



Series

D**CODE : CEM-3/21**

Write here Roll Number and Answer Sheet No.

Question Booklet Sl. No.

Roll No.

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Answer Sheet No.

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Duration : 3 Hours

Total Marks : 300

Declaration by Invigilator :

I Certify that I have checked that the Roll Number and the Answer Sheet Number written by the Candidate on the question paper and the OMR Sheet are correct and the Answer Sheet Number matches the Question Booklet Number exactly.

Signature of the Invigilator with Name

Declaration by Candidate :

I undertake not to employ any unfair means in this exam. I have checked the Question Booklet Number and the Answer Sheet Number and both are identical and have been correctly entered by me wherever indicated.

Signature of the Candidate with Name

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

IMPORTANT INSTRUCTIONS TO CANDIDATES

- The Roll No. is a 7 digit No., the candidate needs to circle the Roll No. in the Answer Sheet.
- The appropriate Circle should be shaded for Roll No. This should be done carefully because only the shaded circles are scanned.
- Valuation of Answer Sheet will be done on the computer. Candidate should not make any stray marks on the Answer Sheet, tamper with or mutilate it. Otherwise it will not be evaluated.
- Please check all the pages of the Booklet carefully. In case of any defect, please ask the Invigilator for replacement of the Booklet.
- You must not tear off or remove any sheet from this Booklet. The Answer Sheet must be handed over to the Invigilator before you leave the Examination Hall.
- All questions are compulsory and each Question carries 2 marks.
- The paper carries negative markings. For each wrong answer 0.50 mark will be deducted.**
- This Booklet contains 150 questions. Candidates must note that there will be 4 Sections in the question paper :

Sections	Test Components	No. of Questions	Page No.
A	General English	1-50	5-10
B	Elementary Mathematics	51-75	11-13
C	General Knowledge	76-100	14-16
D	Optional Subject	101-150	17-2

- Use of Calculator/Palmtop/Laptop/Other Digital Instrument/Mobile/Cell Phone/Pager is **not** allowed.
- Candidates found guilty of misconduct/using unfair means in the Examination Hall will be liable for appropriate penal/legal action.
- No Rough Work is to be done on the Answer Sheet and only single OMR Answer Sheet will be provided.**
- This booklet contains **24** pages.
- Directions :** Each question or incomplete statement is followed by four alternative suggested answers or completions. In each case, you are required to select the one that correctly answers the question or completes the statement and blacken (●) appropriate circle a, b, c or d by Blue / Black Ball-Point Pen provided by the board against the question concerned in the Answer Sheet.
- Mark your answer by shading the appropriate circle against each question. The circle should be shaded completely without leaving any space. The correct method of shading is given below.

Wrong Method	Wrong Method	Wrong Method	Correct Method
☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐

The Candidate must mark his/her response after careful consideration, as it is not possible to change the response once it is marked.

- There is only one correct answer to each question. You should blacken (●) the circle of the appropriate column, viz., a, b, c or d. If you blacken (●) more than one circle against any one question, the answer will be treated as wrong.
- Use the space for rough work given at the beginning of the Question Booklet only and not on the Answer Sheet.
- You are NOT required to mark your answers in this Booklet. All answers must be indicated in the Answer Sheet only.**



DO NOT WRITE HERE



SPACE FOR ROUGH WORK



SPACE FOR ROUGH WORK



SECTION – A
(General English)

(Q. No. 1 – 12) : Fill in the blanks with the correct word or group of words from the alternatives given below each sentence.

