

## RAISE 2018

(Reynott Academics and Intelligence Scholarship Examination)

MM : 360

### SAMPLE PAPER (CLASS VIII)

Time : 120 Minutes

#### GENERAL INSTRUCTIONS :

- All questions are compulsory.
- Blank paper, clipboard, log tables, calculators, cellular phones and electronic gadgets in any form are not allowed inside the examination hall.
- Use only HB Pencil for filling the OMR. Do not use Gel/ Ink/ Felt pen as it might smudge the OMR.
- For each right answer you will be awarded 4 marks if you darken the bubble corresponding to the correct answer and zero marks if no bubble is darkened. In case of bubbling of incorrect answer, NO NEGATIVE MARK will be awarded.
- This Question Paper consists of 90 questions. Please check before starting to attempt. The question paper consists of five Sections, Section-A (Physics: 1 to 15), Section-B (Chemistry: 16 to 30), Section-C (Biology: 31 to 45), Section-D (Mathematics: 46 to 70), Section-E (Mental Ability: 71 to 90).

#### Section-A (PHYSICS)

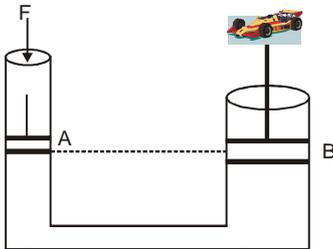
- The necessary force required in Newton to produce a pressure of 50 Newton/metre<sup>2</sup> on a rectangle of area 10 square metre will be :
  - 500
  - 60
  - 5
  - 0.2
- Four bodies are of  $m$ ,  $2m$ ,  $3m$ ,  $4m$  masses. In which body acceleration produced will be maximum on applying equal amount of force on each one of them.
  - $m$
  - $2m$
  - $3m$
  - $4m$
- 20 Joules work is done in displacing a body by 4 metre in the direction of the force. The value of the force applied in newton is :
  - 4
  - 5
  - 24
  - 80
- Some physical quantities and their units are given in column-I and II respectively.
 

<b>Column-I</b>	<b>Column-II</b>
(A) Momentum	(i) $\frac{\text{Kg.} \times \text{m}}{\text{Sec.}}$
(B) Pressure	(ii) Newton $\times$ meter
(C) Work	(iii) Newton/m <sup>2</sup>
(D) Power	(iv) $\frac{\text{Newton} \times \text{m}}{\text{Sec.}}$

  - A(i), B(iii), C(ii), D(iv)
  - A(i), B(iv), C(iii), D(ii)
  - A(ii), B(iii), C(i), D(iv)
  - A(iii), B(i), C(iv), D(ii)
- Light object (mass  $m_1$  and velocity  $v_1$ ) and heavy object (mass  $m_2$  and velocity  $v_2$ ) possess equal kinetic energy, then correct statement is :
 

(a) $m_1 v_1 < m_2 v_2$	(b) $m_1 v_1 > m_2 v_2$
(c) $m_1 v_1 = m_2 v_2$	(d) $m_1 v_2 = m_2 v_1$

6. A car of mass 1000 kg is supported on piston of tube B for repairs. It is connected to tube A which is of  $1/5^{\text{th}}$  diameter of tube B. Tubes are full of oil. Force F applied on piston of A to support the car is :



