Grade 8


## CREST Mental Maths Olympiad (CMMO) Sample Paper

| Pattern and Marking Scheme |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Grade | Topic/Section | No. of <br> Questions | Marks per <br> Question | Total <br> Marks |
| Grade 8 | Basique | 80 | 3 | 240 |
|  | Avance | 20 | 6 | 120 |
| Grand Total |  | $\mathbf{1 0 0}$ |  | $\mathbf{3 6 0}$ |

The total duration of the exam is 60 minutes.
Note: For every incorrect answer, there's a penalty of $\frac{1}{3}$ rd of the total marks allotted to that question.

## Syllabus

## Number System

a. Integers
b. Rational number and its properties

## Algebra

a. Algebraic expressions
b. Simple equations

## Square and Square Roots

a. Square of a number
b. Square roots
c. Square roots of decimals

## Cube and Cube Roots

a. Cube of a number
b. Cube roots

## Comparing Quantities

a. Ratio and proportion
b. Percentage
c. Profit and loss
d. Simple interest
e. Compound interest
f. Problems on ages
g. Time and work
h. Average
i. Partnership
j. Time and distance

## Mensuration

a. Area of Shapes (Trapezium, General quadrilateral \& Circle)
b. Surface area of cube
c. Surface area of cuboid
d. Surface area of cylinder
e. Surface area of cone, etc.
f. Volume of cube
g. Volume of cuboid
h. Volume of cylinder
i. Volume of cone, etc.

## Playing with Numbers

a. Exponents
b. Mathematical reasoning
c. Tests of divisibility
d. H.C.F and L.C.M
e. Numbers pattern

## Data Handling and Symmetry

a. Bar graph
b. Line graph
c. Symmetry

## Geometry

a. Lines and angles

For more details, visit https://www.crestolympiads.com/mental-maths-mmo

## Basique (Each Question is 3 Marks)

1. Solve: $7^{2}+8^{2}-11^{2}$
a. 12
b. -7
c. -8
d. 5
2. What is the square root of 1156 ?
a. 32
b. 34
c. 36
d. 38
3. Find the cube root of 1728 ?
a. 8
b. 9
c. 11
d. 12
4. If the ratio of three numbers is $2: 3: 5$ and their product is 2700 , what is the smallest of the three numbers?
a. 180
b. 270
c. 450
d. 530
5. A clothing store has a total of 250 shirts in stock. If they sold $60 \%$ of the shirts, how many shirts are still left in the store?
a. 60
b. 08
c. 100
d. 120
6. What will come in place of question mark (?) in the number series?
$1,9,25,49,81$, ?
a. 99
b. 121
c. 144
d. 169
7. Sofia got $80,85,90,75$, and 70 marks in her five subjects. What is her average marks?
a. 80 marks
b. 85 marks
c. 90 marks
d. 95 marks
8. A train travels at a speed of $80 \mathrm{~km} / \mathrm{h}$ for 2 hours and then at a speed of $60 \mathrm{~km} / \mathrm{h}$ for the next 3 hours. What is the average speed of the train for the entire journey?
a. $52 \mathrm{~km} / \mathrm{h}$
b. $58 \mathrm{~km} / \mathrm{h}$
c. $62 \mathrm{~km} / \mathrm{h}$
d. $68 \mathrm{~km} / \mathrm{h}$
9. A pizza has a radius of 28 cm . What is the area of the pizza?
a. $2356 \mathrm{~cm}^{2}$
b. $2464 \mathrm{~cm}^{2}$
c. $2686 \mathrm{~cm}^{2}$
d. $2844 \mathrm{~cm}^{2}$
10. A circular garden has a diameter of 14 meters. What is the area of the garden?
a. $152 \mathrm{~m}^{2}$
b. $154 \mathrm{~m}^{2}$
c. $156 \mathrm{~m}^{2}$
d. $158 \mathrm{~m}^{2}$
11. Solve: $26^{8} / 28^{5}+14^{2}$
a. 21675
b. 21900
c. 22148
d. 23878
12. Simplify: $19^{2} \times 19^{0}+12$
a. 374
b. 376
c. 378
d. 380
13. Express the following number in usual form.
$2.42665 \times 10^{6}$
a. 2426650
b. 242655
c. 2426.55
d. 242.655
14. What is the highest common factor of 45,75 , and 135 ?
a. 5
b. 10
c. 15
d. 25
15. What is the term used to describe a pair of angles that add up to $180^{\circ}$ ?
a. Complementary angles
b. Supplementary angles
c. Corresponding angles
d. Alternate angles
16. What is the rational number between $1 / 3$ and $1 / 2$ ?
a. $1 / 3$
b. $2 / 3$
c. $3 / 8$
d. $9 / 8$
17. What is a rational number between 0.2 and 0.3 ?
a. $1 / 3$
b. $1 / 4$
c. $2 / 4$
d. $3 / 5$
18. Find the value:

$$
\frac{x}{2}+\frac{x}{3}+\frac{x}{4}
$$

a. $\frac{17 \mathrm{x}}{12}$
b. $\frac{17 \mathrm{x}}{8}$
c. $\frac{13 \mathrm{x}}{8}$
d. $\frac{13 \mathrm{x}}{12}$
19. Simplify the expression:
$(4 x-3 y)-(2 x+5 y)$
a. $2 x-8 y$
b. $3 x-7 y$
c. $2 y-3 x$
d. $3 y-7 x$
20. If $2 x+9=47$, Find $x$ :
a. 16
b. 14
c. 17
d. 19
21. Umex has three boxes of different fruits. A weighs 5 kg more than box $B$ and box weighs 10 kg more that box B . The total weight of three boxes is 48 kg . How many kg does box A weighs?
a. 8 kg
b. 4 kg
c. 16 kg
d. 11 kg
22. Find the value of $x$ :

$$
\frac{3}{4 x-5}=\frac{7}{2 x+3}
$$

a. 3
b. 4
c. 5
d. 2

23 . Find the square of 24 .
a. 647
b. 625
c. 336
d. 576
24. How much is $25^{2}-23^{2}$ ?
a. 96
b. 104
c. 89
d. 101
25. What will be the positive value of $x$, when $4(x+9)^{2}=676$ ?
a. 6
b. 8
c. 12
d. 4
26. Find: $(\sqrt{4900} \div 10)^{2}=$ $\qquad$
a. 70
b. 4900
c. 7
d. 49
27. Find the value of: $\sqrt{0.0081}$
a. 0.09
b. 0.9
c. 0.009
d. 0.03
28. What is $113-103$ ?
a. 221
b. 281
c. 381
d. 331
29. What will be the next number in the given series?

64, 125, 216, $\qquad$
a. 343
b. 256
c. 512
d. 296
30. Find the value of $x$ : $(216)^{x}=6^{8}$
a. 4
b. 5
c. 7
d. 9
31. Find the cube root of -1728 .
a. -14
b. -11
c. -13
d. -12
32. Fill in the blank:

The minimum number of digits in the cube of a 4-digit number is $\qquad$ .
a. 9
b. 8
c. 10
d. 11
33. Find the ratio of speed of a car and truck travelling 150 km in 3 hours and 120 km in 4 hours respectively.
a. $4: 5$
b. $7: 3$
c. $5: 3$
d. $3: 7$
34. What must be multiplied by each of the numbers $5,9,7$, and 12 to obtain the proportion numbers?
a. 3
b. 5
c. 4
d. 7
35. If a box contains 12 items and 3 of them are defective, what percentage of the items are defective?
a. $25 \%$
b. $18 \%$
c. $17 \%$
d. $20 \%$
36. A shopkeeper bought a watch for $\$ 600$ and sold it for $\$ 800$. What is his profit or loss?
a. $\$ 100$ loss
b. $\$ 200$ profit
c. \$200 loss
d. $\$ 100$ profit
37. A man bought a bicycle for $\$ 80$ and sold it for $\$ 100$. What is the profit percentage?
a. $25 \%$
b. $10 \%$
c. $55 \%$
d. $40 \%$
38. Fill in the blank:
S. P. $=\frac{100+\text { Profit } \%}{} \times$ C. P.
a. Loss
b. 100
c. Profit\%
d. Profit
39. Anni has taken a loan of $\$ 9000$ at a simple interest rate of $12 \%$ per annum for 4 years. Calculate the simple interest she will have to pay.
a. $\$ 4,230$
b. $\$ 4,106$
c. $\$ 4,016$
d. $\$ 4,320$
40. If father is twice as old as his son and also 29 years older than his son. What is the age of father?
a. 58 years
b. 48 years
c. 53 years
d. 47 years
41. The age of father is 30 years more than that of his son. 5 years hence father's age will be thrice of his son's age, find son present ages.
a. 12 years
b. 10 years
c. 15 years
d. 40 years
42. 30 persons can complete a piece of work in 18 days. How many more persons needed if the work is to be completed in 12 days?
a. 12
b. 24
c. 15
d. 13
43. 16 persons need 56 kg of rice in 1 week. How much rice will be needed by 24 persons in four weeks?
a. 336 kg
b. 324 kg
c. 431 kg
d. 423 kg
44. The marks obtained by ten students in Mathematics in the annual examination are as follows: $76,61,87,56,42,64,73,68,50,73$.
What is their average marks in mathematics?
a. 45
b. 35
c. 65
d. 64
45. James, Nike and Scott started a business in partnership by investing in the ratio of $6: 5: 8$ respectively. At the end of the year, they earned a profit of $\$ 83,600$. What will be Scott's share?
a. $4: 5$
b. $3: 1$
c. $2: 7$
d. $5: 3$
46. Raxon started a business by investing $\$ 45,000$. 6 months later joined him with $\$ 30,000$. In what ratio should the earned profit be distributed at the end of the year?
a. $\$ 24,700$
b. $\$ 39,290$
c. $\$ 32,895$
d. $\$ 35,200$
47. Find the missing number:
$1,3,6,10,15$, ?
a. 21
b. 19
c. 17
d. 20
48. Find the missing number:
$4,9,16,25$, ?
a. 30
b. 28
c. 36
d. 32
49. A bus travels at a speed of $80 \mathrm{~km} / \mathrm{h}$ and covers a distance of 200 km . How long does the journey take?
a. 3.3 hrs
b. 5.3 hrs
c. 2.5 hrs
d. 3.5 hrs
50. In the given figure, PQRS is a trapezium. $P Q \| R S$ and $P S=Q R$. What are the values of $x^{\circ}$ and $\mathrm{y}^{\circ}$ ?

a. $115^{\circ}, 38^{\circ}$
b. $85^{\circ}, 35^{\circ}$
c. $95^{\circ}, 35^{\circ}$
d. $95^{\circ}, 25^{\circ}$
51. In a trapezium, the sum of the lengths of the parallel sides is 32 cm and the area of the trapezium is $128 \mathrm{~cm}^{2}$. Calculate the distance between the parallel sides.
a. 9 cm
b. 8 cm
c. 11 cm
d. 12 cm
52. ABCD is a quadrilateral, Find $x$ :

a. $110^{\circ}$
b. $105^{\circ}$
c. $115^{\circ}$
d. $107^{\circ}$
53. PQRS is a rhombus. If $\mathrm{PO}=4 \mathrm{~cm}$ and $\mathrm{OQ}=3 \mathrm{~cm}$ then what is $\mathrm{PR}+\mathrm{SQ}$ ?

a. 14 cm
b. 19 cm
c. 12 cm
d. 11 cm
54. What is the total surface area of a solid hemisphere whose curved surface area is $416 \mathrm{~cm}^{2}$ ?
a. $624 \mathrm{~cm}^{2}$
b. $636 \mathrm{~cm}^{2}$
c. $611 \mathrm{~cm}^{2}$
d. $644 \mathrm{~cm}^{2}$
55. Two cubes each of 10 cm edge are joined end-to-end. Calculate the surface area of the resulting cuboid.

a. $100 \mathrm{~cm}^{2}$
b. $1000 \mathrm{~cm}^{2}$
c. $10 \mathrm{~cm}^{2}$
d. $10000 \mathrm{~cm}^{2}$
56. The surface of two hemisphere in the ratio $4: 16$. What is the ratio of their radii?
a. $3: 6$
b. $4: 3$
c. $5: 4$
d. $2: 4$
57. Volume of a cube is $1331 \mathrm{~cm}^{3}$. What is the length of each side?
a. 13 cm
b. 8 cm
c. 11 cm
d. 14 cm
58. Find the volume of a cylinder whose base area is $154 \mathrm{~cm}^{2}$ and the curved surface area is 440 $\mathrm{cm}^{2}$.
a. $1540 \mathrm{~cm}^{3}$
b. $1740 \mathrm{~cm}^{3}$
c. $1530 \mathrm{~cm}^{3}$
d. $1760 \mathrm{~cm}^{3}$
59. Find the next term in the alphanumeric series:

Z1A, X2D, V6G, T21J, R88M, P445P, ?
a. T2676N
b. T2670N
c. N2676S
d. N2676T
60. Find the term which does not fit into the series given below: G4T, J10R, M20P, P43N
a. G4T
b. J10R
c. M20P
d. P43N
61. If x stands for - , / stands for + , + stands for / and - stands for x , which one of the following equations is correct?
a. $15-5 / 5 \times 20+10=6$
b. $3 / 7-5 \times 10+3=10$
c. $8 / 10-3+5 \times 6=8$
d. $6 \times 2+3 / 12-3=15$
62. Which number is divisible by both 2 and 3 ?

12345, 24680, 20304, 8007, 8642
a. 12345
b. 8007
c. 20304
d. 8642
63. Which number is divisible by 12 ? 248632, 532878, 904672, 135792, 68176
a. 135792
b. 532878
c. 248632
d. 68176
64. Which number is divisible by 16 ? 46412892, 17427894, 7823682, 501008
a. 7823682
b. 501008
c. 46412892
d. 17427894
65. Sam spends $1 / 4$ portion of a day studying at school, $1 / 12$ portion playing out, $1 / 3$ portion studying at home, in the remaining time, he does other work and takes rest. What portion of the day does he spend studying and playing?
a. $3 / 3$ portion
b. $4 / 3$ portion
c. $2 / 3$ portion
d. 1/3 portion
66. $1 / 5$ portion of a bamboo is in mud, $2 / 5$ portion is in water and the remaining portion is above water. What portion is above water?
a. $2 / 5$ portion
b. $3 / 4$ portion
c. $1 / 2$ portion
d. $3 / 7$ portion
67. The graph shows analysis of first five overs of a team in a T-20 match. Study it and answer the question:
When the first wicket was down, what was the score?

a. 12
b. 2
c. 8
d. 10
68. Given below is the line graph, which shows the height of Nathan during his ages.

Answer the question based on a line graph.
During which year did Nathan grow the most?
Nathan's Growth

a. 14-16
b. 12-14
c. 8-10
d. 10-12
69. In the given rectangle, state the number of lines of symmetry.

a. 2
b. 4
c. 6
d. 3
70. Find the number of lines of symmetry in the given figure:

a. 1
b. 0
c. 3
d. 4
71. Find y in the given figure.

a. $60^{\circ}$
b. $30^{\circ}$
c. $45^{\circ}$
d. $55^{\circ}$
72. Find K in the given figure.

a. $32^{\circ}$
b. $65^{\circ}$
c. $47^{\circ}$
d. $53^{\circ}$
73. Evaluate:
$(-1) \times(-2) \times(-3) \times(-4) \times(-5)$
a. -120
b. -140
c. -100
d. 80
74. Determine the integer when it is divided by ( -9 ), the answer is 23 .
a. -198
b. -207
c. -177
d. -210
75. Solve for "x":
$69.69-51.54+73.64=x+32.42$
a. 56.14
b. 57.12
c. 59.37
d. 52.42
76. Solve: $\sqrt{52 \times 27 \div 6+26-4}=$ ?
a. 20
b. 23
c. 25
d. 21
77. Solve: $1 \frac{1}{4}+1 \frac{5}{9} \times 1 \frac{5}{8} \div 6 \frac{1}{2}=$ ?
a. $1 \frac{23}{36}$
b. $2 \frac{3}{4}$
C. $1 \frac{21}{36}$
d. $2 \frac{24}{36}$
78. Express the figure given below as a rational number.

a. $\frac{12}{8}$
b. $\frac{4}{8}$
C. $\frac{6}{8}$
d. 1
79. The sum of two rational numbers is -8 . If one of the numbers is $\frac{-21}{8}$. Find the other number.
a. $\frac{-43}{8}$
b. $\frac{-25}{8}$
C. $\frac{-37}{8}$
d. $\frac{-53}{8}$
80. The product of two rational numbers is $\frac{15}{11}$. If one rational number is $\frac{5}{9}$ then find the other.
a. $\frac{29}{11}$
b. $\frac{27}{11}$
C. $\frac{24}{11}$
d. $\frac{23}{11}$

