



NMMS (E)

Space for Rough Work



ENGLISH

Roll No.

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NMMS – NOVEMBER, 2014

MENTAL ABILITY AND SCHOLASTIC APTITUDE TEST

Time : Part – I : 90 Minutes

Max. Marks : 90

Time : Part – II : 90 Minutes

Max. Marks : 90

Instructions to Candidates

Read the following instructions carefully before you answer the questions. Answers are to be SHADED on a SEPARATE OMR Answer Sheet given, with a HB Pencil. Read the Instructions printed on the OMR Sheet carefully before answering the questions.

purposes, your Center Code No. and Roll No. shall remain the same as given on the Admission Card.

1. Please write your Center Code No. and Roll No. very clearly (only one digit in one block) on the OMR Sheet as given in your admission card. Please see that no block is left unfilled and even Zeros appearing in the Center Code No. are correctly transferred to the appropriate blocks on the OMR Sheet as shown in the example given in the OMR Sheet. For all subsequent
2. The Test is in TWO Parts. Part – I consists of 90 questions and Part – II also consists of 90 questions.
3. All questions in Part – I and Part – II carry one mark each.
4. Since all questions are compulsory, do not try to read through the whole question paper before beginning to answer it.
5. Begin with the first question and keep trying one question after another till you finish both the Parts.



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6. If you do not know the answer to any question, do not spend much time on it and pass on to the next one. If time permits, you can come back to the questions which you have left out in the first instance and try them again.
7. Since the time allotted to the two parts of this question paper is very limited, you should make the best use of it by not spending too much time on any question.
8. A blank page is provided for rough work at the end of each part.
9. **REMEMBER, YOU HAVE TO SHADE ANSWERS ON A SEPARATE OMR SHEET PROVIDED.**
10. Answer to each question is to be indicated by **SHADING** the circle having the number of the correct alternative in the OMR Sheet from among the ones given for the corresponding question in the booklet.
11. Now turn to the next page and start answering the questions.
12. After the examination, you should hand over the OMR Sheet to the Invigilator of the room.
13. The candidate need **not** return this Question Paper booklet and can take it after the completion of the examination. No candidate should leave the examination hall before the end of the examination.



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PART – I
MENTAL ABILITY TEST

Time : 90 Minutes

Max. Marks : 90

Note : SHADE the correct alternatives in the OMR Answer Sheet provided, from amongst the ones given against the corresponding questions in the Question Booklet. For shading the circles, use a **HB Pencil**.

**Directions :****Questions (1 to 10) :**

In the number series given below, one number is missing. Each series is followed by five alternatives : (1), (2), (3), (4) and (5). One of them is the right answer. Indicate it as per the 'Instructions'.

1. 36, 29, 22, 15,

- (1) 6
- (2) 5
- (3) 8
- (4) 7
- (5) 4

2. 5, 6, 11, 17,

- (1) 28
- (2) 23
- (3) 22
- (4) 39
- (5) 25

3. 3, 9, 21, 45,

- (1) 135
- (2) 81
- (3) 69
- (4) 90
- (5) 93

4. 4, 12, 36, 108,

- (1) 216
- (2) 324
- (3) 432
- (4) 160
- (5) 540

5. 243, 81,, 9, 3

- (1) 18
- (2) 36
- (3) 45
- (4) 27
- (5) 54

6. 583, 463, 343, 223,

- (1) 113
- (2) 103
- (3) 123
- (4) 93
- (5) 130

7. 115, 236, 357, 478,

- (1) 589
- (2) 499
- (3) 699
- (4) 498
- (5) 599

8. 3, 6, 18, 72,

- (1) 360
- (2) 350
- (3) 432
- (4) 216
- (5) 99

9. 7, 17, 37, 67,

- (1) 106
- (2) 87
- (3) 97
- (4) 107
- (5) 117



10. 160, 115, 80, 55,

- (1) 45
- (2) 35
- (3) 40
- (4) 30
- (5) 25

Directions :

Questions (11 to 15) : These are based on letter analogy. There are two pairs of letter combinations in each question. The first (left hand side) pair has some relationship between its members. In the second pair, one member is missing. Find this out from the answers (1), (2), (3), (4) and (5) such that this pair has a similar relationship as the first pair. Indicate your answers as per the 'Instructions'.

11. BD : AE :: HJ : ?

- (1) FL
- (2) FK
- (3) IK
- (4) GL
- (5) GK

12. CBA : GFE :: PON : ?

- (1) TSR
- (2) TRS
- (3) SRT
- (4) QRS
- (5) RST

13. FH : EG :: NP : ?

- (1) MN
- (2) OP
- (3) MO
- (4) NO
- (5) MP

14. TS : PO :: LK : ?

- (1) GH
- (2) HG
- (3) GI
- (4) HI
- (5) IJ

15. ABCD : BCEF :: IJKL : ?

- (1) JKML
- (2) JKLM
- (3) IJMN
- (4) JLMN
- (5) JKMN

Directions :**Questions (16 to 25) :**

In the following questions, letters/letter groups are arranged in a particular order with some underlying criterion. Study the order and choose the answer from the alternatives to fill the gaps. Indicate the right answer as per the 'Instructions'.

