ISAT
INFINITY SCHOLAR'S HUB
SCHOLASTIC APTITIUDE TEST

Practice Test - 3

Class - IX

(For students moving to Class X)

SUBJECTS

Science
- Physics
- Chemistry
- Biology

Mathematics

Mental Ability

For More infomation

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SCHOLASTIC APTITUDE TEST

ISAT Practice Test 3

Time: 2 Hour
Maximum Marks: 336

CLASS-9

General Instructions

1. There are a total of **84** multiple choice questions.
2. This test contains 5 section (Physics, Chemistry, Biology, Mathematics & Mental Ability).
3. **Marking Scheme:**
   +4 Correct Response, **-1** Incorrect Response, **0** No response

DATE: _____/_____/_____

NAME: .....

PHYSICS

(1) An astronaut standing on the surface of the moon throws a ball upwards. The ball would
(a) directly fall down from the point it is released.
(b) hang in space.
(c) go up and then come back to the surface of the moon.
(d) keep going up never to come back.

(2) An object is vibrating at 50 hertz. What is its time period?
(a) 0.02 s
(b) 2 s
(c) 0.2 s
(d) 20.0 s

(3) Two charged objects are brought close to each other. Choose the most appropriate statement from the following options:
(a) they may attract
(b) they may repel
(c) they may attract or repel depending on the type of charges they carry
(d) there will be no effect

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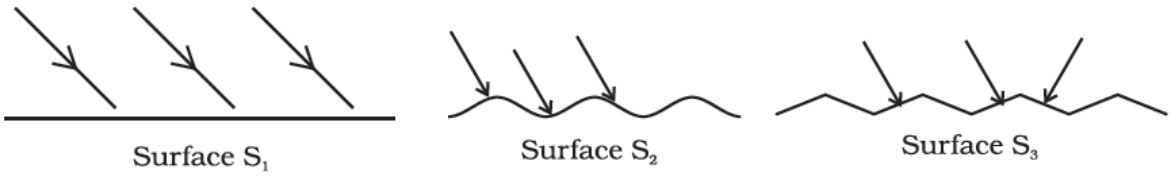
(4) Light is falling on surface S_1, S_2, S_3 as shown in Fig.



Surfaces on which the angle of incidence is equal to the angle of reflection is/are

(a) S_1 only (b) S_1 and S_2 only

(c) S_2 and S_3 (d) all the three surfaces

(5) Which of the following statements is incorrect?

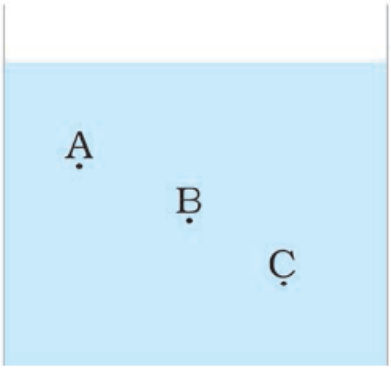
(a) Friction acts on a ball rolling along the ground.

(b) Friction acts on a boat moving on water.

(c) Friction acts on a bicycle moving on a smooth road.

(d) Friction does not act on a ball moving through air.

(6) Fig., shows a container filled with water. Which of the following statements is correct about pressure of water?



(a) Pressure at A > Pressure at B > Pressure at C

(b) Pressure at A = Pressure at B = Pressure at C

(c) Pressure at A < Pressure at B > Pressure at C

(d) Pressure at A < Pressure at B < Pressure at C

(7) When electric current is passed through a conducting solution, there is a change of colour of the solution. This indicates

(a) the chemical effect of current. (b) the heating effect of current.

(c) the magnetic effect of current. (d) the lightning effect of current.

(8) An iron sphere of mass 10 kg has the same diameter as an aluminium sphere of mass is 3.5 kg. Both spheres are dropped simultaneously from a tower. When they are 10 m above the ground, they have the same

