Answer-key & Solution

SSC JE (Civil)
MOCK -(100)
Date 03/6/2017

1. A	26. B	51. A	76. A	101. A	126. A	151. A	176. A
2. B	27. A	52. B	77. C	102. B	127. B	152. D	177. A
3. C	28. C	53. C	78. D	103. D	128. D	153. C	178. B
4. D	29. B	54. D	79. C	104. A	129. C	154. D	179. C
5. D	30. C	55. D	80. B	105. B	130. D	155. A	180. D
6. B	31. C	56. A	81. D	106. B	131. B	156. D	181. D
7. D	32. B	57. C	82. B	107. A	132. C	157. A	182. C
8. C	33. C	58. C	83. D	108. D	133. C	158. A	183. D
9. C	34. D	59. C	84. D	109. D	134. A	159. A	184. B
10. B	35. B	60. D	85. C	110. C	135. C	160. C	185. D
11. C	36. B	61. A	86. A	111. D	136. B	161. C	186. A
12. B	37. C	62. D	87. B	112. A	137. B	162. A	187. B
13. C	38. A	63. D	88. D	113. A	138. C	163. D	188. A
14. A	39. C	64. D	89. D	114. A	139. D	164. B	189. D
15. A	40. B	65. B	90. A	115. C	140. A	165. B	190. D
16. B	41. C	66. C	91. A	116. D	141. A	166. C	191. D
17. C	42. A	67. A	92. C	117. B	142. B	167. D	192. A
18. D	43. C	68. C	93. B	118. D	143. B	168. B	193. B
19. A	44. C	69. C	94. B	119. D	144. A	169. B	194. D
20. B	45. C	70. A	95. B	120. B	145. B	170. C	195. C
21. D	46. C	71. B	96. C	121. A	146. B	171. C	196. D
22. C	47. D	72. D	97. C	122. D	147. C	172. B	197. C
23. C	48. B	73. C	98. A	123. D	148. D	173. B	198. A
24. B	49. C	74. C	99. A	124. D	149. C	174. C	199. B
25. C	50. A	75. D	100. D	125. B	150. C	175. D	200. B

Note : *If your opinion differ regarding any answer, please message the mock test and Question number to 9560620353*
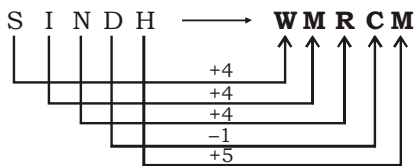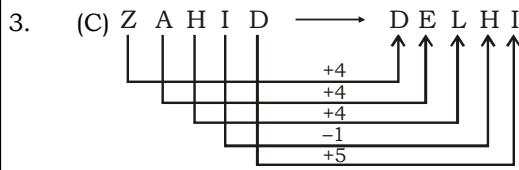
Note : *If you face any problem regarding result or marks scored, please contact : 9313111777*

SOLUTION SSC JE (Civil) MOCK TEST no. 100

1. (A) $246 \Rightarrow \dfrac{(6)^2}{4} = \dfrac{36}{4} = 9$

$239 \Rightarrow \dfrac{(9)^2}{3} = \dfrac{81}{3} = \mathbf{27}$

2. (B) Jama Masjid is in Delhi and Gateway of India is in **Mumbai**.

3. (C)

4. (D) Telescope was invented by Galileo and Bulb was invented was **Edison**.

5. (D)

Element	**Chemical Formula**
Hg	Mercury
Br	Bromine
Ca	Calcium
Mg ≠ Mc	Magnesium

6. (B) Except (B), others have a pair of prime numbers.

7. (D) 'What, When, and How' denotes the question mark, whereas 'So' denotes the answer.

8. (C) Except (C), others have same mirror image.

9. (C) Let x and y be the ten's and unit's digits respectively of the numeral denoting the woman's age.

Then, woman's age = $(10x + y)$ years
Husband's age = $(10y + x)$ years.

$\therefore (10y+x) - (10x+y) = \left(\dfrac{1}{11}\right)(10y + x + 10x + y)$

$\Rightarrow (9y - 9x) = \left(\dfrac{1}{11}\right)(11y + 11x)$

$\Rightarrow (9y - 9x) = (x + y)$

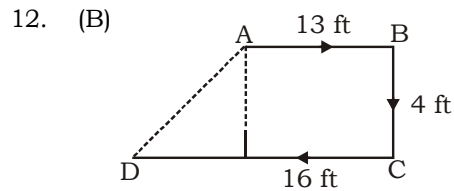$\Rightarrow 10x = 8y \Rightarrow x = \left(\dfrac{4}{5}\right)y$

Clearly, y should be a single-digit multiple of 5, which is 5.
So, $x = 4$, $y = 5$.
Hence, woman's age = $10x + y$ = **45 yrs**

10. (B) Father's wife → mother. Hence, the daughter of the mother means sister and sister's younger brother means brother. Therefore, the boy is the **brother** of Mayank.