16. A, C, F, H,

- (1) I
- (2) L
- (3) J
- (4) K
- (5) M

17. A, G, L, P,

- (1) R
- (2) S
- (3) Q
- (4) T
- (5) U



18. AC, EG, IK,

- (1) MN
- (2) MP
- (3) LN
- (4) LO
- (5) MO

19. AZ, BX, CV,

- (1) DS
- (2) ET
- (3) DT
- (4) DU
- (5) DW

20. A, E, G, K,

- (1) M
- (2) L
- (3) N
- (4) O
- (5) J

21. AF, HL, NQ,

- (1) SV
- (2) SU
- (3) TU
- (4) TV
- (5) ST

22. ZYX, ABC, VUT, EFG,

- (1) PQR
- (2) RPQ
- (3) QPO
- (4) RQP
- (5) QOP

23. ABC, ZYX, DEF, WVU,

- (1) HIJ
- (2) IJK
- (3) GHI
- (4) UTS
- (5) HIG

24. Z, X, U, Q,

- (1) K
- (2) M
- (3) N
- (4) J
- (5) L

25. AFK, BGL, CHM, DIN,

- (1) GJO
- (2) EJO
- (3) GJN
- (4) EJN
- (5) FIO

Directions :**Questions (26 to 30) :**

In each of these questions, five words are given. If they are arranged in the alphabetical order as in a Dictionary, find out the word which comes first. Indicate your answer as per the 'Instructions'.

26. (1) Bean
(2) Bamboo
(3) Beast
(4) Banker
(5) Bangle



27. (1) Risk
(2) Ridge
(3) Road
(4) Ring
(5) Ribbon

28. (1) Crane
(2) Coat
(3) Cook
(4) Clove
(5) Code

29. (1) Neem
(2) Nerve
(3) Nest
(4) News
(5) Neck

30. (1) Season
(2) Shield
(3) Shore
(4) Shorts
(5) Sherpa

Directions :**Questions (31 to 40) :**

In each of these questions, five words are given. Four of them are alike in some way. One word is different from them. Identify the right answer and indicate it as per the 'Instructions'.

31. (1) Malaysia
(2) Tunisia
(3) Brazil
(4) Europe
(5) Russia

32. (1) Bidar
(2) Nagpur
(3) Haryana
(4) Jhansi
(5) Indore

33. (1) Veena
(2) Violin
(3) Tabla
(4) Guitar
(5) Sitar

34. (1) Carrot
(2) Brinjal
(3) Tomato
(4) Drumstick
(5) Bitter Gourd

35. (1) Camel
(2) Pigeon
(3) Cow
(4) Dog
(5) Goat

36. (1) C. V. Raman
(2) M. S. Swaminathan
(3) U. R. Rao
(4) Jayant V. Narlikar
(5) Swami Agnivesh

37. (1) Chemistry
(2) Geology
(3) Astronomy
(4) History
(5) Physics



38. (1) Hatred
(2) Anger
(3) Happiness
(4) Sorrow
(5) Jealousy

39. (1) Kolkata
(2) Bellary
(3) Indore
(4) Calicut (Kozhikode)
(5) Patiala

40. (1) Curd
(2) Oil
(3) Butter
(4) Ghee
(5) Milk

Directions :**Questions (41 to 45) :**

There is a certain relationship between two given words on the one (left) side of :: and one word is given on the other side of ::, while another word is to be found from the five given alternatives, such that similar relation exists in the second pair. Identify the right answer and indicate it as per the 'Instructions'.

41. Crescograph : Jagdish Chandra Bose :: Theory of Evolution : ?
(1) Dr. Jayant V. Narlikar
(2) Albert Einstein
(3) S. S. Bhatnagar
(4) C. R. Rao
(5) Darwin

42. Maharashtra : Mumbai :: Rajasthan : ?

- (1) Udaipur
(2) Jodhpur
(3) Jaipur
(4) Gwalior
(5) Bikaner

43. Moscow : Russia :: Phnom Penh : ?

- (1) Cambodia
(2) Thailand
(3) Vietnam
(4) North Korea
(5) Mongolia

44. Flower : Rose :: Mammal : ?

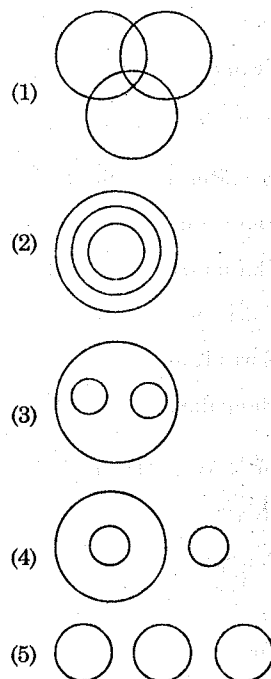
- (1) Hen
(2) Sparrow
(3) Cobra
(4) Cow
(5) Eagle

45. Food : Stomach :: Fuel : ?

- (1) Car
(2) Engine
(3) Bus
(4) Truck
(5) Train

**Directions :**

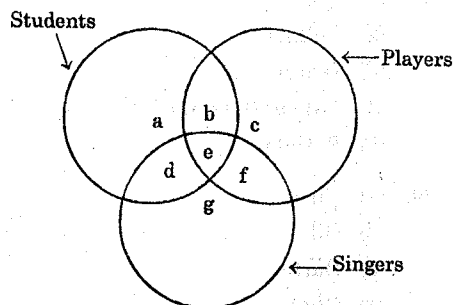
Questions (46 to 51) : These are based on the following diagrams. Study them carefully and indicate the correct answer as per the 'Instructions'.