- (a) 200 kg / wt  
(b) 200 newton  
(c) 40 kg wt  
(d) 40 newton
7. Which of the following statements is true for a planet ?
- (a) Its mass increases with increasing distance from the sun  
(b) Its radius increases with increasing distance from the sun  
(c) Its period of revolution increases with increasing distance from the sun  
(d) Its period of rotation about its own axis increases with increasing distance from the sun
8. Consider the following motions.
- (A) Rotation of the earth about its axis.  
(B) Revolution of the moon around the earth  
(C) Motion of a mass suspended from a spring when it is pulled down slightly and then released.  
(D) Motion of a string of a sitar when plucked.
- Which of the following pairs of motion represents an oscillatory motion ?
- (a) A, C                      (b) A, B  
(c) B, D                      (d) C, D
9. The specific heat of four bodies P, Q, R, S of equal masses are 0.1, 0.2, 0.3, 0.4 kilo calorie/kg  $\times^{\circ}\text{C}$  respectively. Temperature of which body will increase highest on giving equal amount of heat ?
- (a) P                              (b) Q  
(c) R                              (d) S
10. On giving 100 kilo calorie heat of 5 kg. of water at  $20^{\circ}\text{C}$ , the temperature of water will be :
- (a)  $25^{\circ}\text{C}$     (b)  $30^{\circ}\text{C}$     (c)  $40^{\circ}\text{C}$     (d)  $45^{\circ}\text{C}$
11. On a thermometer the freezing point of water is at 20 degree and boiling point is at  $160^{\circ}$  degrees. If the temperature of a liquid on celsius scale is  $60^{\circ}\text{C}$ , then the temperature of the same liquid recorded by this thermometer in degrees will be :
- (a) 84                              (b) 96  
(c) 104                              (d) 120
12. At what temperature, the density of pure water is maximum ?
- (a)  $0^{\circ}\text{C}$                               (b)  $-40^{\circ}\text{C}$   
(c)  $4^{\circ}\text{C}$                               (d)  $2^{\circ}\text{C}$
13. The body temperature of a person is  $90^{\circ}\text{F}$  then what is equivalent temperature in Celsius ?
- (a)  $114.6^{\circ}\text{C}$                               (b)  $72.8^{\circ}\text{C}$   
(c)  $37.2^{\circ}\text{C}$                               (d)  $36.6^{\circ}\text{C}$
14. How much heat is required to raise the temperature of 15 kg water water by  $15^{\circ}\text{C}$  ?
- (a) 22.5 kilo calorie    (b) 225 Joule  
(c) 225 kilo calorie    (d) 30 kilo calorie
15. A beaker is completely filled with water at  $4^{\circ}\text{C}$ . When it is cooled further to  $1^{\circ}\text{C}$ , then :
- (a) the level of water decreases  
(b) the water overflows  
(c) the beaker shatters  
(d) nothing happens

**Section-B (CHEMISTRY)**

16. Two atoms A and B are represented by their mass number and atomic number as -  
 ${}^{19}_9\text{A}$  and  ${}^{21}_9\text{B}$   
 Read the following statements -  
 (i) A and B belong to the same element  
 (ii) A and B have the same number of protons  
 (iii) A and B are isotopes  
 (iv) A and B are isobars  
 (v) A and B have the same number of neutrons.  
 Which one of the following groups of statements is correct -  
 (A) iii, v, iv (B) i, ii, iv  
 (C) ii, iii, i (D) v, i, ii
17. Mass number of oxygen is -  
 (A) 8 (B) 16  
 (C) 20 (D) 32
18. Which of the following compounds is a base -  
 (A) Salt (B) Hydrochloric acid  
 (C) Copper sulphate (D) Sodium hydroxide
19. Which one of the following acids has two replaceable hydrogen atoms -  
 (A) Formic acid (B) Acetic acid  
 (C) Sulphuric acid (D) Phosphoric acid
20. Examine the following statements :  
 (i) Temporary hardness of water is due to the presence of soluble bicarbonates of calcium and magnesium.  
 (ii) Permanent hardness of water is caused by the presence of the chlorides and sulphates of calcium and magnesium  
 (iii) Rain water is the purest form of water collected after a heavy shower  
 (iv) Ion exchange of permutite process is the modern and most effective method of removing both temporary and permanent hardness of water.
- Which statements are correct -  
 (A) (i) and (iii) (B) (ii) and (iv)  
 (C) (i), (ii) and (iii) (D) (i), (ii), (iii) & (iv)
21. Some substances are given below -  
 (i) magnesium oxide (ii) carbon dioxide  
 (iii) sulphur dioxide (iv) calcium oxide  
 Which of the above substances, when dissolved in water, turn blue litmus to red  
 Select the correct alternative.  
 (A) (i) and (ii) (B) (ii) and (iii)  
 (C) (ii) and (iv) (D) (i) and (iv)
22. Which of the following elements is not found in free state in the nature -  
 (A) Silver (B) Copper  
 (C) Sodium (D) Gold
23. When magma cools below the surface of the earth, the granite is formed which is used in buildings. It mainly consists of -  
 (A) quartz and haematite  
 (B) quartz and felspar  
 (C) bauxite and calcamine  
 (D) felspar and silver glance
24. Minerals generally have the following characteristics -  
 (i) They occur naturally  
 (ii) They have characteristic chemical composition  
 (iii) They do not have specific chemical properties  
 (iv) They do not have a specific chemical composition  
 Which of the following statements are correct -  
 (A) (i) and (ii) (B) (i), (iii) and (iv)  
 (C) (iii) and (iv) (D) (i) and (iv)

