b) Abjure
c) Abscond   d) Abstruse

3. Imminent
a) Remote   b) Reverent
c) Impediment   d) Impertinent

4. Revelation
a) Reticent   b) Information
c) Vouching   d) Veiling

5. Collision
a) Impact   b) Shock
c) Evasion   d) Concussion

Choose the appropriate synonyms of the following :

6. Preliminaries
a) Embarked   b) Adversaries
c) Groundwork   d) Mercenaries

7. Fused
a) Accumulate   b) Corporate
c) Enthused   d) Amalgamated

8. Etching
a) Engraving   b) Embalming
c) Exacting   d) Emerging

9. Imprint
a) Impress   b) Imprecise
c) Import   d) Impart

10. Azure
a) Mauve   b) Magenta
c) Lavender   d) Sapphire

SECTION-II

Directions : Choose the correct option to fill in the gaps where necessary :

11. This opinion is _____ wrong or right.
a) Either   b) Neither
c) Fully   d) Not

12. There has been a _____ among cricket enthusiasts to be glued to their television sets, setting aside other priorities.
a) Behaviour   b) Tendency
c) Habit   d) Inclination

13. Most people are too _____ in their own lives to care much about the agonies of others.
a) Absorbed   b) Concerned
c) Indulged   d) Entangled

14. People respect him because he _____ into practice whatever he preaches to others.
a) Turns   b) Realises
c) Converts   d) Transforms

15. On the _____ that he was the young child's guardian the kidnapper made off with the child.

a) Pretension   b) Deceit
c) Presumption   d) Pretext

16. The persevering effort of doctors and health workers is ____ .
a) Laudable   b) Laudatory
c) Complimentary   d) Complementary

17. Significant ____ imbibed in human beings mould their moral character.
a) Attitudes   b) Behaviours
c) Principles   d) Principals

18. This dictionary costs ____ .
a) Lesser   b) Dearly
c) Dearer   d) More

19. When you saw me at the airport this morning I was ____ a friend off.
a) Seeing   b) Checking
c) Leaving   d) Bidding

20. His ____ of how he rescued the cat from the bottom of the well was quite dramatic.
a) Story   b) Account
c) Narration   d) Tale

21. When everyone has taken ____ , the concert will begin.
a) His seats   b) A seat
c) Their seat   d) Their seats

22. Do you ____ play tennis ?
a) Often   b) Generally
c) Occasionally   d) Usually

23. You can rely ____ my discretion.
a) Upon   b) In
c) On   d) For

24. Most of the ____ in the library are empty.
a) Shelfs   b) Shelves
c) Cupboards   d) Cupboard

25. He did ____ he was told.
a) As   b) Like
c) Since   d) Because

26. He is as old as ____ .
a) Me   b) I
c) Him   d) She

27. The authorities do not discriminate ____ the rich and the poor.
a) With   b) Among
c) For   d) Between

28. ____ one - man tribunal was entrusted to arrive at a solution of the dispute.
a) A   b) An
c) The   d) No article

29. We came across a little bubbling stream; ____ stream flowed through a wooded valley.
a) A   b) An
c) The   d) No article

30. This is ____ historic occasion.
a) The   b) An
c) A   d) No article

SECTION-III

Directions : Choose the correct sentences:

31. (i) He is a firm believer of democratic principles.
(ii) He firmly believes in democratic principles.
(iii) He firmly belief in democratic principles.
a) (i) & (ii)   b) (i) & (iii)
c) (ii) & (iii)   d) (i), (ii) & (iii)

32. (i) The output of our factory has not been satisfactory.
(ii) The output of our factory was not satisfactory.
(iii) The output of our factory has not been satisfying.
a) (i) & (ii)   b) (i) & (iii)
c) (ii) & (iii)   d) (i), (ii) & (iii)

33. (i) On second thoughts the employees withdrew his resignation from his job.
(ii) On second thoughts the employee has withdrawn his resignation from his job.
(iii) On second thoughts the employee withdrew his resignation from his job.
a) (i) & (ii)   b) (i) & (iii)
c) (ii) & (iii)   d) (i), (ii) & (iii)