46. Animals, Cows, Horses
 47. Doctors, Authors, Women
 48. District, Mandal, Village
 49. Parrots, Birds, Cats
 50. Fish, Tigers, Snakes
 51. Flowers, Jasmine, Banana

Directions :**Questions (52 to 56) :**

With the help of the diagram given below, answer the following questions making the right choice from the given alternatives. Indicate the answer as per the 'Instructions'.



52. Which letter indicates students who are players but not singers ?

- (1) d
 (2) c
 (3) b
 (4) a
 (5) e

53. Which letter indicates students who are neither players nor singers ?

- (1) a
 (2) b
 (3) e
 (4) d
 (5) f



54. Which letter indicates those who are both players and singers but not students ?

- (1) e
 (2) d
 (3) b
 (4) c
 (5) f

55. Which letter indicates those who are players, singers and also students ?

- (1) f
 (2) e
 (3) b
 (4) d
 (5) c

56. Which letter indicates singers who are neither players nor students ?

- (1) b
 (2) d
 (3) f
 (4) g
 (5) e

Directions :**Questions (57 to 61) :**

If in a language (English), A is coded as 1, B is coded as 2, C is coded as 3, and so on, how are the following letter-groups coded in that language (English) ?

After identifying the right answer, indicate it as per the 'Instructions'.

57. BEDA

- (1) 2514
 (2) 2154
 (3) 2541
 (4) 2415
 (5) 2451

58. DCAFI

- (1) 43169
 (2) 43619
 (3) 43196
 (4) 41396
 (5) 41369

59. EGBDC

- (1) 58234
 (2) 58243
 (3) 57324
 (4) 57243
 (5) 57234

60. AHCBE

- (1) 18235
 (2) 18325
 (3) 18253
 (4) 28225
 (5) 18352

61. BEHHG

- (1) 25886
 (2) 24887
 (3) 24867
 (4) 25868
 (5) 25887

Directions :**Questions (62 to 66) :**

If HEART is coded as 12345 and DISK as 6789 respectively, how are the following words coded ? Identify the right answer and indicate it as per the "Instructions".

62. KITE

- (1) 9751
 (2) 9752
 (3) 9652
 (4) 8752
 (5) 9572



63. TASTE

- (1) 53851
- (2) 53582
- (3) 53852
- (4) 51853
- (5) 51852

64. HARD

- (1) 1346
- (2) 1345
- (3) 1347
- (4) 1246
- (5) 1247

65. DARK

- (1) 6149
- (2) 6159
- (3) 6259
- (4) 6349
- (5) 6348

66. RAKE

- (1) 4391
- (2) 4195
- (3) 4194
- (4) 4382
- (5) 4392

Directions :**Questions (67 to 76) :**

The following questions are based on simple arithmetic principles. There are five alternatives given under each question. Identify the right answer and indicate it as per the 'Instructions'.

67. $4789 + ? = 6500$

- (1) 1701
- (2) 1611
- (3) 1711
- (4) 1601
- (5) 2711

68. $55555 + 5555 + 555 = ?$

- (1) 60655
- (2) 61665
- (3) 60605
- (4) 61655
- (5) 61660

69. $(14 - 9)^3 = ?$

- (1) 124
- (2) 216
- (3) 64
- (4) 125
- (5) 196

70. $\sqrt{36} + \sqrt{x} = 14$

- (1) 64
- (2) 49
- (3) 36
- (4) 81
- (5) 60



71. $5678 - ? = 4321$

- (1) 1257
- (2) 1358
- (3) 1347
- (4) 1247
- (5) 1357

72. 15% of 90 = ?

- (1) 12.5
- (2) 13.0
- (3) 14.0
- (4) 13.5
- (5) 14.5

73. $0.5 \times 0.0008 = ?$

- (1) 0.004
- (2) 0.04
- (3) 0.00004
- (4) 0.0014
- (5) 0.0004

74. $\frac{4}{7}$ of 294 = ?

- (1) 168
- (2) 166
- (3) 158
- (4) 128
- (5) 188

75. $8.512 - 4.4011 = ?$

- (1) 4.0109
- (2) 4.1119
- (3) 4.1109
- (4) 4.1110
- (5) 4.1100

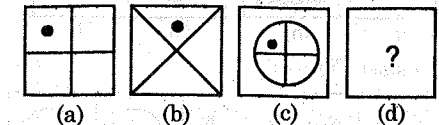
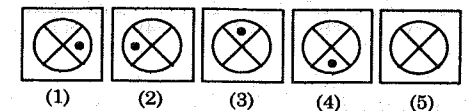
76. $6464 \div 8 = ?$

- (1) 818
- (2) 808
- (3) 880
- (4) 908
- (5) 828

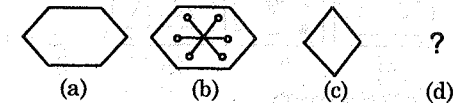
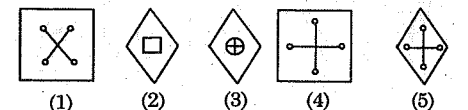
Directions :**Questions (77 to 82) :**

In each of these questions, there are four problem figures (a), (b), (c) and (d). Figure (d) is vacant shown by a question mark '?'. Figure (b) bears a certain relationship to (a). Similarly one of the answer figures bears similar relationship to (c). Find this out and indicate it as per the 'Instructions'.