25. The percentage of gold present in 20 carat gold is -  
 (A) 83.33 (B) 100  
 (C) 50 (D) 73.3
26. Which of the following elements is non-metal -  
 (A) Na (B) Fe  
 (C) Cu (D) S
27. When a compound A is heated, a gas B is evolved which turns lime water milky. Compound A is used in the manufacture of glass. Gas B has a property of extinguishing fire and it does not support animal life. The compound A and B are respectively -  
 (A)  $\text{NaHCO}_3$  and CO  
 (B)  $\text{CaCO}_3$  and CO  
 (C)  $\text{Na}_2\text{CO}_3$  and  $\text{CO}_2$   
 (D)  $\text{NaHCO}_3$  and  $\text{CO}_2$
28. Which of the following non-metal is found in liquid state at room temperature -  
 (A) Sulphur (B) Carbon  
 (C) Iodine (D) Bromine
29. Match the following -  
 (a)  $\text{CH}_4$  (i) Neither combustible nor support combustion  
 (b)  $\text{CO}_2$  (ii) Combustible  
 (c)  $\text{N}_2$  (iii) Supports combustion  
 (d)  $\text{O}_2$  (iv) Extinguishes fire  
 Which of the following indicates the correct matching -  
 (A) a → (i), b → (ii), c → (iii), d → (iv)  
 (B) a → (ii), b → (iv), c → (i), d → (iii)  
 (C) a → (ii), b → (iii), c → (i), d → (iv)  
 (D) a → (iii), b → (iv), c → (ii), d → (i)
30. Which of the following displacement reactions is possible -  
 (A) Copper + Sodium chloride →  
                   Copper chloride + Sodium  
 (B) Lead + Potassium nitrate →  
                   Lead nitrate + Potassium  
 (C) Iron + Lead nitrate →  
                   Iron nitrate + Lead  
 (D) Silver + Copper nitrate →  
                   Silver nitrate + Copper

### Section-C (BIOLOGY)

31. Match the items of:  
 Column A                      Column B  
 a) Platelets      1) Attach bone with muscle  
 b) Neuron        2) Locomotion  
 c) Tendon        3) Blood coagulation  
 d) Striated muscle      4) Respond to stimuli  
 Which of the following is correct ?  
 (A) (a-2) (b-3) (c-4) (d-1)  
 (B) (a-3) (b-4) (c-1) (d-2)  
 (C) (a-4) (b-1) (c-2) (d-3)  
 (D) (a-1) (b-2) (c-3) (d-4)
32. Examine the following statements.  
 (A) Iron, necessary for the human body, is abundantly found in green vegetables.  
 (B) Zinc is one of the essential trace elements required for human body.  
 (C) Fats and minerals are not the essential nutrients for a balanced diet of humans.  
 (D) The food that generate energy in the body after complete oxidation are in the form of carbohydrates, fats and proteins.  
 Which one of the following alternatives is wrong?  
 (A) A (B) B  
 (C) C (D) D