1. There is not _____ tea in the pot.
(a) many (b) few (c) a few (d) much
2. There was _____ food in the house.
(a) little (b) few (c) a few (d) many
3. Manihar lives in the _____ house.
(a) nearest (b) next (c) further (d) later
4. Bombay is _____ from Delhi than Calcutta.
(a) further (b) latter (c) farther (d) farthest
5. He _____ the bird but he missed.
(a) shot (b) shot down (c) shot at (d) shot up
6. He tried to _____ smoking, but did not succeed.
(a) put out (b) give up (c) do away (d) get away
7. The pilot had been warned about the storm before he _____.
(a) took up (b) took away
(c) took off (d) took over
8. In the fierce attack, the enemies were completely wiped _____.
(a) out (b) off (c) away (d) over
9. I have been ill _____ last Sunday.
(a) for (b) since (c) from (d) by



10. That rule is applicable _____ everyone.
(a) with (b) for (c) to (d) on
11. He is being accused _____ the theft.
(a) to (b) for (c) of (d) about
12. She came _____ with me to see the circus.
(a) along (b) off (c) after (d) across

(Q. No. 13 – 17) : Fill in the blanks with suitable question tags from the alternatives given below them.

13. She is not a clever girl, _____ ?
(a) isn't she (b) is she
(c) was she (d) none of these
14. The examination is over, _____ ?
(a) isn't it (b) is it (c) ain't it (d) does it
15. There are no good hotels here, _____ ?
(a) isn't it (b) is there (c) are there (d) aren't there
16. We hadn't much time, _____ ?
(a) hadn't we (b) have we
(c) haven't we (d) had we
17. Kamala needs help, _____ ?
(a) does she (b) doesn't she
(c) won't she (d) will she

Give one word substitutes for the following :

18. Life history of a man written by himself.
(a) biography (b) autobiography
(c) calligraphy (d) bibliography



(Q. No. 19 – 22) : In each of the following questions, out of the given group of words, choose the mis-spelt one.

19. (a) Familiar (b) Simmer (c) Hammer (d) Grammer
20. a) Projection (b) Educate (c) Curve (d) Headquarters
21. (a) Mischeif (b) Belief (c) Thief (d) Grief
22. (a) Procession (b) Profession (c) Possession (d) Occassion

(Q. No. 23 – 26) : In the following questions, out of the four alternatives, choose the one which can be substituted for the given words/phrase.

23. The animals of a particular region.
(a) Flora (b) Museum (c) Zoo (d) Fauna
24. A body of persons appointed to hear evidence and give their verdict in trials.
(a) Association (b) Council
(c) Bar (d) Jury
25. Stories of old time gods or heroes.
(a) Odes (b) Epics (c) Allegories (d) Legends
26. A doctor who treats children and infants.
(a) Dermatologist (b) Gynaecologist
(c) Podiatrist (d) Paediatrician

(Q. No. 27 – 30) : Fill in the blanks in the following sentences with suitable modal auxiliaries.

27. I _____ be eighteen next Monday.
(a) shall (b) should (c) can (d) might



28. I _____ do it, whatever happens.
(a) can (b) will
(c) shall (d) may
29. _____ you speak French ?
(a) Shall (b) Must
(c) Might (d) an
30. _____ you prosper in all that you do !
(a) Might (b) Shall (c) Would (d) May

(Q. No. 31 – 35) : Fill in the blanks in the following sentences with the correct forms of the words given in brackets.

31. The new dancing _____ was greeted with a thunderous applause by the audience. (sensational)
(a) sensation (b) sensational
(c) sensory (d) sensationary
32. For three days he slept and did _____ nothing. (absolute)
(a) absolute (b) absolutist
(c) absolutely (d) absolutise
33. The stranger looked around _____ (curious)
(a) curious (b) curiosity (c) curiousness (d) curiously
34. The businessman went on _____ till he became bankrupt. (speculation)
(a) Speculate (b) Speculation
(c) Speculating (d) Speculator
35. All the _____ have been completed. (arrange)
(a) arrange (b) arranged
(c) arrangements (d) arrangeable



(Q. No. 36 – 37) : Choose the correct synonyms of the words underlined from the alternatives given below them :

36. Making a fuss over simple tasks doesn't really help.

- | | |
|-----------------------|---------------|
| (a) Unnecessary worry | (b) Noise |
| (c) Joke | (d) Complaint |

37. The adorned Christmas tree was the centre of attraction in the Church.

- | | |
|-----------------|---------------|
| (a) Spectacular | (b) Bare |
| (c) White | (d) Decorated |

(Q. No. 38 – 41) : Pick up the correct synonym for each of the following words.