## Avance (Each Question is 6 Marks)

81. A circular swimming pool has a circumference of 66 meters. What is the area of the pool?
a. $574 \mathrm{~m}^{2}$
b. $592 \mathrm{~m}^{2}$
c. $601 \mathrm{~m}^{2}$
d. $616 \mathrm{~m}^{2}$
82. Evaluate: $\left(9^{3}-6^{3}\right) \times(3 / 5)^{-3}$
a. 2265
b. 2375
c. 2475
d. 2585
83. Simplify the expression:
$(14 x-3 y)(2 x+25 y)-(-45 x+21 y)$
a. $32 x^{2}-84 y^{2}+339 x y-11 y$
b. $28 x^{2}-75 y^{2}+389 x y-21 y$
c. $13 x^{2}-44 y^{2}+239 x y-51 y$
d. $23 x^{2}-44 y^{2}+321 x y-23 y$
84. Find the value of $x$.

$$
\frac{4+x}{3}+\frac{7}{4}=\frac{3-x}{2}+\frac{5}{4}
$$

a. $3 / 5$
b. $-2 / 5$
c. $-7 / 5$
d. $8 / 5$
85. Find: $\sqrt{16} \times \sqrt{49} \times \sqrt{121}$
a. 197
b. 308
c. 279
d. 348
86. Find: $\sqrt{\sqrt[3]{343} \times \sqrt{784}}=$ $\qquad$
a. 18
b. 14
c. 19
d. 12
87. The price of a computer is $\$ 48,000$. The sales tax charged was $4 \%$, what is the amount to be paid by Mr. Jordan?
a. $\$ 42,099$
b. $\$ 47,970$
c. $\$ 49,920$
d. $\$ 49,862$
88. If a dress is priced at $\$ 60$ and is on sale for $20 \%$ off, how much will the dress cost?
a. $\$ 26$
b. $\$ 32$
c. $\$ 34$
d. $\$ 48$
89. If you deposit $\$ 1000$ in a savings account with an interest rate of $2 \%$ per year, how much will you have in the account after 2 years?
a. 1822.2
b. 1040.4
c. 1038.2
d. 103.82
90. Average of marks obtained by 105 candidates in a certain examination is 25 . If the average marks of passed candidates is 29 and that of the failed candidates is 10 , what is number of candidates who passed the examination?
a. 82.9
b. 80
c. 85
d. 88.34
91. If 14 meters is covered by a man in 1 sec then in 4 hours 60 minutes how many kilometers will be covered by him?
a. $43.2 \mathrm{~km} / \mathrm{sec}$
b. $53.2 \mathrm{~km} / \mathrm{sec}$
c. $40.8 \mathrm{~km} / \mathrm{sec}$
d. $32.5 \mathrm{~km} / \mathrm{sec}$
92. PQRS is a parallelogram. If $P S=10 \mathrm{~cm}$ and $\angle \mathrm{SPQ}=30^{\circ}$ and the area of the parallelogram is $55 \sqrt{ } 3 \mathrm{~cm}^{2}$, then find the length of $P Q$ (in cm ).
a. $9 \sqrt{ } 3$
b. $12 \sqrt{ } 3$
c. $11 \sqrt{ } 3$
d. $15 \sqrt{ } 3$
93. Volume of a metal sphere is $38808 \mathrm{~cm}^{3}$. Find the surface area of sphere.
a. $4558 \mathrm{~cm}^{2}$
b. $5836 \mathrm{~cm}^{2}$
c. $5544 \mathrm{~cm}^{2}$
d. $4544 \mathrm{~cm}^{2}$
94. Find the volume of a sphere whose radius is 8 cm .
a. $557.6 \mathrm{~cm}^{3}$
b. $458.83 \mathrm{~cm}^{3}$
c. $386.6 \mathrm{~cm}^{3}$
d. $523.6 \mathrm{~cm}^{3}$
95. If $L$ denotes $/, M$ denotes $x, P$ denotes + and $Q$ denotes -, then which of the following statements is true?
a. $32 \mathrm{P} 8 \mathrm{~L} 16 \mathrm{Q} 4=3 / 2$
b. $6 \mathrm{M} 18 \mathrm{Q} 26 \mathrm{~L} 13 \mathrm{P} 7=173 / 13$
c. $11 \mathrm{M} 34 \mathrm{~L} 17 \mathrm{Q} 8 \mathrm{~L} 3=38 / 3$
d. $9 \mathrm{P} 9 \mathrm{~L} 9 \mathrm{Q} 9 \mathrm{M} 9=-72$
96. What is the least multiple of 7 , which when divided by $2,3,4,5$ and 6 , leaves the remainders $1,2,3,4,5$ respectively?
a. 116
b. 119
c. 124
d. 134
97. The given histogram shows the height of 42 students in the class. Study carefully and answer the questions:
i. How many students are having height equal to 155 or less?
ii. How many students have height equal to 160 or more?