11. (C) Only "Pink" colour is missing in the given four figures which is not with blue.
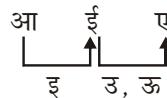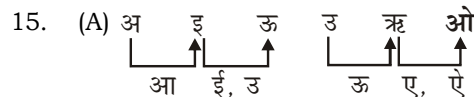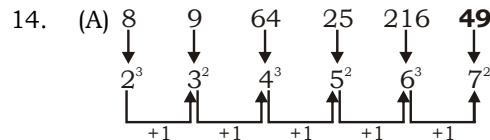
12. (B)

Required distance

$AD = \sqrt{4^2 + (16-13)^2} = \sqrt{4^2 + 3^2} = \mathbf{5\ ft}$

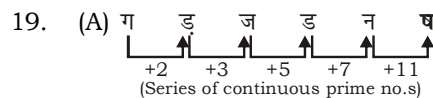13. (C) $3^3 - 4^2 = 27 - 16 = 11$
$4^3 - 5^2 = 64 - 25 = 39$
$3^3 - 2^2 = 27 - 4 = \mathbf{23}$

14. (A)

15. (A)

16. (B) Part Q of the figure represents those girls who are players, but no coach.

17. (C) $2 \to 5 \to 1 \to 3 \to 4$

18. (D)

19. (A)

20. (B) $4 \times 0.25 = 1$
$1 \times 0.5 = 0.5$
$0.5 \times 1 = 0.5$
$0.5 \times 2 = 1$
$1 \times 4 = 4$
$4 \times 8 = 32$
$32 \times 16 = \mathbf{512}$

21. (D) $5 \xrightarrow{\times 2} 10 \xrightarrow{\times 3} 30 \xrightarrow{\times 4} 120 \xrightarrow{\times 5} 600 \xrightarrow{\times 6} \mathbf{3600} \xrightarrow{\times 7} 25200$
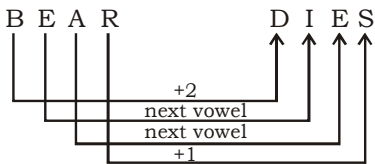
22. (C)

23. (C) ✡ = 8 triangles

☆ = 10 triangles
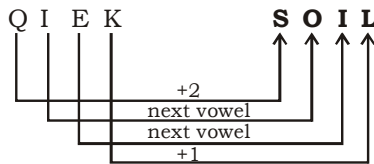
Total no. of triangles = 10 + 8 = **18**

24. (B)

25. (C)

	Vowels	Consonant	Result
LIFEBUOY	4	4	44
LIRIL	2	3	23
SANTOOR	3	4	34
REXONA	3	3	33
PATANJALI	4	5	**45**

26. (B) Heart — 3 consonants, 2 vowels
Kidney — 4 consonants, 2 vowels

27. (A) $256 \Rightarrow (6 \times 5)^2 = 30^2 = 900$
$248 \Rightarrow (4 \times 8)^2 = 32^2 = 1024$

28. (C) B E A R → D I E S
(+2, next vowel, next vowel, +1)

Q I E K → **S O I L**
(+2, next vowel, next vowel, +1)

29. (B) Barfi is a sweet and Fig is a fruit.

30. (C) '⊏' can be drawn with of three lines, whereas A, M and W can be drawn with 4 lines.

31. (C) $61 = 4^3 - (4 - 1)$
$211 = 6^3 - (6 - 1)$
$503 \neq 8^3 - (8 - 1)$
$991 = 10^3 - (10 - 1)$

32. (B) Only 'was' represents the past.

33. (C) Only Ranchi is in Jharkhand, others cities are in Bihar.

34. (D) Clearly, number of boys in the row
= (9 + 12 + 5) = 26

35. (B) They are father and daughter.