38. FAITH

- | | | | |
|-----------|----------|------------|-----------|
| (a) Proof | (b) Fame | (c) Repose | (d) Trust |
|-----------|----------|------------|-----------|

39. TRIUMPH

- | | | | |
|---------|----------------|----------|-------------|
| (a) Joy | (b) Excitement | (c) Gain | (d) Victory |
|---------|----------------|----------|-------------|

40. PREDICT

- | | | | |
|-------------|--------------|------------|-------------|
| (a) Explain | (b) Foretell | (c) Assert | (d) Observe |
|-------------|--------------|------------|-------------|

41. CONCISE

- | | |
|------------|-------------------|
| (a) Strong | (b) Solid |
| (c) Brief | (d) None of these |

(Q. No. 42 – 46) : Identify the types/kinds of sentence in the following sentences from the alternatives given below them.

42. How cold this water is !

- | | |
|--------------------------|----------------------------|
| (a) Exclamatory sentence | (b) Assertive sentence |
| (c) Imperative sentence | (d) Interrogative sentence |



43. Be careful.
(a) Declarative sentence (b) Imperative sentence
(c) Interrogative sentence (d) Exclamatory sentence
44. Please open the window.
(a) Assertive sentence (b) Exclamatory sentence
(c) Interrogative sentence (d) Imperative sentence
45. What is your name ?
(a) Declarative sentence (b) Interrogative sentence
(c) Exclamatory sentence (d) Imperative sentence
46. She is a good athlete.
(a) Imperative sentence (b) Interrogative sentence
(c) Assertive sentence (d) Exclamatory sentence

(Q. No. 47 – 50) : Identify the subject of the sentence from the alternatives given below each sentence (in each question).

47. She will come tomorrow.
(a) She (b) come
(c) will (d) tomorrow
48. My brother lives in Delhi.
(a) My brother (b) lives (c) in (d) Delhi
49. What is on the table ?
(a) is (b) table
(c) What (d) the
50. Who is there ?
(a) is (b) Who
(c) there (d) none of these



SECTION – B
(Elementary Mathematics)

51. The distance between the points A(2, 3) and B(5, 7) is
(a) 3 b) 4 (c) 5 (d) $\sqrt{21}$
52. If the angles of a triangle are in the ratio 1 : 2 : 3, then the smallest angle is
(a) 15° b) 45° (c) 60° d) 30°
53. The smallest 4 digit number that can be formed using 9, 4, 3, 8 without repeating any digit is
(a) 3849 (b) 3489 (c) 9348 (d) 394
54. If an umbrella of Rs. 400 is sold at a discount of 10% to a buyer. The price paid by the buyer is
(a) Rs. 390 b) Rs. 360 (c) Rs. 410 (d) Rs. 396
55. The number 2744 can be written as
(a) 1^3 (b) 1^3 (c) 12^3 (d) 16^3
56. The number of edges in a cube is
(a) 8 (b) 10
(c) 12 (d) None of these
57. The largest fraction among the options is
(a) $\frac{5}{8}$ (b) $\frac{5}{12}$ (c) $\frac{5}{6}$ (d) $\frac{5}{9}$
58. Simplified value of $2\frac{1}{2} + 3\frac{1}{3}$ is
(a) $\frac{35}{6}$ (b) $\frac{33}{6}$ (c) $\frac{31}{6}$ (d) $\frac{45}{6}$