34. (i) The radio was the main source of entertainment before the television.
(ii) The radio was the main form of entertainment before the television.
(iii) The radio is the main form of entertainment before the television.

a) (i) & (ii)　　　　b) (i) & (iii)
c) (ii) & (iii)　　　d) (i), (ii) & (iii)

35. (i) We were unable to hold our meeting as three members do not make a quorum.
(ii) We are unable to hold our meeting as three members do not make a quorum.
(iii) We were unable to hold the meeting since three members do not make a quorum.
a) (i) & (ii)　　　　b) (i) & (iii)
c) (ii) & (iii)　　　d) (i), (ii) & (iii)

36. (i) He told his friends that he had decided to retire.
(ii) He told his friends of his decision to retire.
(iii) He told his friends of his retirement.
a) (i) & (ii)　　　　b) (i) & (iii)
c) (ii) & (iii)　　　d) (i), (ii) & (iii)

37. (i) The newly marketed jam was adulterated and found to contain harmful ingredients.
(ii) The newly marketed jam was adulterated and containing harmful ingredients.
(iii) The newly marketed jam was adulterated and contains harmful ingredients.
a) (i) & (ii)　　　　b) (i) & (iii)
c) (ii) & (iii)　　　d) (i), (ii) & (iii)

38. (i) He could not restrain from weeping, when he saw the pathetic sight.
(ii) He could not restrain from weeping, when he observed the pathetic sight.
(iii) He could not restrain oneself from weeping, when he saw the pathetic sight.
a) (i) & (ii)　　　　b) (i) & (iii)
c) (ii) & (iii)　　　d) (i), (ii) & (iii)

39. (i) Although a mild mannered man in private life, yet he was a dynamic leader in the eyes of the nation.
(ii) He was a mild mannered man in private life, but was a dynamic leader in the eyes of the nation.
(iii) Although a mild mannered man in private life he was a dynamic leader in the eyes of the nation.
a) (i) & (ii)　　　　b) (i) & (iii)
c) (ii) & (iii)　　　d) (i), (ii) & (iii)

40. (i) Except for the roses, which are foreign, all other plants in my garden are indigenous.
(ii) Except for the roses, which are foreign, all other plants in the garden are indigenous.
(iii) Except for the roses, which are foreign, all other plants in the garden is indigenous.
a) (i) & (ii)　　　　b) (i) & (iii)
c) (ii) & (iii)　　　d) (i), (ii) & (iii)

SECTION-IV

Directions : Choose the correct meaning for the words given below :

41. Recuperate
a) To recover from illness
b) To find a lost article
c) To change for the worse
d) To strike back

42. Reciprocate
a) To make a long story short
b) To return in good measure
c) One who has to endure cruelty
d) To give and receive mutually

43. Tempestuous
a) To persuade someone about something
b) To ask a lot questions without caring to listen to the answer
c) Full of extreme emotions and excitement
d) To be quick to answer any forthcoming question

44. Extradite
a) To spend lavishly
b) To hand over to foreign authority
c) To contradict a given order
d) To go back on one's promise

45. Disparage
a) To consider someone as superior
b) To quarrel without a cause
c) To exaggerate
d) To belittle

46. Luxuriate
a) The enjoyment of special and expensive things
b) To relax while enjoying something pleasant
c) To enjoy the simple things of life
d) To move away from expensive things to simpler things

47. Extemporize
a) To speak without preparation
b) To work without pay
c) To give a brief speech

d) To expose someone's misdeeds

48. Emulate
a) To try to equal or excel
b) To approve of something officially
c) To set free from slavery and unfair control
d) To be very pleased with oneself

49. Exonerate
a) To become closer to somebody with the passage of time
b) Branches of a tree that spreads widely
c) To officially state that one is not responsible for something they have been blamed
d) To remove dead cells from the surface of the skin