36. (B) $\sqrt{5+5+5+5} \Rightarrow \sqrt{5 \div 5 \div 5 \div 5} = \sqrt{\dfrac{1}{25}}$

$= \dfrac{1}{5} = 0.2$

$\sqrt{4+4+4+4} \Rightarrow \sqrt{4 \div 4 \div 4 \div 4} = \sqrt{\dfrac{1}{16}}$

$= \dfrac{1}{4} = 0.25$

37. (C) White, Wolf, World, Wound, Wrist

38. (A) At 1 o'clock, the hour hand is at 1 and the minute hand is at 12.
Thus, they are 5 min spaces apart.
To be together, the minute hand must gain 5 min over the hour hand.
55 min. are gained by minute hand in 60 min.

5 min will be gained by it in $\left(\dfrac{60}{55} \times 5\right)$

min $= \dfrac{60}{11}$ min $= 5\dfrac{5}{11}$ min

Hence, the hands will coincide at $5\dfrac{5}{11}$ min past 1.

39. (C) $\dfrac{2,3}{23}, \dfrac{5,7}{57}, \dfrac{11,13}{1113}, \dfrac{17,19}{1719}, \dfrac{23,29}{2329}, \dfrac{31,37}{\underset{\mathbf{3137}}{\downarrow}}$

40. (B) $5 \times 1 + 2 = 7$
$7 \times 2 + 3 = 17$
$17 \times 3 + 4 = 55$
$55 \times 4 + 5 = 225$
$225 \times 5 + 6 = \mathbf{1131}$

41. (C) $3 \times 5 = 15$, $15 \times 3 = 45$, $45 - 2 = 43$
$4 \times 5 = 20$, $20 \times 3 = 60$, $60 - 2 = 58$

42. (A) The series formed with the group of four letters is.
p q r s/ p q r s/ p q r s/ p q r s

43. (C) $5! = 5 \times 4 \times 3 \times 2 = 120 \Rightarrow 12/0$
$4! = 4 \times 3 \times 2 = 24 \Rightarrow 2/4$
$6! = 6 \times 5 \times 4 \times 3 \times 2 = 720 \Rightarrow 7/\mathbf{20}$

44. (C) $5 \times 3 + 6 = 21$
$4 \times 8 + 7 = 39$
$6 \times 9 + 3 = 57$
$8 \times \mathbf{4} + 6 = 38$

45. (C) $5^3 - 4^2 = 125 - 16 = 109$
$6^3 - 4^2 = 216 - 16 = \mathbf{200}$
$3^3 - 2^2 = 27 - 4 = 23$
$7^3 - 6^2 = 343 - 36 = 307$

46. (C) Let daughter's present age be x yr.
Then, mother's present age = ($3x$) yr
Five years ago, mother's age = ($3x - 5$) yr

and daughter's age = $(x-5)$ yr

So, $3x-5 = 4(x-5)$

$\Rightarrow 3x-5 = 4x-20$

$\Rightarrow x = 15$ yr

So, daughter's age = 15 yrs

Now, mother's present age = $3 \times 15 = 45$

47. (D) We can't find 2 'R' and 2 'A' in the given word 'BEHAVIOUR'.

48. (B) Number of squares = $1^2 + 2^2 + 3^2 + 4^2$

= $1 + 4 + 9 + 16 = $ **30**

50. (A) $12 \times 6 + 1 \div 4 - 2 \Rightarrow 12 - 6 \times 1 + 4 \div 2$

= $12 - 6 \times 1 + 2$

= $14 - 6 = $ **8**

51. (A) Kush Bhagat has recently won three gold medals in the 1st Western Asia Youth Chess Championships at Al Ain Chess Club in United Arab Emirates (UAE) in all the three categories - rapid, blitz and standard. With this, he became the only Indian to bag all the crowns in the competition. Bhagat is the 2nd standard student of the NSS Hill Spring International School in Mumbai, Maharashtra.

52. (B) Sir Thomas Roe also visited the court of Jahangir. He was an ambassador of James - I, king of England. Tavernier's account covers the reign of Shahjahan and Aurangzeb.

53. (C) Copacabana Beach is located in Rio de Janeiro in Brazil. Copacabana Beach is one of the most famous and most beautiful beaches in the world. Copacabana is nicknamed the "Little Princess of the Sea". One of the most unmistakable features of Copacabana beach is the black and white wave motif that weaves up the entire promenade and also serves as inspiration behind many of the beach's best-sold souvenirs.

54. (D) Diamond is the polymorph of the element carbon. Calcium is the basic element of naturally occuring marble. Sand formed by Silicon and Aluminium is the basic element of naturally occuring Ruby.