77.

Problem Figures**Answer Figures**

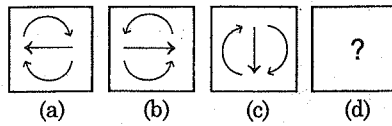
78.

Problem Figures**Answer Figures**

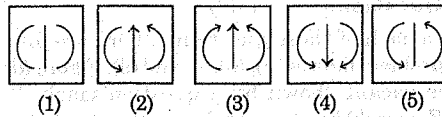


79.

Problem Figures

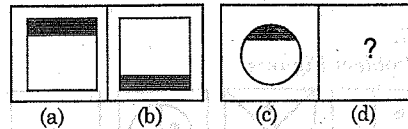


Answer Figures

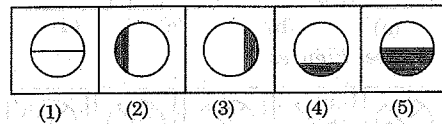


80.

Problem Figures

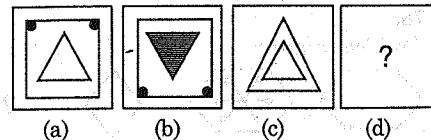


Answer Figures

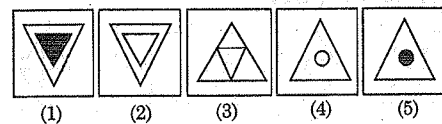


81.

Problem Figures

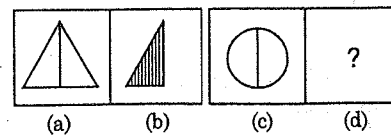


Answer Figures

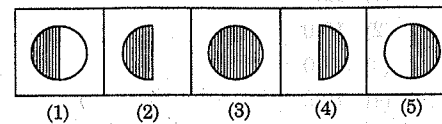


82.

Problem Figures



Answer Figures

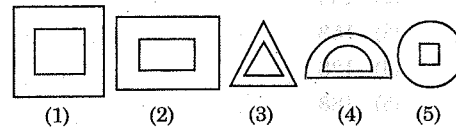


Directions :

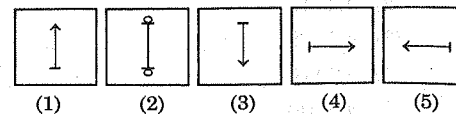
Questions (83 to 86) :

Out of the five given figures in each question, four figures are similar based on some common feature. One is different from them. Find out that figure and indicate it as per the 'Instructions'.

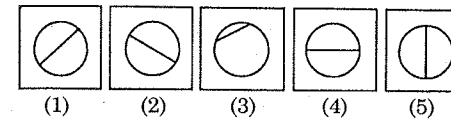
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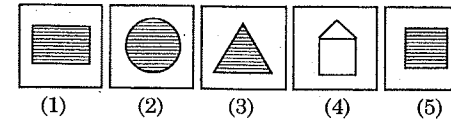
84.



85.



86.



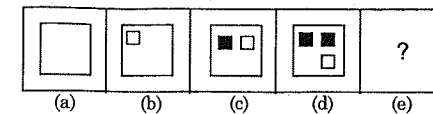
Directions :

Questions (87 to 90) :

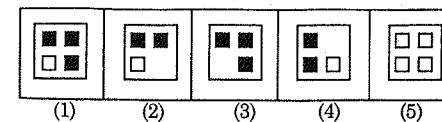
In the following questions, there are five problem figures (a), (b), (c), (d) and (e). (e) is blank shown by a question mark '?'. Choose one answer figure to fill the blank and continue the series. Identify the right answer and indicate as per the 'Instructions'.

87.

Problem Figures

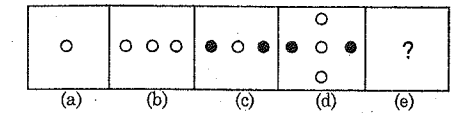


Answer Figures

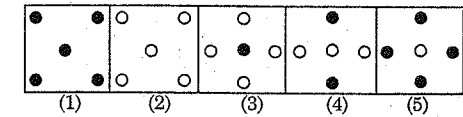


88.

Problem Figures

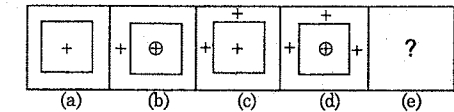


Answer Figures

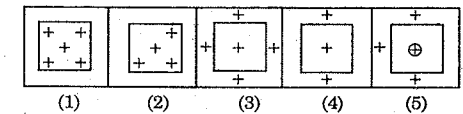


89.