33. Which of the following statement is wrong?  
 (A) Quinine, a malarial drug is obtained from the plant cinchona.  
 (B) Pulses are rich sources of starch and minerals.  
 (C) Sunflower is a good source of vegetable oil.  
 (D) Green vegetables are good sources of vitamins and minerals.
34. Ecological importance of earth worm is that  
 (A) It damages roots of plants.  
 (B) It takes organic matter from soil surface deeper into soil for absorption by plants.  
 (C) Its castings are rich in organic matter.  
 (D) It serves as food for protozoa.  
 Which of the following combinations is correct  
 (A) A,C (B) B, C  
 (C) A,B (D) A,B,D
35. Which of the following food will provide the nutrient for the growth of tissue in human body-  
 (A) Cheese (B) Fruit  
 (C) Sweets (D) Vegetables
36. Bile is produced by  
 (A) Stomach (B) Liver  
 (C) Gall bladder (D) Pancreas  
 Read the passage given below and answer the question no. 7 to 14. Animals can't produce their food themselves, they obtain their food from green plants. Where as green plants are capable to convert solar energy into chemical energy for the production of food. This process is represented by following equation.
- $$6\text{CO}_2 + 12\text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 + 6\text{H}_2\text{O}$$
37. The process represented by above equation is-  
 (A) Photosynthesis  
 (B) Reduction of carbohydrate  
 (C) Respiration  
 (D) Protein synthesis
38. The gas produce in above process are-  
 (A) Oxygen  
 (B) Carbon di oxide  
 (C) Water vapour  
 (D) All above
39. The essential factors for above process are-  
 (A) Temperature and Cytoplasm  
 (B) Sunlight and Chlorophyll  
 (C) Chlorophyll and Humidity  
 (D) Sunlight and Air
40. This process is stopped at night because -  
 (A) CO<sub>2</sub> increases  
 (B) O<sub>2</sub> decreases  
 (C) Water is not transported  
 (D) Sunlight is not available
41. In which substance the chemical energy is stored by the above process ?  
 (A) O<sub>2</sub> (B) CO<sub>2</sub>  
 (C) C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> (D) H<sub>2</sub>O
42. The process of photosynthesis in green plants involves -  
 (A) Intake of nitrogen and release of oxygen  
 (B) Intake of oxygen and release of nitrogen  
 (C) Intake of carbon dioxide and release of oxygen  
 (D) Intake of oxygen and release of carbon dioxide
43. Some body system and the related part of system are given in column P & Q respectively
- | P                       | Q                   |
|-------------------------|---------------------|
| (1) Digestive system    | (i) Kidney          |
| (2) Circulatory system  | (ii) Stomach        |
| (3) Excretory system    | (iii) Arteries      |
| (4) Reproductive system | (iv) Fallopian tube |

The correct option is -

- (A) 1 (i) 2 (ii) 3 (iii) 4 (iv)  
 (B) 1 (ii) 2 (iv) 3 (i) 4 (iii)  
 (C) 1 (iii) 2 (i) 3 (ii) 4 (iv)  
 (D) 1 (ii) 2 (iii) 3 (i) 4 (iv)

- (A) Rectum, Pancreas and Small Intestine  
 (B) Salivary gland, Liver and Pancreas  
 (C) Liver, Oesophagus and Large Intestine  
 (D) Salivary gland, Appendix and Duodenum

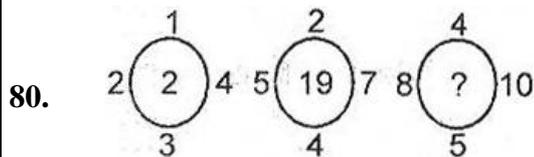
44. The complex substances of food in human are broken down into simpler ones with the help of digestive juices secreted by -
45. Immunization is induced in a body by-
- (A) Antibiotics (B) Vaccination  
 (C) Sterilization (D) Blood transfusion