a. $\mathrm{i}-14, \mathrm{ii}-12$
b. i-12, ii - 28
c. $\mathrm{i}-12$, ii -14
d. $\mathrm{i}-4, \mathrm{ii}-2$
98. In the given figure, find the:
i. Order of rotational symmetry.
li. Degree measure of the angle of rotation.

a. $\mathrm{i}-4, \mathrm{ii}-90^{\circ}$
b. $\mathrm{i}-3$, ii $-90^{\circ}$
c. $\mathrm{i}-3, \mathrm{i}-360^{\circ}$
d. $\mathrm{i}-4, \mathrm{ii}-360^{\circ}$
99. The table gives the percentage of marks obtained by seven students in six different subjects in an examination. Study the table and answer the question based on it. The number in the brackets represents maximum marks in that subject.
Find the number of students who obtained $60 \%$ or above marks in all subjects.

| Students | Subject (Maximum Marks) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Maths <br> $(\mathbf{1 5 0})$ | Chemistry <br> $\mathbf{( 1 3 0 )}$ | Physics <br> $\mathbf{( 1 2 0 )}$ | Geography <br> $\mathbf{( 1 0 0 )}$ | History <br> $\mathbf{( 6 0 )}$ | Computer <br> Science (40) |
| Jix | 90 | 50 | 90 | 60 | 70 | 80 |
| Max | 100 | 80 | 80 | 40 | 80 | 70 |
| Sem | 90 | 60 | 70 | 70 | 90 | 70 |
| Gils | 80 | 65 | 80 | 80 | 60 | 60 |
| Morrin | 80 | 65 | 85 | 95 | 50 | 90 |
| Karl | 70 | 75 | 65 | 85 | 40 | 60 |
| Leo | 65 | 35 | 50 | 77 | 80 | 80 |

a. 1
b. 2
c. 2
d. 4
100. The difference between one-fourth of a number and one-seventh of the same number is 24 . Identify the number.
a. 210
b. 242
c. 231
d. 224

## Answer Key

| 1. | c | 2. | b | 3. | d | 4. | a | 5. | c | 6. | b | 7. | a |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 8. | d | 9. | b | 10. | a | 11. | c | 12. | a | 13. | a | 14. | c |
| 15. | b | 16. | c | 17. | b | 18. | d | 19. | a | 20. | d | 21. | c |
| 22. | d | 23. | d | 24. | a | 25. | d | 26. | d | 27. | a | 28. | d |
| 29. | a | 30. | b | 31. | d | 32. | c | 33. | c | 34. | a | 35. | a |
| 36. | b | 37. | a | 38. | b | 39. | d | 40. | a | 41. | b | 42. | c |
| 43. | a | 44. | c | 45. | b | 46. | d | 47. | a | 48. | c | 49. | c |
| 50. | d | 51. | b | 52. | d | 53. | a | 54. | a | 55. | b | 56. | d |
| 57. | c | 58. | a | 59. | c | 60. | b | 61. | c | 62. | c | 63. | a |
| 64. | b | 65. | c | 66. | a | 67. | d | 68. | b | 69. | a | 70. | b |
| 71. | b | 72. | d | 73. | a | 74. | b | 75. | c | 76. | a | 77. | a |
| 78. | b | 79. | a | 80. | b | 81. | d | 82. | b | 83. | b | 84. | b |
| 85. | b | 86. | b | 87. | c | 88. | d | 89. | b | 90. | a | 91. | a |
| 92. | c | 93. | c | 94. | d | 95. | d | 96. | b | 97. | c | 98. | a |
| 99. | b | 100. | d |  |  |  |  |  |  |  |  |  |  |