55. (D) The Union Minister for Social Justice and Empowerment, Thaawarchand Gehlot has recently launched the 'Mobile App and Facebook Page' of the National Trust on December 30 to mark the '2016 National Trust Foundation Day (NTFD)' on the theme "Celebrating Inclusion" to create support network for persons with disabilities by sensitizing unreached section of society. The National Trust is a statutory body of the Ministry of Social Justice and Empowerment, Government of India, set up under the "National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities" Act (Act 44 of 1999), which was passed in the Parliament on December 30, 1999. Thus, the NTFD is observed every year on December 30 in India to create awareness for the welfare of persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities.

57. (C) The Bihar government has recently declared 50% reservation in all judicial services for aspirants belonging to the Extremely Backward Classes (EBCs), Other Backward Classes (OBCs), Scheduled Castes (SCs) and Scheduled Tribes (STs). The reservation will be in both Superior Judicial Services and Subordinate Judicial Services. According to the Bihar Cabinet, aspirants belonging to EBCs will get 21% reservation, OBCs will have 12 % reservations, SCs will have 16 % reservation and STs will be provided 1% reservation in all judicial services of the State. Beside this, there will be 35% horizontal reservation for women and 1% reservation for disabled persons. Currently, there is a provision for only 27% reservation in subordinate services while no quota in superior services.

59. (C) Sounds may be generally characterized by pitch, loudness, and quality. Sound "quality" or "timbre" describes those characteristics of sound which allow the ear to distinguish sounds which have the same pitch and loudness. Quality is then a general term for the distinguishable characteristics of a tone.

60. (D) Anil Baijal, a 1969 batch IAS officer, has been appointed as the new Lt Governor of Delhi. He succeeded Najeeb Jung, who recently resigned from the post. Baijal had served as Union Home Secretary under the Atal Bihari Vajpayee government besides holding key positions in other ministries.

61. (A) ONGC is India's largest petrochemical company. IPCL is the second largest petrochemical company. It produces around 69% of India's crude oil and around 62% of its natural gas.

62. (D) Daily intake of protein for active woman is 46 gram. But for pregnant women the protein requirement increase to 47 - 60 gm per day.

63. (D) The Mudrarakshasa ("The Signet of the Minister"), a historical play in Sanskrit by

Vishakhadatta (4th century CE) narrates the ascent of the king Chandragupta Maurya to power in Northern India.

64. (D) The Government of India has established NITI Aayog to replace the Planning Commission. The Union Government of India announced formation of NITI Aayog on 1st January 2015 and the first meeting of NITI Aayog was held on 8 February 2015.

65. (B) The World Bank (WB) has recently approved a $235 million credit for the Bihar Rural Roads Project to improve and effectively manage rural road network of the state. The project will support the construction of about 2,500 km of rural roads under the Mukhiya Mantri Gram Sampark Yojana (MMGSY). The roads will be constructed using cost-effective designs and will incorporate engineering measures that ensure road safety. The project will also suggest better contract management practices to avoid time and cost over-runs. The credit is from the International Development Association (IDA) - the World Bank's concessionary lending arm - with a maturity of 25 years, including a 5-year grace period.

67. (A) Pitt's India act - 1784;
    Indian Arms Act - 1878;
    Ilbert Bill - 1883 - 84

68. (C) Bisphenol A, commonly abbreviated as BPA, is an organic compound with two phenol functional groups. Bisphenol A is used primarily to make a plastic which is used in making food packaging material. It is a key monomer in production of epoxy resins and used to make polycarbonate plastic. Polycarbonate plastic, which is clear and nearly shatter-proof, is used to make a variety of common products including baby and water bottles, sports equipment, medical and dental devices, dental fillings and sealants, eyeglass lenses, CDs and DVDs, and household electronics.

70. (A) The world's highest bridge "Beipanjiang Bridge" has been opened to traffic in China. The bridge soars 565 metres (1,854 feet) above a river and connects the two mountainous provinces of Yunnan and Guizhou and is expected to reduce road travel times from Liupanshui to Xuianwei from 4 hours to 2 hrs. The bridge overtook the Si Du River Bridge in the central province of Hubei to become the world's highest bridge.

72. (D) The asteroids are group of small pieces of rock revolving round the sun between the orbit of Mars and Jupiter. They are approximately 40,000 in number.

73. (C) Hepatitis-B is a potentially life-threatening liver infection caused by the hepatitis B virus. It can cause chronic liver disease and puts people at high risk of death from cirrhosis of liver and liver cancer. Hepatitis-B virus is transmitted between people by contact with blood or other body fluid.