### Section-D (MATHEMATICS)

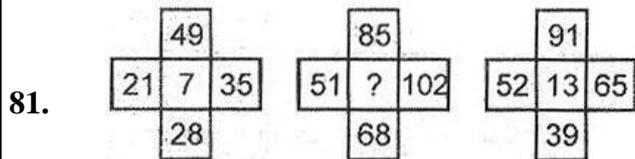
46. The value of  $\sqrt{214 + \sqrt{130 - \sqrt{88 - \sqrt{44 + \sqrt{25}}}}}$  :
- (a) 14 (b) 15  
 (c) 16 (d) 17
47. Teacher dictated the same dividend to four students. He gave them four different divisors, 42, 56, 112 and 126 respectively, and asked to divided that dividend. Each student got the same remainder as 11, then the dividend is:
- (a) LCM of all divisors + 11  
 (b) HCF of all divisors + 11  
 (c) Sum of all divisors + 11  
 (d) None of the above
48. The value of  $\sqrt{1\frac{1}{2} - \left[ 1\frac{1}{2} - 1\frac{1}{2} + \left( 1\frac{1}{2} - 1\frac{1}{2} - 1\frac{1}{4} \right) \right]}$  is:
- (a)  $\frac{1}{2}$  (b)  $\frac{1}{4}$   
 (c)  $\frac{1}{16}$  (d)  $1\frac{1}{5}$
49. If  $\sqrt{1.21} = 1.1$  then  $\sqrt{.000121}$  is equal to:
- (a) 0.0011 (b) 0.011  
 (c) 0.11 (d) 11.0
50. The value of  $0.\bar{4}$  is:
- (a)  $\frac{4}{10}$  (b)  $\frac{4}{9}$   
 (c)  $\frac{4}{100}$  (d)  $\frac{9}{4}$
51. If a and b are natural numbers such that  $\left(\frac{1}{a}\right)^{\frac{1}{b}} = 0.\bar{3}$ , then the value of ab is:
- (a) 81 (b) 24  
 (c) 192 (d) 375
52. If the sum of the digits of a number  $(10^n - 1)$  is 4707, when n is a natural number, then the value of n is:
- (a) 477 (b) 523  
 (c) 532 (d) 704
53. The last digit in the decimal representation of  $\left(\frac{1}{5}\right)^{2000}$  is :
- (a) 2 (b) 4  
 (c) 5 (d) 6
54. Unit's digit in the product  $(2137)^{753}$  is :
- (a) 1 (b) 3  
 (c) 7 (d) 9
55. The smallest possible integer x, for which  $1260x = N^3$ , where N is a positive integer, is:
- (a) 1470 (b) 2450  
 (c) 3675 (d) 7350

56. The number  $\frac{1}{1+\sqrt{5}}$  lies between the numbers:
- (a)  $\frac{1}{3}$  and  $\frac{1}{2}$                       (b)  $\frac{1}{2}$  and  $\frac{1}{\sqrt{2}}$
- (c)  $\frac{1}{4}$  and  $\frac{1}{3}$                       (d)  $\frac{1}{5}$  and  $\frac{1}{4}$
57. If  $x - \frac{1}{x} = 5$ , the value of  $x^3 - \frac{1}{x^3}$  is -
- (A) 125                      (B) 110
- (C) 140                      (D) 135
58. A number when divided by 195 leaves a remainder 47. If the same number is divided by 15, then the remainder will be:
- (a) 1                      (b) 2
- (c) 3                      (d) 4
59. If  $\frac{3}{4}x = -7 + x$ , then the value of x is:
- (a) 4                      (b)  $-\frac{7}{3}$
- (c) -28                      (d) 28
60. If  $x = 1$ ,  $y = -1$  and  $z = -1$ , then the value of  $\frac{x^2yz^2}{3}$  is:
- (a)  $\frac{1}{3}$                       (b)  $-\frac{1}{3}$
- (c) 1                      (d) -1
61. HCF and LCM of two expressions are  $(x-6)$  and  $(x+6)(x-1)(x-6)$  respectively. If one of the expressions is  $x^2 - 7x + 6$ , then the other expression is :
- (a)  $(x-6)(x-1)$
- (b)  $(x+6)(x-1)$
- (c)  $(x+6)(x-6)$
- (d)  $(x^2 - 7x + 6)(x-1)$
62. If the expression  $x^2 + K + \frac{1}{x^2}$  is a perfect square, then the value of K is:
- (a)  $2x$                       (b) 2
- (c) 1                      (d)  $\frac{1}{2x}$
63. Factors of  $x^2 + ax + b$  are  $(x-7)$  and  $(x+9)$  then the values of a and b are :
- (a)  $a = 2$ ,  $b = -63$                       (b)  $a = -2$ ,  $b = 63$
- (c)  $a = -2$ ,  $b = -63$                       (d)  $a = 2$ ,  $b = 63$
64. Three numbers x, y and z are such that  $x = y \neq z$  but  $x + y + z = 0$ . Value of  $\frac{z^2 - x^2}{z^2 + y^2}$  is:
- (a)  $-\frac{3}{5}$                       (b)  $\frac{4}{5}$
- (c)  $\frac{3}{5}$                       (d)  $\frac{5}{3}$
65. The denominator of a fraction is greater than numerator by 6. If 3 is added to numerator and 2 is subtracted from denominator, the fraction becomes  $\frac{6}{7}$ , then the equation so formed is:
- (a)  $\frac{x+4}{x+3} = \frac{6}{7}$                       (b)  $\frac{x+3}{x+4} = \frac{6}{7}$
- (c)  $\frac{x}{x+6} + \frac{3}{-2} = \frac{6}{7}$                       (d)  $\frac{x}{x+6} + \frac{-2}{3} = \frac{6}{7}$
66. The value of x in  $\frac{x+1}{2} + \left(x - \frac{x-1}{3}\right) = 2$  is:
- (a) 1                      (b) 2
- (c) 3                      (d) 0
67. A number lying between 10 and 100 is seven times the sum of its digits. If 9 is subtracted from it, the digits of the number are reversed. Then the number is :
- (a) 63                      (b) 54
- (c) 21                      (d) 42