50. Reminisce
a) To think about the future
b) To talk about the past
c) To waste time
d) To talk fondly of someone

PART - B - CIVIL ENGINEERING

Marks : 200

Each question carries 2 marks :

51. Quartz sand is
a) Monomineralic rock
b) Polymineralic rock
c) Sedimentary rock
d) Calcareous rock

52. The compressive strength of stone is determined by
a) Crushing test
b) Hardness test
c) Impact test
d) Smith's test

53. Stones having toughness index
a) Below 19 are treated not tough stones
b) Between 13 and 19 are treated moderately tough
c) More than 13 are said to be highly tough
d) None of the above

54. The percentage absorption of water of good stones by weight after 24 hours should not exceed-
a) 0.5
b) 0.6
c) 0.7
d) 0.8

55. The process of taking out stones under the ground at great depth is called
a) Quarrying
b) Mining
c) Both (a) & (b)
d) Neither (a) nor (b)

56. Which one of the following sequence of steps is correct for preparing the clay for making bricks?
a) Weathering - Blending - Tempering
b) Blending - Tempering - Weathering
c) Tempering - Weathering - Blending
d) None of the above

57. When sufficient quantity of water is added to quick lime-
a) It cracks
b) It swells
c) It becomes powder
d) All of the above

58. The rate of burning of a good gun powder fuses is roughly
a) 1 cm per second
b) 2 cm per second
c) 1 cm per minute
d) 2 cm per minute

59. The quickest ingredient to react when water is added to cement is
a) Tri calcium aluminate
b) Tetra-Calcium-Alumino ferrite
c) Tri calcium silicate
d) Dicalcium silicate

60. The distance between the two readings of the Le-Chatelier apparatus should not exceed
a) 4mm
b) 5mm
c) 7.5mm
d) 10mm

61. To preserve timber from white ants, which one of the following is most suitable ?
a) ASCU treatment
b) Coal tar treatment
c) Creosote oil
d) Solignum paints

62. Which one of the following is concordant intrusive rocks ?
a) Laccoliths
b) Dykes
c) Volcanic necks
d) Batholiths

63. Which of the following rocks does not belong to siliceous minerals ?
a) Feldspar
b) Quartz
c) Corundum
d) Olivine

64. Alluvial soils are susceptible to
a) Erosion
b) Deposition
c) Both (a) & (b)
d) Neither (a) nor (b)

65. A graded river
a) Causes erosion by itself
b) Causes siltng in it
c) Has the profile of equilibrium
d) All of the above

66. Round and closed contours with increasing values towards the centre indicate
a) A hill
b) A saddle
c) A depression
d) None of the above

67. The maximum bearing capacity of soil is that of
a) Black cotton soil
b) Dry coarse sandy soil
c) Soft clay soil
d) Hard rocks

68. Depth of lean, concrete bed placed at the bottom of a wall footing, is kept
a) 10cm
b) 150mm
c) Equal to its projection beyond wall base
d) Less than its projection beyond wall base

69. In grillage foundation a minimum cover of 15cm is provided on
a) Upper flange of top tier
b) Lower beam of lower tier
c) Ends of external beam
d) None of the above

70. Black cotton soil is unsuitable for foundation because its
a) Bearing capacity is low
b) Permeability is uncertain
c) Property to undergo a volumetric charge due to variation of moisture contant
d) All of the above

71. To support a heavy structure in sandy soil, the type of foundation generally used is
a) Combined footing   b) Raft footing
c) Pier footing   d) Strap footing

72. The pile which is provided with a bulb filled with concrete at its lower end is known as
a) Simplex pile   b) Mac-Arthur pile
c) Raymond pile   d) Franki pile

73. The depth of excavation of foundation is generally measured with a
a) Ranging rod   b) Steel tape
c) Levelling staff   d) Boning rod

74. The bearing capacity of water logged soil may be improved by
a) Grouting   b) Chemical action
c) Drainage   d) Compaction

75. The single stage well point system of dewatering an excavation can be used if the depth of excavation does not exceed
a) 5m   b) 10m
c) 15m   d) 25m