Problem Figures

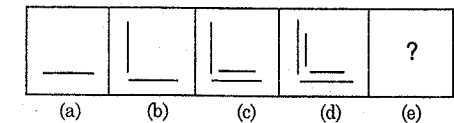


Answer Figures

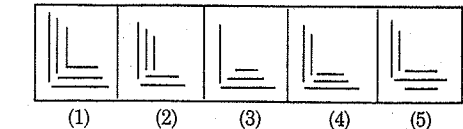


90.

Problem Figures



Answer Figures





Space for Rough Work



PART – II
SCHOLASTIC TEST

Time : 90 Minutes**Max. Marks : 90****Note :****(i) Subjects, Question Sr. No. and Marks allotted :**

(1) Physics	91 to 102 Questions	12 Marks
(2) Chemistry	103 to 113 Questions	11 Marks
(3) Biology	114 to 125 Questions	12 Marks
(4) Mathematics	126 to 145 Questions	20 Marks
(5) History	146 to 155 Questions	10 Marks
(6) Geography	156 to 165 Questions	10 Marks
(7) Political Science	166 to 175 Questions	10 Marks
(8) Economics	176 to 180 Questions	05 Marks

(ii) SHADE the circle having the correct alternative in the OMR Sheet provided, from amongst the ones given against the corresponding question in the Question Paper Booklet. For shading the circles, use a **HB Pencil**.

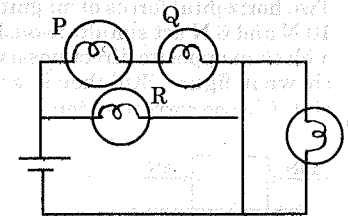


PHYSICS

91. The distance between the fixed points of a thermometer is 20 cm. If the level of the mercury in it is 13 cm, the temperature in Celsius scale is

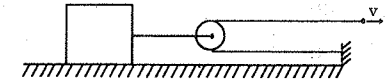
(1) 50°C
(2) 65°C
(3) 55°C
(4) 75°C

92. A circuit is shown in the figure. The bulbs used in the circuit are identical. Which bulb does not glow ?



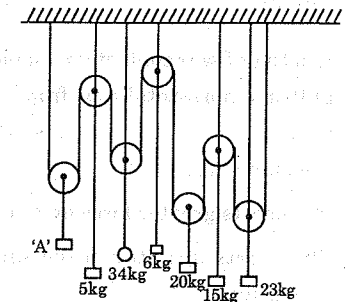
(1) S
(2) Q
(3) R
(4) P

93. Observe the system as shown in the figure. If the free end of a string is pulled horizontally at a constant speed of $v = 2 \text{ cm/s}$, then the speed of a block is



(1) 3 cm/s
(2) 2 cm/s
(3) 1 cm/s
(4) 4 cm/s

94. Observe the system shown in figure. Every object (block or pulley) in the system is at rest. Neglect the masses of pulleys and strings. The mass of the object 'A' is



(1) 20 kg
(2) 10 kg
(3) 15 kg
(4) 23 kg



95. A ray of light falls perpendicular to the reflecting surface of a plane mirror. The angle of reflection is
- 90°
 - 180°
 - 360°
 - 0°
96. The distance covered by an oscillating particle in 10 S is 1000 cm and the amplitude of it is 1 cm. The frequency of it is _____ oscillations/second.
- 25
 - 50
 - 100
 - 75
97. In a tug-of-war contest, two men pull on a horizontal rope from opposite sides. The winner will be the man who
- exerts greater force on a rope
 - exerts greater force on the ground
 - exerts a force on the rope which is greater than the tension in the rope
 - makes a smaller angle with vertical

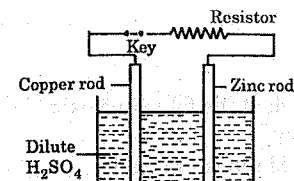
98. Three bodies A, B and C are at the same temperature. B and C are only in thermal contact and are not interacting with surroundings. A is also not interacting with surroundings. Which is true?
- A and C are in thermal equilibrium
 - B and C are in thermal equilibrium
 - A, B and C are in thermal equilibrium
 - A and B are in thermal equilibrium
99. A man in car travels from a town P to town Q with an average speed 40 km/hr and town Q to town P with an average speed 50 km/hr. The average speed of the entire journey is
- 45 km/hr
 - 44 km/hr
 - 46.2 km/hr
 - 44.4 km/hr
100. Two horizontal forces of magnitudes 10 N and 6 N act simultaneously on a block in opposite directions as shown in figure. Still then it is at rest. Choose correct option.