- (A) 20 (B) 40  
(C) 45 (D) 60



- (A) 13 (B) 17  
(C) 29 (D) 31

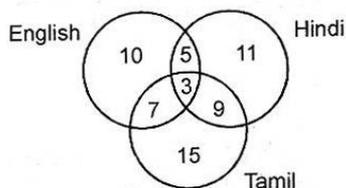
82. 

12	8	10	7
14	16	13	15
9	11	?	13

- (A) 12 (B) 11  
(C) 8 (D) 15

**Direction (Q.No. 83 to 84)**

The numbers in different section of the overlapping circles indicate the number of people who speak different language. Answer the question that follow.



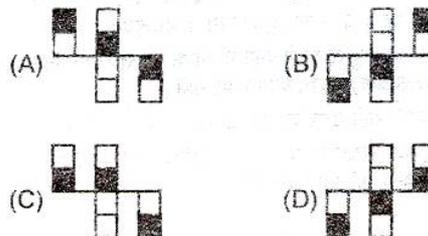
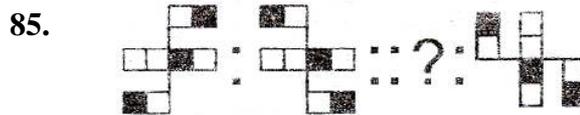
83. How many people speak only two languages?

- (A) 19 (B) 21  
(C) 24 (D) 30

84. How many cannot speak all the three languages ?

- (A) 21 (B) 36  
(C) 57 (D) 60

**Directions : (85 to 87)** There is some relationship between the two figures/pair of letters/ numbers on the left of the sign (::). The same relationship exists between the two terms on the right of which one is missing. Find the missing one from the given alternatives.



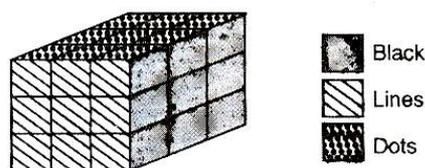
86. APOC : ? :: ITSK : MVUN

- (A) DRQH (B) EQRH  
(C) DRQF (D) ERQF

87.  $\frac{3}{2} : \frac{16}{81} :: \frac{4}{3} : ?$

- (A)  $\frac{27}{64}$  (B)  $\frac{81}{256}$   
(C)  $\frac{54}{128}$  (D)  $\frac{27}{128}$

**Directions : (88 to 90)** The following questions are based on a solid cube which has been shaded as shown on pairs of opposite faces.



88. How many small cubes are there in the middle layer?

- (A) 6 (B) 8  
(C) 9 (D) 12

89. How many small cubes have no face with any shading?

- (A) 6 (B) 3  
(C) 2 (D) 1

90. How many small cube are there which have shading only on two faces?

- (A) 8 (B) 9  
(C) 12 (D) 16



## RAISE 2018

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### SAMPLE PAPER (CLASS VIII)

MM : 360

Time : 120 Minutes

### ANSWER KEY

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