76. For construction of flyovers in sandy soil, the type of foundation provided is
a) Strap footing   b) Raft footing
c) Combined footing   d) Pier footing

77. The additional piles which are driven to increase the capacity of supporting loads on vertical piles, are known as
a) Construction piles   b) Raking piles
c) Eccentric piles   d) Sinking piles

78. A covering of concrete placed on the exposed top of an external wall is known as
a) Cornice   b) Coping
c) Frieze   d) Lintal

79. The exterior angle between outer faces of a wall is known as
a) Turn   b) Junction
c) Quoin   d) All of the above

80. A wall constructed to resist the pressure of an earth filling is called
a) Retaining wall   b) Breast wall
c) Buttress   d) Parapet wall

81. The wedge shaped bricks forming an arch ring, are called -
a) Soffits   b) Voussoirs
c) Haunchs   d) Spandrils

82. A pointed arch which forms isosceles or equilateral triangle is generally known as
a) Three centred arch   b) Two centred arch
c) Lancet arch   d) Bull's eye arch

83. The triangular portion between any two adjacent arches and the tangent to their crowns is
a) Haunch   b) Spandril
c) Soffit   d) Rise

84. The inclined surface of an abutment to receive the arch is known as
a) Skew back   b) Soffit
c) Spandril   d) Haunch

85. The projections of head or sill of a door or window frame are
a) Transoms   b) Horns
c) Stops   d) Checks

86. A cut in frame of a door to receive the shutter is called
a) Louver   b) Stop
c) Horn   d) Rebate

87. The vertical faces of a door opening which support frame of the door are called

a) Jambs   b) Posts
c) Reveals   d) Styles

88. A wooden block fixed on back side of a door frame on its post is known as
a) Cleat   b) Stop
c) Horn   d) None of these

89. Pick up the incorrect statement from the following -
a) In dog-legged stairs, no space between its flights is provided
b) In open newel stair, a rectangular well is provided
c) In geometrical stair, a curved shaped well between the forward and backward flights is provided
d) In geometrical stair, two quarter space landing is provided

90. The main principle of surveying is to work
a) From part to whole
b) From whole to part
c) From higher level to lower level
d) From lower level to higher level

91. On a diagonal scale, it is possible to read up to
a) One dimension   b) Two dimensions
c) Three dimensions   d) Four dimensions

92. It is more difficult to obtain good results while measuring horizontal distance by stepping
a) Up hill   b) Down hill
c) In low undulation   d) In plane areas

93. The slope correction for a length of 30m along a gradient of 1 in 20 is
a) 3.75 cm   b) 0.375 cm
c) 37.5 cm   d) 375 cm

94. If h is the difference in height between end points of a chain of length l, the required slope correction is

a) $\dfrac{h^2}{2l}$ b) $\dfrac{h}{2l}$

c) $\dfrac{h^2}{l}$ d) $\dfrac{h^2}{4l}$

95. Check lines (or proof lines) in chain surveying are essentially required

a) To plot the chain lines
b) To plot the offsets
c) To indicate the accuracy of the survey work
d) To increase the out-turn

96. A well conditioned triangle has no angle less than
a) 20^0 b) 30^0
c) 45^0 d) 60^0

97. The accuracy of measurement in chain surveying does not depend upon
a) Length of the offset
b) Method of setting out perpendiculars
c) Scale of plotting
d) Indefinite features to be surveyed

98. Chain surveying is well adopted for
a) Small areas in open ground
b) Small areas with crowded details
c) Large areas with simple details
d) Large areas with difficult details

99. An angle of 45^0 with a chain line may be set out with
a) Optical square   b) Open cross staff
c) French cross staff   d) Prismatic square

100. The line normal to the plumb line is known as
a) Horizontal line   b) Level line
c) Datum line   d) Vertical line

101. The back staff reading on a BM of RL 500.000 m is 2.685 m. If foresight reading on a point is 1.345 m, the reduced level of the point is
a) 502.685m   b) 501.345m
c) 501.340m   d) 504.030m