- Net force on the block is 4N
- Horizontal floor exerts a static friction of 4N on block along the direction of 10N
- Horizontal floor exerts a static friction of 4N on block along the direction of 6N
- Horizontal floor exerts a sliding friction of 4N on block along the direction of 6N



101. A simple cell is shown in the diagram. Which of the following is wrong?



- Hydrogen is given off at the copper rod
- Zinc rod is negatively charged and copper rod is not charged when the key is open
- Current flows from zinc rod to copper rod through the electrolyte
- The concentration of H_2SO_4 is unaffected

102. Electric charges A and B are attracted to each other. Electric charges B and C repel each other. If A and C are held close together, they will
- not affect each other
 - repel
 - attract
 - more information is needed



CHEMISTRY

103. Which of the following is used to remove grease stains ?
 (1) Potassium hydroxide
 (2) Ammonium hydroxide
 (3) Calcium hydroxide
 (4) Aluminium hydroxide
104. Burning sensation we feel, when bitten by an ant is due to
 (1) Formic acid
 (2) Acetic acid
 (3) Citric acid
 (4) Sulphuric acid
105. _____ is used in preparation of pickle.
 (1) Acetic acid
 (2) Citric acid
 (3) Carbonic acid
 (4) Oxalic acid
106. _____ gases are responsible for the formation of layer in greenish colour on copper vessel when it is exposed to air.
 (1) Oxygen and water vapour
 (2) Carbon dioxide and water vapour
 (3) Nitrogen and oxygen
 (4) Oxygen and carbon dioxide
107. Which of the following is called 'fake fur' ?
 (1) Nylon
 (2) Rayon
 (3) Polyester
 (4) Acrylic
108. Terylene is mixed with cotton to make
 (1) Terriwool (2) Polyester
 (3) Nylon (4) Terricot
109. Which of the following oxide is acidic ?
 (1) Magnesium oxide
 (2) Calcium oxide
 (3) Sulphur dioxide
 (4) Zinc oxide
110. The first component separated from petroleum is
 (1) Petrol
 (2) Diesel
 (3) Kerosene
 (4) Natural gas
111. Where does the complete combustion take place in the flame of a candle ?
 (1) Blue zone
 (2) Middle zone
 (3) Outer most zone
 (4) Dark zone
112. Which of the following is used to extinguish the fire of oil and petrol ?
 (1) Water
 (2) Carbon dioxide
 (3) Hydrogen
 (4) Oxygen
113. Which of the following is not a metal ?
 (1) Sodium (2) Sulphur
 (3) Magnesium (4) Silver



BIOLOGY

114. The hormone that controls emotions is
 (1) Growth hormone
 (2) Testosterone
 (3) Adrenalin
 (4) Luteinizing hormone
115. Example of an endemic species
 (1) Orchids
 (2) Peacock
 (3) Spanish flag
 (4) Kangaroo
116. External fertilization takes place in
 a) Frogs
 b) Human beings
 c) Birds
 d) Fish
 (1) a and b (2) a and c
 (3) a and d (4) b and d
117. Identify the mismatched pair.
 (1) Amoeba – binary fission
 (2) Yeast – multiple fission
 (3) Hydra – budding
 (4) Paramecium – binary fission
118. Which of the following disease does not spread through air ?
 (1) Typhoid
 (2) Swine flu
 (3) Tuberculosis
 (4) Mumps
119. Vaccine for rabies was invented by,
 (1) Alexander Flemming
 (2) Louis Pasteur
 (3) Edward Jenner
 (4) Jonas Salk
120. Iodine solution is used to test the presence of _____
 (1) Carbohydrates
 (2) Proteins
 (3) Mineral salts
 (4) Fats
121. In 1752, James Linds found that _____ disease can be cured by eating fresh fruits and vegetables.
 (1) Scurvy (2) Beri beri
 (3) Amoebiasis (4) Marasmus
122. An ant bite causes burning sensation and pain as _____ is released.
 (1) Citric acid
 (2) Formic acid
 (3) Hydrochloric acid
 (4) Formaldehyde
123. Which of the following food material consists of lactic acid ?
 (1) Amla
 (2) Curds
 (3) Vinegar
 (4) Apple
124. The indicator which changes acids into red colour and bases into yellow colour is
 (1) Milk of magnesium
 (2) Methyl orange
 (3) Phenolphthalein
 (4) Iodine
125. Which one of the following cells is in diploid stage ?
 (1) Sperm (2) Pollen grain
 (3) Ovum (4) Zygote



MATHEMATICS

126. Which one of the following is not a perfect cube ?

- (1) 175616000
- (2) 2048383
- (3) 60236288
- (4) 20971524

127. $1^3 + 2^3 = 3^2$, $1^3 + 2^3 + 3^3 = 6^2$,
 $1^3 + 2^3 + 3^3 + 4^3 = 10^2$ so $1^3 + 2^3 + 3^3$
 $+ 4^3 + 5^3 + 6^3 + 7^3 + 8^3 + 9^3 = ?$

- (1) 43^2
- (2) 44^2
- (3) 45^2
- (4) 46^2

128. Given that 'a' is a positive integer,
 find the value of $\sqrt{a + \sqrt{a + \sqrt{a + \dots}}}$

$$-\sqrt{a - \sqrt{a - \sqrt{a - \dots}}} = ?$$

- (1) 0
- (2) 1
- (3) -1
- (4) None of these

129. If $\sqrt{x-3} = y$ and $\sqrt{y-4} = z$. If
 $\sqrt{z-5} = 2$ then the value of 'x' is

- (1) 6129
- (2) 6565
- (3) 7103
- (4) 7228

130. If $3 : 5 = 4.5 : x$ then $x - 5 = ?$

- (1) 7.5
- (2) 5
- (3) 4.5
- (4) 2.5

131. Given $\frac{x}{y+x} = \frac{y}{z+x} = \frac{z}{x+y}$ then
 each fraction will be

- (1) $\frac{1}{2}$
- (2) -1
- (3) $\frac{1}{2}$ or -1
- (4) $\frac{1}{2}$ or 1

132. 8% of 400 - 4% of 800 + 1% of 500 = ?