(a) acceleration (b) momenta

(c) potential energy (d) kinetic energy

(9) In SONAR, we use

(a) ultrasonic waves (b) infrasonic waves

(c) radio waves (d) audible sound waves

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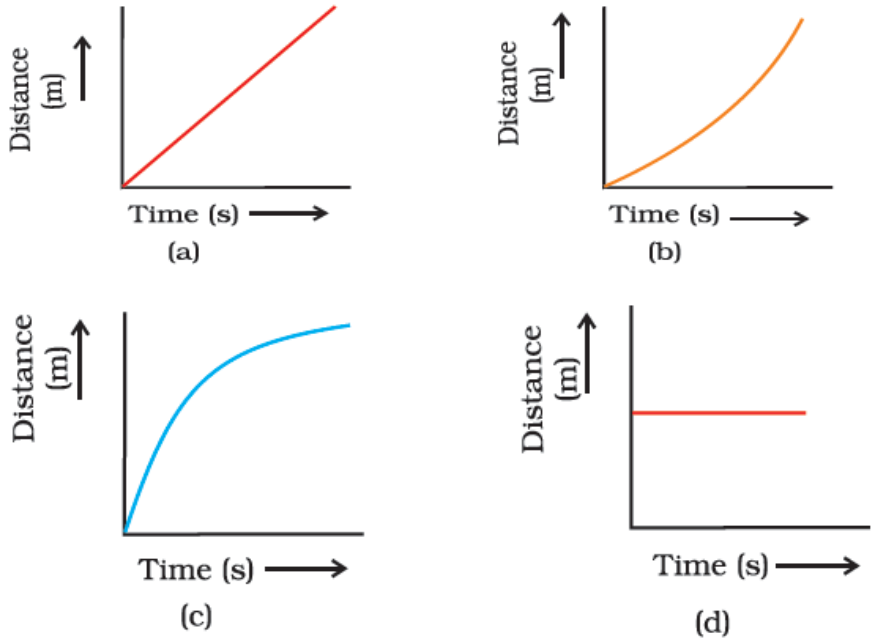
(10) An object is put one by one in three liquids having different densities. The object floats with $\frac{1}{9}, \frac{2}{11}$ and $\frac{3}{7}$ parts of their volumes outside the liquid surface in liquids of densities d_1, d_2 and d_3 respectively. Which of the following statement is correct?
(a) $d_1 > d_2 > d_3$ (b) $d_1 > d_2 < d_3$ (c) $d_1 < d_2 > d_3$ (d) $d_1 < d_2 < d_3$

(11) A goalkeeper in a game of football pulls his hands backwards after holding the ball shot at the goal. This enables the goal keeper to
(a) exert larger force on the ball
(b) reduce the force exerted by the ball on hands
(c) increase the rate of change of momentum
(d) decrease the rate of change of momentum

(12) The numerical ratio of displacement to distance for a moving object is
(a) always less than 1 (b) always equal to 1
(c) always more than 1 (d) equal or less than 1

(13) Which of the following figures (Fig.) represents uniform motion of a moving object correctly?



(14) The weight of an object at the centre of the earth of radius R is
(a) zero
(b) infinite
(c) R times the weight at the surface of the earth
(d) $1/R^2$ times the weight at surface of the earth

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(15) Which of the following will be suitable for coating dress materials of fire-men?
(a) Nylon (b) polyester (c) Melamine (d) Acrylic

(16) In an electrolytic cell, the electrode that is connected to the positive terminal of the battery is called:
(a) cation (b) cathode (c) anion (d) anode

(17) The process of changing liquid into solid is called
(a) Evaporation (b) Freezing
(c) Condensation (d) Sublimation

(18) Identify the false statement among the following:
(a) Compound is homogeneous in nature.
(b) In compound constituents do not retain their properties.
(c) The constituents of a mixture can be separated by physical method.
(d) During formation of mixtures there is a change in the molecular composition.

(19) Study the characteristics of a fuel given below:
Highest calorific value
Forms water vapour on combustion
Non polluting
Limited use as liquid fuel.
Among the following fuels which have the above characteristics.
(a) Kerosene (b) Petrol (c) LPG (d) Hydrogen

(20) Iron is galvanized by coating it with
(a) Chromium (b) sodium (c) magnesium (d) zinc

(21) The carbon content of Anthracite coal is:
(a) 50-60% (b) 60-70% (c) 75-80% (d) 90-95%

(22) The lowest temperature at which a substance catches fire is called as_____
(a) Ignition temperature (b) Different temperature
(c) Same temperature (d) All temperature

(23) Which metal becomes black in H_2S present in air?
(a) Fe (b) Mg (c) Ag (d) Al

(24) DHOKALA is a type of solution.
(a) Solid-in-solid (b) Solid-in-gas (c) Solid-in-liquid (d) Gas-in-solid

(25) **Assertion (A):** Dogs stretch out their tongues in summer.
Reason (R): Evaporation leads to cooling.
(a) Both A and R are true and R is the correct explanation for A.
(b) Both A and R are true but R is not the correct explanation for A.
(c) A is true and R is false.
(d) A is false and R is true.