59. If $5^n = 125$, find the value of 5^{4-n} .
- (a) 5 (b) $\frac{1}{5}$
(c) 25 (d) $\frac{1}{25}$
60. The radius of a circle whose circumference is 22 cm is $\left(\pi = \frac{22}{7}\right)$
- (a) $\frac{2}{7}$ cm (b) $\frac{3}{7}$ cm
(c) 1 cm (d) $\frac{7}{2}$ cm
61. Average of all prime numbers between 30 and 50 is
- (a) 38.5 (b) 39
(c) 37.8 (d) 39
62. The number 3×10^{-5} can be written as
- (a) 0.000003 (b) -0.00003
(c) 0.000015 (d) 0.00003
63. The expression $x^2 + xy + x + y$ can be factorised as
- (a) $(x + y)(x + 1)$ (b) $(x + y)(y + 1)$
(c) $(x + y)(y + x)$ (d) None of these
64. The area of a Rhombus whose diagonals are of lengths 8 cm and 6 cm is (in sq. cm)
- (a) 48 (b) 24 (c) 14 (d) 16
65. The lateral (curved) surface area of a cylinder of radius r and height h is
- (a) $2\pi r^2$ (b) $2\pi rh$ (c) $\pi r^2 h$ (d) $4\pi r^2 h$
66. 15 years from now Ravi's age will be 4 times his present age. Ravi's present age is
- (a) 10 years (b) 5 years
(c) 17 years (d) None of these



67. If $x + y = 14$, $x - y = 4$, then $y =$
(a) 9 (b) 5 (c) 7 (d) 8
68. If Mr. A can build a wall in 10 days, number of days he would require to build $\frac{1}{4}$ of the wall are
(a) 2 days (b) 2.5 days (c) 40 days (d) None of these
69. The 6th term of the A.P. (Arithmetic Progression) 10, 7, 4, ... is
(a) -5 (b) 5 (c) 6 (d) -6
70. The diagonal of a rectangle is 5 cm and one of its sides is 4 cm, area of the rectangle is
(a) 20 sq.cm (b) 12 sq.cm (c) 10 sq.cm (d) None of these
71. If $\frac{15}{4} - 7x = 9$ then the value of x is
(a) $\frac{3}{4}$ (b) $\frac{-3}{4}$ (c) 1 (d) -
72. Which of the following is a rational number ?
(a) 3 (b) $\frac{10}{7}$ (c) $\frac{-3}{4}$ (d) All of these
73. A rational number between $\frac{1}{4}$ and $\frac{1}{2}$ among the following is
(a) $\frac{1}{5}$ (b) $\frac{1}{3}$
(c) 1 (d) None of these
74. In a group of 20 children, 8 drink tea but not coffee and 13 drink tea. The number of children drinking coffee but not tea is
(a) 6 (b) 7 (c) 1 (d) 2
75. The number added to twice $\frac{3}{4}$ to get 2 is
(a) $\frac{1}{4}$ (b) $\frac{3}{4}$ (c) $\frac{1}{2}$ (d) $\frac{-1}{2}$



SECTION – C
(General Knowledge)

76. Microbial diseases that can spread from an infected person to a healthy person through air, water, food or physical contact are called as
(a) Non-communicable diseases (b) Communicable diseases
(c) Communication diseases (d) Forward diseases
77. The property of metal by which it can be drawn into wires is called as
(a) Malleability (b) ductility (c) Tangibility (d) Sonorous
78. Since metals produce ringing sounds, they are said to be
(a) Dissolvability (b) Absorbing
(c) Fertility (d) Sonorous
79. Which Planet is known as the Earth's twin ?
(a) Mars (b) Jupiter (c) Uranus (d) Venus
80. Which force governs the movement of Planets around the sun ?
(a) Magnetic force (b) Gravitational force
(c) Radioactive force (d) Nuclear force
81. Bangru is a sub tribe of
(a) Nyishis living in Kurung Kumey District
(b) Mishmis living in Lohit District
(c) Tangsas living in Changlang District
(d) Tai-Khamptis living in Namsai District
82. The Headquarters of the Ramakrishna Math and Mission is in
(a) Belur (b) Dumdum (c) Kanyakumari (d) Almora
83. The biggest planet in our solar system is
(a) Venus (b) Jupiter (c) Mars (d) Saturn