- (1) 10
- (2) 20
- (3) 4
- (4) 5

133. The length and breadth of a
 rectangle are increased by 25% and

$33\frac{1}{3}\%$ respectively. The area will
 increase by

- (1) $33\frac{1}{3}\%$
- (2) 25%
- (3) $58\frac{1}{3}\%$
- (4) $66\frac{2}{3}\%$



134. $a + b = 123$, $b + c = 37$ and $c + a = 40$
 then $\sqrt{a + b + c} = ?$

- (1) 30
- (2) 20
- (3) 10
- (4) 18

135. If $x^{\sqrt{x}} = (\sqrt{x})^x$ then $x = ?$ given $x \neq 0$.

- (1) 2
- (2) 3
- (3) 4
- (4) 1

136. The value of $\frac{2^{n+2} - 2^{n+1}}{4 \times 2^{n-1}}$ is

- (1) 1
- (2) 2
- (3) 3
- (4) 4

137. When $2^4 \times 3^4 \times 5^4 \times 7$ is expressed
 as a single number, then the sum of
 its digits will be

- (1) 21
- (2) 19
- (3) 23
- (4) 18

138. Given that $3^x \cdot 3^y \cdot 3^z = 19683$, the
 average of x, y and z will be

- (1) 2
- (2) 3
- (3) 4
- (4) 4.5

139. The value of $\frac{a-5}{3a - \frac{5}{2 - \frac{2a}{1+a}}} = ?$

- (1) a
- (2) 2
- (3) $\frac{1}{5a}$
- (4) -3a

140. $x^n + 1$ is a factor of $x^{ab} + 1$, if b is

- (1) Odd number
- (2) Even number
- (3) Negative number
- (4) Radical

141. Area of a semi circle is 77 cm^2 . Its
 perimeter is equal to

- (1) 35 cm
- (2) 44 cm
- (3) 42 cm
- (4) 36 cm



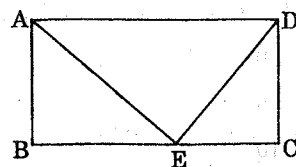
142. The angles of a triangle are in the ratio 1 : 1 : 2. Its sides will be in the ratio of

- (1) 1 : 1 : $\sqrt{2}$
- (2) 1 : $\sqrt{3}$: $\sqrt{2}$
- (3) 1 : 1 : $\sqrt{3}$
- (4) 1 : 2 : $\sqrt{3}$

143. The area of an equilateral triangle is $25\sqrt{3} \text{ cm}^2$. The area of a square with a side equal to the side of this triangle is

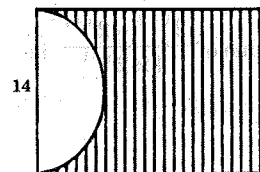
- (1) 75 cm^2
- (2) 100 cm^2
- (3) 125 cm^2
- (4) 120 cm^2

144. ABCD is a rectangle. The ratio of the areas of ABCD and AED is



- (1) $\sqrt{2} : 1$
- (2) 2 : 1
- (3) 3 : 1
- (4) $3 : \sqrt{2}$

145. A semi circle is drawn on a side of a square measuring 14 cm. The ratio between the areas of the shaded part and the square is



- (1) 17 : 28
- (2) 7 : 22
- (3) $\pi : 2$
- (4) 7 : 11



HISTORY

146. Who introduced the Ryotwari Settlement in South-India ?

- (1) Cornwallis
- (2) Thomas Munro
- (3) Henry Vivian Derozio
- (4) Lord Macaulay

147. Who organised The East India Association in London during 1866 ?

- (1) Surendranath Benerjee
- (2) Annie Besant
- (3) Dadabhai Naoroji
- (4) A. O. Hume

148. The people of which movement declared "Gandhiji's Swaraj" is coming and we will not pay taxes to this government.

- (1) Chirala-Perala Movement
- (2) Mepla Movement
- (3) Champaran Movement
- (4) All the above

149. After the death of Jyoti Rao Phule, who took over the responsibility of Satya Shodak Samaj ?

- (1) Tarabai Shinde
- (2) Pandita Ramabai Saraswati
- (3) Savitribai Phule
- (4) Keshav Chandra Sen

150. The first newspaper in Telugu was 'Krishna Patrika'. It was edited by

- (1) Mutnuri Krishna Rao
- (2) G. Subramanya Iyer
- (3) Dasarathi Krishnamacharya
- (4) Madapati Hanumantha Rao

151. Which among these is not correctly matched ?

- (1) Palas-Bengal
- (2) Cholas-Tamil Nadu
- (3) Kalinga-Orissa
- (4) Anarta-Kerala