(26) Which of the following is thermosetting plastics
(a) PVC (b) Nylon
(c) Melamine (d) Terylene

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(27) Electroplating is a method of:
(a) using electricity
(b) plating a metal with another metal
(c) coating any object with an electrically conducting plate
(d) coating a metal with another metal by passing an electric current

(28) Match the column:

	Column I (Principle)		**Column II (Procedure)**
(1)	Evaporation	(a)	Purification of drinking water which contains suspended matter
(2)	filtration	(b)	Earthen pots
(3)	Sublimation	(c)	Odonil used in washroom

(a) 1 → a, 2 → c, 3 → b
(b) 1 → c, 2 → a, 3 → b
(c) 1 → a, 2 → b, 3 → a
(d) 1 → b, 2 → a, 3 → c

BIOLOGY

(29) Mitochondiral matrix contains :
(a) Enzymes (b) DNA & RNA (c) Ribosomes (d) All of the above

(30) Organelle covered by double membrane is:
(a) Nucleus (b) Mitochondria (c) Plastid (d) All of the above

(31) Structural elements of chloroplasts are:
(a) matrix (b) photosynthetic pigments
(c) thylakoids (d) stroma

(32) A bio membrane is made up of:
(a) protein, lipids and carbohydrate (b) protein, lipids and RNA
(c) protein, lipids and DNA (d) protein, lipids and hormones

(33) Flexibility in plants is due to
(a) collenchyma (b) sclerenchyma (c) parenchyma (d) chlorenchyma

(34) Which is not a function of epidermis?
(a) Protection from adverse condition (b) Gaseous exchange
(c) Conduction of water (d) Transpiration

(35) Cartilage is not found in
(a) nose (b) ear (c) kidney (d) larynx

(36) Which amongst the following helps in increasing girth of a plant?
(a)Apical meristem (b) Intercalary meristem
(c) Parenchyma (d) Lateral meristem

(37) Who discovered cell?
(a) Robert Brown (b) Robert Hooke (c) Robert Koch (d) Purkinje

(38) Well defined nucleus is absent in
(a) blue green algae (b) diatoms
(c) algae (d) yeast

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(39) For the metamorphosis of tadpoles which of the following elements must be available in water?

(a) chlorine (b) carbon (c) sulphur (d) iodine

(40) In humans, the development of embryo takes place in the

(a) ovary (b) testis (c) oviduct (d) uterus

(41) Reproduction by budding takes place in

(a) hydra (b) amoeba (c) paramecium (d) bacteria

(42) Pathogenic bacteria present in host cells are killed by medicines called

(a) pain killer (b) antibodies (c) antibiotics (d) vaccines

MATHEMATICS

(43) Which of the following is irrational?

(a) $\sqrt{\frac{4}{9}}$ (b) $\frac{\sqrt{12}}{\sqrt{3}}$ (c) $\sqrt{7}$ (d) $\sqrt{81}$

(44) A rational number between $\sqrt{2}$ and $\sqrt{3}$ is

(a) $\frac{\sqrt{2}+\sqrt{3}}{2}$ (b) $\frac{\sqrt{2}\cdot\sqrt{3}}{2}$ (c) 1.5 (d) 1.8

(45) The value of 1.999... in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$, is

(a) $\frac{19}{10}$ (b) $\frac{1999}{1000}$ (c) 2 (d) $\frac{1}{9}$

(46) One of the factors of $(25x^2 - 1) + (1 + 5x)^2$ is

(a) $5 + x$ (b) $5 - x$ (c) $5x - 1$ (d) $10x$

(47) Which of the following is a factor of $(x + y)^3 - (x^3 + y^3)$?

(a) $x^2 + y^2 + 2xy$ (b) $x^2 + y^2 - xy$ (c) xy^2 (d) $3xy$

(48) If $\frac{x}{y} + \frac{y}{x} = -1$ $(x, y \neq 0)$, the value of $x^3 - y^3$ is

(a) 1 (b) –1 (c) 0 (d) $\frac{1}{2}$

(49) Ordinate of all points on the x-axis is

(a) 0 (b) 1 (c) –1 (d) any number

(50) If the perpendicular distance of a point P from the x-axis is 5 units and the foot of the perpendicular lies on the negative direction of x-axis, then the point P has

(a) x coordinate = –5 (b) y coordinate = 5 only

(c) y coordinate = –5 only (d) y coordinate = 5 or –5

(51) On plotting the points O(0, 0), A(3, 0), B(3, 4), C(0, 4) and joining OA, AB, BC and CO which of the following figure is obtained?

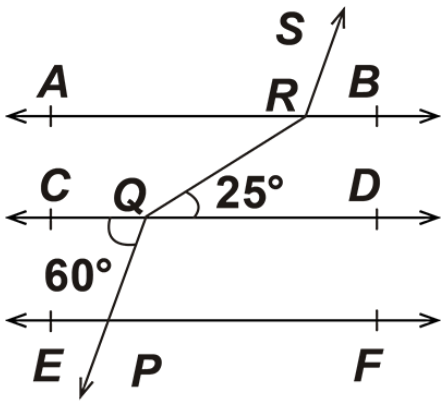
(a) Square (b) Rectangle (c) Trapezium (d) Rhombus

(52) The graph of y = 6 is a line
(a) parallel to x-axis at a distance 6 units from the origin
(b) parallel to y-axis at a distance 6 units from the origin
(c) making an intercept 6 on the x-axis
(d) making an intercept 6 on both the axes.