74. (C) A fluorescent lamp or fluorescent tube is a gas discharge lamp that uses electricity to excite mercury vapour. The excited mercury atoms produce shortwave ultraviolet light that then causes a phosphor to fluoresce, producing visible light. 6500 K is usually printed on a used fluorescent tube light.

75. (D) The book "That thing called love" has been authored by Tuhin A. Sinha, the best-selling author and commentator. The book explores the trivialization of relationships in the current urban society in India. Recently, the author is in news because he has been appointed as the new spokesperson of the Mumbai unit of the Bharatiya Janata Party (BJP).

76. (A) Novak Djokovic, a Serbian tennis professional has won the Qatar Open Men's singles tennis tournament by defeating Andy Murray in the final by 6-3 5-7 6-4 at the Khalifa International Tennis and Squash Complex in Doha, Qatar. It was the 36th contest between the two and Murray lost for the 25th time against his old rival.

77. (C) Four great monarchies in the time of the Buddha were Avanti, Magadha, Kosala and Vamsa (or Vatsa).

78. (D) In India plans are formulated by Planning Commission and are finally approved by National Development Council. All state chief ministers are members of NDC. The NDC is headed by Prime Minister of India.

79. (C) Order of precedence is President, Vice President, PM, Governor of State within their respective states, Former Presidents and Deputy PM, CJI and Speaker of LS.

80. (B) Finance Bill means a Bill ordinarily introduced every year to give effect to the financial proposals of the Government of India for the next financial year and includes a Bill to give effect to supplementary financial proposals for any period. The Finance Bill is introduced immediately after the presentation of the

Budget. The introduction of the Bill cannot be opposed.

81. (D) Jyotiba Phule was an activist, thinker, social reformer, writer, philosopher, theologist, scholar, editor and revolutionary from Maharashtra founded the Satya Shodhak Samaj in 1873 in Maharshtra.

82. (B) The 25th New Delhi World Book Fair (NDWBF) has been at Pragati Maidan, New Delhi from January 7-15, 2017. The 2017 theme is "Manushi - Books Written on and by Women", which will exhibit the rich tradition of women writings from ancient times till present. The focus of the Book Fair is on the 'Culture of Reading'. The book fair is organized by National Book Trust (NBT), India. About 20 countries including China, Egypt, France, Germany, Japan and Iran are participating in the Foreign Pavilion.

83. (D) The 9th edition of Jaipur International Film Festival (JIFF) has started in Jaipur on January 7, 2017.The purpose of the 5-day event is to promote emerging directors, encourage exchange of knowledge, information, ideas and culture between India and the participating nations. The festival will witness participation by 250 filmmakers and artists from the fraternity. The festival will have 17 workshops and seminars on various aspects of cinema. This year's Life Time Achievement Award was presented to internationally acclaimed cine-visionary Ramesh Prasad, who is said to have created specialized post production facilities and established the Prasad Film Laboratory with advanced equipment.

84. (D) PESA Act does not identify the freedom of tribal people from exploitation as its objectives, but it automatically becomes a by-product of its objectives.

85. (C) Changes in weather involve air movements, formation of clouds, and precipitation. Energy is needed to make all these things happen. The energy comes from the sun. Heat energy enters and moves through the atmosphere in three different ways. One of the way through which heat energy is transferred is radiation. Hot bodies (The sun) radiate their energy mainly in the form of short waves. These short waves are seen as visible light. Cooler bodies such as Earth radiate their energy as longer waves.

87. (B) In the fourteenth and fifteenth century gun powder was used for military purpose in India and even artillery in its rudimentary form was known. The Babur's first real expedition took place in India in 1519 when he captured Bhera. The Delhi Sultanate's greatest contribution to Indian fine arts was the introduction of Islamic architectural features, including true domes and arches, and the integration of Indian and Islamic styles of architecture. The Timurid dynasty was a Sunni Muslim dynasty. Members of the Timurid dynasty were strongly influenced by the Persian culture and had established two well-known empires in history, namely the Timurid Empire (1370-1507) in Persia and Central Asia and the Mughal Empire (1526-1857) in the Indian subcontinent.

88. (D) Lithium has the highest specific heat capacity. Lithium metal is often used in coolants for heat transfer applications. It belongs to the alkali metal group of chemical elements. Under standard conditions it is the lightest metal and the least dense solid element. Like all alkali metals, lithium is highly reactive and flammable. For this reason, it is typically stored in mineral oil.