102. In reciprocal levelling, the error which is not completely eliminated is due to
a) Earth's curvature
b) Non-adjustment of line of collimation
c) Refraction
d) Non-adjustment of bubble tube

103. Contour interval, within the limits of a map
a) May be kept constant
b) May not be kept constant
c) Must be kept constant
d) May vary according to the configuration

104. Straight, parallel and widely spaced con-

tours represent
a) Steep surface
b) Flat surface
c) Inclined plane surface
d) Curved surface

105. The angle of intersection of a contour and a ridge line is
a) 30^0
b) 45^0
c) 60^0
d) 90^0

106. The 'fix' of a plane table station with three known points is bad if the plane table station lies
a) In the great triangle
b) Outside the great triangle
c) On the circumference of the circumscribing circle
d) None of these

107. To orient a plane table at a point with two inaccessible points, the method generally adopted is
a) Intersection
b) Resection
c) Radiation
d) Two point problem

108. The smaller horizontal angle between the true meridian and a survey line is known as
a) Declination
b) Bearing
c) Azimuth
d) Dip

109. The forces which meet at one point and have their line of action in different planes are called
a) Coplanar non-concurrent forces
b) Non coplanar concurrent forces
c) Non coplanar non-concurrent forces
d) Intersecting forces

110. A heavy ladder resting on a floor and against a vertical wall may not be in equilibrium, if
a) Floor is smooth and the wall is rough
b) Floor is rough and the wall is smooth
c) Floor and wall are smooth surfaces
d) Floor and wall both are rough surfaces

111. If two forces of 3 kg and 4 kg act at right angles to each other, their resultant force will be
a) 7 kg
b) 1 kg
c) 5 kg
d) 10 kg

112. The centre of gravity of a quadrant of a circle lies along its central radius at a distance
a) 0.3 R
b) 0.4 R
c) 0.5 R
d) 0.6 R

113. Moment of inertia of a square of side b about an axis through its centre of gravity is

a) $\dfrac{b^3}{4}$
b) $\dfrac{b^4}{12}$

c) $\dfrac{b^4}{3}$
d) $\dfrac{b^4}{8}$

114. The maximum frictional force which comes into play, when a body just begins to slide over the surface of another body is known as
a) Sliding friction
b) Rolling friction
c) Limiting friction
d) None of the above

115. The path traced by a projectile in the sky is
a) Circular
b) Parabolic
c) Elliptical
d) Catenary

116. Time of flight of a projectile on a horizontal plane is

a) $\dfrac{2u \sin \alpha}{g}$
b) $\dfrac{2u \cos \alpha}{g}$

c) $\dfrac{2u \tan \alpha}{g}$
d) $\dfrac{2u \cot \alpha}{g}$

117. A projectile is fired at an angle θ to the vertical. Its horizontal range will be maximum when θ is
a) 0^0
b) 30^0
c) 45^0
d) 60^0

118. One half of a vibration of a body is called
a) Period time
b) Oscillation
c) Beat
d) Amplitude

119. For a body moving with simple harmonic motion, the number of cycles per second is known as its
a) Oscillation
b) Amplitude
c) Frequency
d) Periodic time

120. In simple harmonic motion, acceleration of a particle is proportional to
a) Rate of change of velocity
b) Displacement
c) Velocity
d) Direction

121. The motion of a bicycle wheel is
a) Translatory
b) Rotary

c) Rotary and translatory d) Curvilinear

122. A satellite moves in its orbit around the earth due to
a) Gravitational force b) Centripetal force
c) Centrifugal force d) None of the above

123. The unit of force in C.G.S system of units is called
a) Dyne b) Newton
c) Kg d) All of the above

124. If the gravitational acceleration at any place is doubled, the weight of a body will
a) Be reduced to half b) Be doubled
c) Not be affected d) None of these

125. The tension in a cable supporting a lift
a) Is more when the lift is moving downwards
b) Is less when the lift is moving upwards
c) Remains constant
d) Is less when the lift is moving downwards