84. olden Pagoda at Tengapani belongs to
(a) Theravada Buddhism (b) Gelugpa Buddhism
(c) Nyingma Buddhism (d) Zen Buddhism
85. Stilwell road was constructed during
(a) First World War (b) Bangladesh Liberation War
(c) Second World War (d) Indo-China war
86. Which Planet has rings around it ?
(a) Saturn (b) Earth
(c) Venus (d) Mercury
87. Which is the deepest ocean in the world ?
(a) Indian Ocean (b) Arctic Ocean
(c) Pacific Ocean (d) Atlantic Ocean
88. The process of taking out minerals from rocks buried under the earth's surface is called as
(a) Drilling (b) Fishing
(c) Mining (d) Erosion
89. olomite is found in
(a) West Kameng District (b) Lower Subansiri District
(c) Papum Pare District (d) Upper Siang District
90. aucasian refers to
(a) Ice cream (b) Human race
(c) Name of animal (d) Name of sea
91. Which is the longest latitude on earth ?
(a) Prime Meridian (b) Equator
(c) Both (a) and (b) (d) Neither (a) nor (b)



92. Raipur is the Administrative Capital of which Indian State ?
(a) Goa (b) Jharkhand (c) Nagaland (d) Chhattisgarh
93. Which of the following is located in West Bengal ?
(a) Vedanthangal Bird Sanctuary (b) Shivpuri National Park
(c) Sunderbans (d) Ranganthitoo Bird Sanctuary
94. Which river flows in the town of Varanasi ?
(a) Ganga (b) Brahmaputra
(c) Mahanadi (d) Beas
95. Which one of the following can be found in Kolkata ?
(a) Howrah Bridge (b) Gol Gumbaz
(c) Hanging Gardens (d) Hawa Mahal
96. Non-renewable resources are those which have a
(a) Limited stock (b) Unlimited stock
(c) Perishability (d) Durability
97. _____ of the earth's surface is covered with water.
(a) Three-fourth (b) Two-fourth
(c) One-fourth (d) Completely
98. A naturally occurring substance that has a definite chemical composition is called as
(a) Coral (b) Green zone (c) Mineral (d) Newton's law
99. The crops which are sown in the rainy season in India are called as
(a) Kharif crops (b) Rabi crop
(c) Step crop (d) Level crop
100. When plants of the same kind are cultivated at one place on a large scale, it is called a
(a) Cultivation (b) Crop (c) Vegetation (d) Climate



SECTION – D
(Optional Subject)

101. The third twenty year road development plan is popularly known as
(a) Delhi road plan (b) Kanpur road plan
(c) Hyderabad road plan (d) Lucknow road plan
102. _____ is obtained by cutting a triangular part of the brick from one of its header face. Cutting face is inclined at 45° to 60° with longer stretcher face of the brick.
(a) Mitred closer (b) Queen closer
(c) Bevelled closer (d) King closer
103. If a cross-wall is to be inserted after some time in stone masonry, then _____ should be provided.
(a) Nosing (b) Raking
(c) Toothing (d) Quoins
104. Which of the following instrument is not used to set out right angle to a chain line ?
(a) Dug square (b) Optical square
(c) Prism square (d) Site square
105. Rolled steel section is designated by the category to which it belongs followed by depth of the section in _____ and weight in kg per metre length of the beam.
(a) centimetres (b) Millimetres
(c) Metres (d) Kilometres
106. In Summit curves the convexity of the curve is
(a) Straight (b) Downward (c) Upward (d) Parallel
107. If compression members are effectively held in position at both ends and restrained in direction at one end, then its effective length is equal to
(a) $0.65 L$ (b) $0.9 L$ (c) $0.85 L$ (d) $1 L$