89. (D) The actual average distance between the Sun and the earth is 152×10^6 km which is near to 150×10^6 km. The distance from Earth to the Sun is called an astronomical unit.

90. (A) CRR or the Cash Reserve Ratio is that ratio of the total deposits held by a bank which it has to keep with the central bank of the country.

93. (B) Indigo is a dye different from any other dye. It does not require any mordant. Rather it is dyed through a living fermentation process. The process 'reduces' the Indigo, changing it from blue to yellow. In this state, it is a bright green. Slowly the air changes it to the beautiful deep and rich blue of Indigo.

95. (B) Gymnosperm is a plant, such as a cycad or conifer, the seeds of which are not enclosed within an ovary. In gymnosperms, no special structure develops to enclose the seeds, which begin their development 'naked'.

96. (C) The Constitution of India recognizes religious and linguistic minorities under article 29 and 30 (Cultural and Educational rights). However it does not define the term Minority.

97. (C) Dhanvantri is an Avatar of Vishnu in the Hindu tradition. He appears in the Vedas and Puranas as the physician of the gods (devas) and the god of Ayurvedic medicine. It is common practice in Hinduism for worshippers to pray Dhanvantri seeking his blessings for sound health for themselves and/or others. Dhanvantri is depicted as Vishnu with four hands, holding medical herbs in one hand and a pot containing rejuvenating nectar called amrita in another. The Purans state that Dhanvantri emerged from the 'Ocean of Milk' and appeared with the pot of nectar during the story of the Samudra or Sagar manthan whilst the ocean was being churned by the devas and asuras, using the Mandara mountain and the serpent Vasuki.

98. (A) Justice Jagdish Singh Khehar, who led the five-judge constitution bench in the Supreme Court which had struck down the controversial NJAC Act for appointment of judges, has been sworn-in as the 44th Chief Justice of India (CJI) and will remain on the post till August 27, 2017. He is the first Chief Justice from the Sikh community, who succeeded Justice T.S. Thakur.

100. (D) At 'M_4' position of the diagram, the height of the tide is at maximum, because in this position the earth, the moon and the sun are in a straight line.

101. (A) d = 2m = 2000 mm
p = 500 N/mm²
h_p = 25 Bar = 2.5 N/mm²

$$t = \frac{pd}{4 \times h_p}$$

$$= \frac{2000 \times 2.5}{4 \times 500}$$

= 2.5 mm

105. (B) $\frac{dM}{dx} =$ Shear force = 0

then B.M. will be constant

108. (D) $R_a + R_b = 0$
taking moment about B
$R_a \times 3 - M = 0$

$$R_a = \frac{M}{3}, R_b = -\frac{M}{3}$$

So maximum shear force is $\frac{M}{3}$

133. (C) $W_S = \frac{e}{G}$ note   Gw = se

S = 1

$$W = \frac{e}{G}$$

$$= \frac{0.50}{2.70}$$

= 0.185

= 18.5%

134. (A) $T_V = \frac{\pi}{4}\left(\frac{U\%}{100}\right)^2$

$$= \frac{\pi}{4}\left(\frac{50}{100}\right)^2, \quad = \frac{\pi}{4} \times \frac{1}{4}, \quad = \frac{\pi}{16}, \quad = 0.2$$

135. (C) h = 0.375
G = 2.6
e = ?

$$l = \frac{G-1}{1+e} \text{ or } (G-1)(1-n)$$

= (2.6-1) (1.-0.375)

= 1.6 × 0.625 = 1

152. (D) $h = \frac{(y_2 - y_1)^3}{4y_1 y_2}$

$$h = \frac{(1.4 - 0.4)^3}{4 \times 1.4 \times 0.4}$$

$$= \frac{(1)^3}{2.24}$$

= 0.446

153. (C) $f = 1.73\sqrt{D}$
f² = (1.73)² × D

$$D = \frac{f^2}{1.73 \times 1.73}$$

$$= \frac{2^2}{1.73 \times 1.73}$$

$$= \frac{4}{2.99} \text{ or } \frac{4}{3}$$

= 1.33

175. (D) Cement = $\frac{1.52}{1+2+4} = 0.217m^3$

1m³ = 30 Bag
In 0.217 m³ , Cement bag
= 30 × 0.27 . Bag
= 6.5 Bag

192. (A) Magnetic Bearing
= S35° 30′ E = 144°30′
Magnetic Declination = 4° East
True Bearing = 144°30' + 4°
= 148°30'
= S31° 30′E