126. The rate of change of displacement of a body with respect to its surroundings is
a) Velocity b) Acceleration
c) Speed d) All of the above

127. When a body falls freely under gravitational force it possesses
a) Maximum weight
b) Minimum weight
c) No weight
d) No effect on its weight

128. The property of a material by which it can be drawn to a smaller section, due to tension is called
a) Plasticity b) Ductility
c) Elasticity d) Malleability

129. As the elastic limit reaches, tensile strain
a) Increases more rapidly
b) Decreases more rapidly
c) Increases in proportion to the stress
d) Decreases in proportion to the stress

130. Every material obeys the Hooke's law within its
a) Elastic limit
b) Plastic point
c) Limit of proportionality
d) None of these

131. The materials which have the same elastic properties in all directions are called
a) Isotropic b) Brittle
c) Homogeneous d) Hard

132. If the stress produced by a prismatic bar is equal to the working stress, the area of the cross-section of the prismatic bar becomes
a) Zero b) Infinite
c) Maximum d) Minimum

133. When two plates butt together and are riveted with two cover plates with two rows of rivets, the joint is known as
a) Lap joint
b) Butt joint
c) Single riveted single cover butt joint
d) Double riveted double cover butt joint

134. The distance between the centres of adjacent rivets in the same row is called
a) Pitch b) Lap
c) Gauge d) Staggered pitch

135. According to Unwin's formula, the diameter d of rivet of plate of thickness 't' is
a) $d = 6.05 \sqrt{t}$ b) $d = 1.5t + 4$
c) $d = \sqrt{5} t$ d) $d = \sqrt{5} + 1.5$

136. The minimum number of rivets for the connection of a gusset plate is
a) 1 b) 2
c) 3 d) 4

137. The weakest section of a diamond riveting is the section which passes through
a) First row b) Second row
c) Central row d) One rivet hole of end row

138. The maximum resistance against rotation is offered by the weld at a point
a) Most distant b) Least distant
c) At either end d) Centrally located

139. The shape of the bending moment diagram over the length of a beam, having no external load, is always
a) Linear b) Parabolic
c) Cubical d) Circular

140. For a simply supported beam with a cen-

tral load, the bending moment is
a) Least at the centre
b) Least at the supports
c) Maximum at the supports
d) Maximum at the centre

141. The bending moment is maximum on a section where shearing force is
a) Maximum   b) Minimum
c) Equal   d) Changing sign

142. The ratio of the volume of voids to the total volume of the given soil mass is
a) Porosity   b) Specific gravity
c) Void ratio   d) Water content

143. Degree of saturation of a natural soil deposit having water content 15%, specific gravity 2.5 and void ratio 0.50, is
a) 50%   b) 60%
c) 75%   d) 80%

144. A soil has bulk density 2.3 g/cm³ and water content 15%, the dry density of the sample is
a) 1.0 g/cm²   b) 1.5 g/cm³
c) 2.0 g/cm³   d) 2.5 g/cm³

145. The ratio of longitudinal stress to strain within elastic limit is known as
a) Modulus of elasticity
b) Shear modulus of elasticity
c) Bulk modulus of elasticity
d) Tangent modulus of elasticity

146. Poisson's ratio for steel within elastic limit ranges from
a) 0.15 to 0.200   b) 0.20 to 0.24
c) 0.25 to 0.33   d) 0.33 to 0.35

147. Web crippling generally occurs at the point where
a) Bending moment is maximum
b) Shearing force is minimum
c) Concentrated loads act
d) Deflection is maximum

148. Distribution of shear intensity over a rectangular section of a beam, follows
a) Circular curve   b) A straight line
c) Parabolic curve d) Elliptical curve

149. Spacing of stirrups in a rectangular beam is

a) Kept constant throughout the length
b) Decreased towards the centre of beam
c) Increased at the ends
d) Increased at the centre of the beam

150. The ratio of the breadth to effective depth of a beam is kept
a) 0.25   b) 0.50
c) 0.70   d) 0.75

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