108. _____ is an artificial material, obtained by mixing cement, coarse aggregate, fine aggregate and water in suitable proportion.
- (a) Cement Concrete (b) Mortar
(c) Plaster (d) POP
109. Presence of moisture in sand increases _____ of sand.
- (a) Volume (b) rea
(c) Height (d) Length
110. After having constructed centring, _____ are constructed at both the ends of the arch.
- (a) Slakening (b) Ring
(c) Skew backs (d) Keystone
111. _____ gauge in mm of standard gauge is
- (a) 1676 mm (b) 1435 mm
(c) 1524 mm (d) 1067 mm
112. Timber for commercial purpose are divided into _____ classes.
- (a) Three (b) Four
(c) Two (d) Five
113. The clear cover in beam should not be less than _____ or the diameter of reinforcing bar, whichever is greater.
- (a) 40 mm (b) 20 mm
(c) 50 mm (d) 25 mm
114. Most widely used cement for general construction work is of
- (a) 33 grade (b) 4 grade (c) 53 grade (d) 63 grade
115. The thin layer of sap between sap wood and inner bark is known as
- (a) Heart layer (b) Inner layer
(c) Cambium layer (d) Medullary layer



116. Minimum live loads of floor area (in kg/m^2) for floors of banking halls, office entrance halls and reading rooms is
(a) 200 kg/m^2 (b) 1000 kg/m^2 (c) 300 kg/m^2 (d) 75 kg/m^2
117. _____ are the lines which are run in the field to check the accuracy of the work.
(a) Proof lines (b) Tie lines
(c) Side lines (d) Limit lines
118. If the image formed by the objective lens is not in the same plane with cross-hairs any movement of the eye is likely to cause an apparent movement of the image with respect to the cross-hairs. This is called
(a) Parallax (b) Focusing
(c) Aplanatism (d) Achromatism
119. In construction of stone masonry, formation of continuous _____ should be avoided.
(a) Horizontal joints (b) Vertical joints
(c) Inclined joints (d) None of the above
120. _____ are diagonal or cross pieces fixed on the standards to provide the stiffness to the scaffolding.
(a) Ledges (b) Gantries (c) Braces (d) Raker
121. Brick masonry is more resistant to _____ than stone masonry.
(a) Light (b) Wind (c) Fire (d) Water
122. The inner surface of the arch is called as
(a) Soffit (b) Piers (c) Crown (d) Haunch
123. Weight of R.C.C. should always be takes as
(a) 250 kN/m^3 (b) 2500 kN/m^2
(c) 2500 kg/m^3 (d) 2500 kg/m^2



124. In general practice excavation up to the depth of about _____ is known as ordinary excavation.
(a) 1.50 m (b) 2 m (c) 1.7 m (d) 2.50 m
125. _____ consists of a hollow C.I. or steel shaft about 300 mm inside diameter, with its bottom end in form of a helix.
(a) Box piles (b) Screw piles
(c) Steel pipe piles (d) Disc piles
126. In plastered surface, development of thin hair cracks is known as
(a) Renders (b) Setting
(c) Strips (d) Crazing
127. The size of wooden sleepers in broad gauge is
(a) 18 cm × 20 cm × 11.5 cm
(b) 275 cm × 25 cm × 13 cm
(c) 150 cm × 18 cm × 11.5 cm
(d) 250 cm × 20 cm × 12.5 cm
128. If wall is to directly rest on foundation block, the width of foundation should be equal to _____ times the thickness of the wall.
(a) Three (b) Two
(c) Four (d) Five
129. In road the width of _____ includes the width of pavement _____ and separators.
(a) Kerb, footpath (b) Formation, shoulders
(c) Shoulders, formation (d) Footpath, kerb
130. _____ of the cement is measured by Autoclave method.
(a) Fineness (b) Heat of hydration
(c) Soundness (d) Tensile strength