152. This dynasty participated in the 'Tripartite Struggle' for Kanauj

- (1) Gurjara Pratihara
- (2) Rashtrakuta
- (3) Eastern Chalukyas
- (4) Palas

153. Who is the author of Kitab-Al-Hind ?

- (1) Al-Biruni
- (2) Ibn Battuta
- (3) Abdul Razzak
- (4) Amir Khusrov

154. Kandariya Mahadeva Temple was constructed by

- (1) Dhangadeva
- (2) Raja Raju
- (3) Rajendra - I
- (4) Amoghavarsha

155. "Hari dwells in the East, they say, And Allah resides in the West. Search for him in your heart, in the heart of your heart; There he dwells, Rahim - Ram". The above stanza was composed by

- (1) Kabir
- (2) Guru Nanak
- (3) Surdas
- (4) Chaitanya Maha Prabhu

**GEOGRAPHY**

156. Kundu is a tributary of this river
 (1) Krishna
 (2) Penna
 (3) Godavari
 (4) Kaveri
157. Amount of insolation reflected by clouds in the total insolation (100%) is
 (1) 6%
 (2) 51%
 (3) 20%
 (4) 16%
158. Which of these is the reason for formation of seasons?
 (1) Daily rotation of the earth on its own axis
 (2) The tilt of the axis of rotation compared to the plane on which the earth moves
 (3) The earth's movement around the sun once a year
 (4) All the above
159. Huge chunks of ice break off and float into the oceans as
 (1) Ice bergs
 (2) Glaciers
 (3) Permafrost
 (4) Ocean Currents
160. 'Joint Forest Management' policy was started in the year
 (1) 1972
 (2) 1966
 (3) 1988
 (4) 2002
161. Largest reserves of barytes in the world are located at
 (1) Bombay High
 (2) Mangampeta
 (3) Kothagudem
 (4) Agnigundala
162. "Dogger Bank" is located at this sea
 (1) Mediterranean sea
 (2) Black sea
 (3) North sea
 (4) Caspian sea
163. The mountains to the north-west of Africa are
 (1) Drakens Berg Mountains
 (2) Kilimanjaro
 (3) Caucasus Mountains
 (4) Atlas Mountains
164. Name the winds which cause heavy rainfall in the coastal areas of Andhra Pradesh during October – December.
 (1) South-west monsoons
 (2) North-east monsoons
 (3) Loo winds
 (4) Western disturbances
165. Contour lines means
 (1) It is a line joining the places with equal heights
 (2) It is a line joining the places with equally recorded rainfall
 (3) It is a line joining the places with equally recorded pressure
 (4) It is a line joining the places with equally recorded salinity

**POLITICAL SCIENCE**

166. Which of the following statements is correct?
 (1) Constitution determines the relationship between people and government.
 (2) Democratic countries generally contain a Constitution.
 (3) To make a Constitution to a diverse country like India is not an easy task.
 (4) All are correct.
167. Which of the following is not a Republic State?
 (1) United States of America
 (2) England
 (3) India
 (4) France
168. The number of Constituencies reserved for St's (Schedule tribes) in the Lok Sabha are
 (1) 79
 (2) 58
 (3) 30
 (4) 41
169. This subject is in the Concurrent List
 (1) Country's defence
 (2) Sales tax
 (3) Health care
 (4) Electricity
170. Which of the following is correct about the formation of Central Government?
 (1) Party or coalition that has support of the President forms the government.
 (2) Party or coalition with number of seats forms the government.
 (3) Party or coalition with more than half the seats forms the government.
 (4) Election Commission selects the party that forms the government.
171. Which of the following statements is not correct?
 (1) An F.I.R. is filled in the police station.
 (2) Being arrested by the police is equal to being punished.
 (3) A bail is given on the basis of securities.
 (4) Supreme Court is the highest court in the country.



172. What we know as Bharatanatyam today springs from

- (1) Kuravanji
- (2) Gusadi
- (3) Sadirnatyam
- (4) Natikari Dhimsa

173. The share of the members elected by the teachers for Legislative Council

- (1) $\frac{1}{12}$
- (2) $\frac{1}{6}$
- (3) $\frac{1}{3}$
- (4) $\frac{1}{24}$

174. When was the 'Andhra Pradesh Water, Land and Trees Protection Act (APWALTA)' made ?

- (1) 2005
- (2) 2002
- (3) 2009
- (4) 2013

175. According to the Preamble of the Constitution, India is a

- (1) Sovereign, Democratic, Socialistic and Republic
- (2) Sovereign, Socialist, Secular and Republic
- (3) Sovereign, Democratic and Republic
- (4) Sovereign, Socialist, Secular, Democratic and Republic



ECONOMICS

176. Which of these cities does not have any domestic airport ?

- (1) Renigunta
- (2) Puttaparthi
- (3) Rajahmundry
- (4) Kurnool

177. When is the Road Safety Week celebrated ?

- (1) First week of every year
- (2) Second week of every year
- (3) Third week of every year
- (4) Fourth week of every year

178. India stands in which place in the making of medicines ?

- (1) First
- (2) Second
- (3) Third
- (4) Fourth

179. Who started the 'Assembly line method' of production to produce more cars quickly ?

- (1) Henry Ford
- (2) Boulton
- (3) George Stephenson
- (4) Franklin

180. Expand ATM.

- (1) Automatic Telling Machine
- (2) Automatic Teller Machine
- (3) Any Time Money
- (4) Any Time Mobile