131. Concrete prepared either by hand mixing or machine mixing has to be transported to its place of use before _____ of cement starts.
- (a) Segregation (b) Hydration
(c) Discharging (d) Compaction
132. If roads provided with a hard pavement course such as water bound Macadam layer, then that roads is known as
- (a) Unpaved roads (b) Surfaced roads
(c) Paved roads (d) Unsurfaced roads
133. Class 9 roads are 6 m wide and are expected to carry _____ tonnes vehicles.
- (a) 1 (b) 3
(c) 2 (d) 4
134. Twisted bars have considerable large yield stress about _____ more than that for ordinary mild steel bars.
- (a) 50% (b) 75%
(c) 25% (d) 100%
135. One metre is equal to
- (a) 10 centimetres (b) 10 decimetres
(c) 1 decametre (d) 10 millimetres
136. In theodolite lower plate carries a horizontal circle at its bevelled edge and is, therefore, also known as
- (a) Vernier plate (b) Centre plate
(c) Scale plate (d) Tangent plate
137. In stone masonry some stones at regular intervals are placed right across the wall. Such stones are known as
- (a) Quoin stones (b) Hearting stones
(c) Bed stones (d) Through stones



138. In 20 m and 30 m chain, small _____ rings are provided at every metre length, except where tallies are attached.
(a) Iron (b) Copper (c) Aluminium (d) Brass
139. Laterite stone is an example of _____ rocks.
(a) Igneous (b) Sedimentary
(c) Metamorphic (d) None of these
140. Mechanical devices which are used to compact concrete in the formwork are known as
(a) Vibrators (b) Mixer
(c) Sieve shaker (d) None of the above
141. The EDM method is based on generation, propagation, reflection and subsequent reception of _____ waves.
(a) Electromagnetic (b) Radioactive
(c) X-ray (d) gamma
142. Density of mild steel is equal to
(a) 7580 kg/cu m (b) 7850 kg/cu m
(c) 7805 kg/cu m (d) 708 kg/cu m
143. Back Bearing (B.B.) = Fore Bearing (F.B.) $\pm 180^\circ$, using plus sign when F.B. is _____ than 180° and minus sign when F.B. is _____ than 180° .
(a) Equal, Equal (b) Greater, Less
(c) Less, Greater (d) None of the above
144. In round columns and columns having helical binders should have at least _____ bars.
(a) Six (b) Four (c) Ten (d) Eight
145. Revenue chain is _____ ft. long and consists of _____ links.
(a) 66, 100 (b) 100, 100
(c) 33, 16 (d) 10, 6



146. The difference between the sum of back sights and the sum of foresights should be equal to
- (a) Difference between last R.L. and first R.L.
 - (b) Difference between first R.L. and last R.L.
 - (c) Difference between foresight and back sight
 - (d) Difference between the H.I. and R.L.
147. The length of a line measured with a 20 metre was found to be 250 metres. If the chain was 10 cm too long, then the true length of the line is
- (a) 251.50 metres
 - (b) 250.25 metres
 - (c) 250.75 metres
 - (d) 251.25 metres
148. The clear horizontal distance between adjacent faces of old and new foundations should be at least equal to the larger of the _____ of foundations.
- (a) Lengths
 - (b) Depths
 - (c) Widths
 - (d) Heights
149. Plain cement concrete have been classified as M_{10} , M_{15} , M_{20} , M_{25} and so on in which 10, 15, 20, 25 figures indicate cube strength in
- (a) N/dm^2
 - (b) N/m^2
 - (c) N/mm^2
 - (d) N/cm^2
150. In under-reinforced R.C.C. beams, depth of actual neutral axis is _____ than the depth of critical neutral axis.
- (a) Equal
 - (b) Parallel
 - (c) Less
 - (d) More



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