(53) If a linear equation has solutions (–2, 2), (0, 0) and (2, –2), then it is of the form
(a) y – x = 0
(b) x + y = 0
(c) –2x + y = 0
(d) –x + 2y = 0

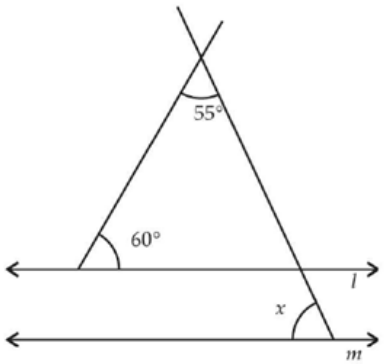
(54) The three steps from solids to points are:
(a) Solids – surfaces – lines – points
(b) Solids – lines – surfaces – points
(c) Lines – points – surfaces – solids
(d) Lines – surfaces – points – solids

(55) In Fig., if AB || CD || EF, PQ || RS, ∠RQD = 25° and ∠CQP = 60°, then ∠QRS is equal to



(a) 85° (b) 135° (c) 145° (d) 110°

(56) In the adjoining figure, if l || m then ∠x is equal to



(a) 55° (b) 65° (c) 75° (d) 115°

(57) An exterior angle of a triangle is 105° and its two interior opposite angles are equal. Each of these equal angles is

(a) $37\frac{1}{2}^{\circ}$ (b) $52\frac{1}{2}^{\circ}$ (c) $72\frac{1}{2}^{\circ}$ (d) 75°

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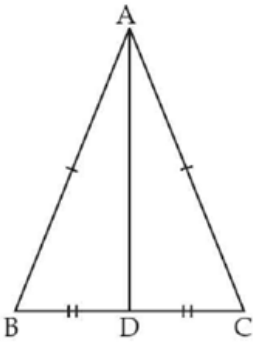
(58) In the adjoining figure, AB = AC and AD is median of ΔABC, then ∠ADC is equal to



(a) 60° (b) 120° (c) 90° (d) 75°

(59) If AB = QR, BC = PR and CA = PQ, then

(a) ΔABC ≅ ΔPQR (b) ΔCBA ≅ ΔPRQ (c) ΔBAC ≅ ΔRPQ (d) ΔPQR ≅ ΔBCA

(60) In triangles ABC and DFE, AB = FD and ∠A = ∠D. The two triangles will be congruent by SAS axiom if

(a) BC = EF (b) AC = DE (c) AC = EF (d) BC = DE

(61) The length of each side of an equilateral triangle having area of $9\sqrt{3}\,cm^2$ is

(a) 8 cm (b) 36 cm (c) 4 cm (d) 6 cm

(62) The class marks of a frequency distribution are given as follows:
15, 20, 25, ...
The class corresponding to the class mark 20 is:

(a) 12.5 – 17.5 (b) 17.5 – 22.5 (c) 18.5 – 21.5 (d) 19.5 – 20.5

(63) In the class intervals 10–20, 20–30, the number 20 is included in:

(a) 10–20 (b) 20–30
(c) both the intervals (d) none of these intervals

(64) A grouped frequency table with class intervals of equal sizes using 250–270 (270 not included in this interval) as one of the class interval is constructed for the following data:
268, 220, 368, 258, 242, 310, 272, 342,
310, 290, 300, 320, 319, 304, 402, 318,
406, 292, 354, 278, 210, 240, 330, 316,
406, 215, 258, 236.
The frequency of the class 310–330 is:

(a) 4 (b) 5 (c) 6 (d) 7

(65) The sum of three consecutive multiples of 7 is 357. Find the smallest multiple.

(a) 112 (b) 126 (c) 119 (d) 116

(66) The number of sides of a regular polygon where each exterior angle has a measure of 45° is

(a) 8 (b) 10 (c) 4 (d) 6

(67) If PQRS is a parallelogram, then ∠P – ∠R is equal to

(a) 60° (b) 90° (c) 80° (d) 0°

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(68) Find the value of x so that $(2^{-1} + 4^{-1} + 6^{-1} + 8^{-1})^x = 1$

(a) 0 (b) 1 (c) 24 (d) 25

(69) The surface area of the three coterminus faces of a cuboid are 6, 15 and 10 cm^2 respectively. The volume of the cuboid is

(a) 30 cm^3 (b) 40 cm^3 (c) 20 cm^3 (d) 35 cm^3

(70) Factorised form of $23xy - 46x + 54y - 108$ is

(a) $(23x + 54)(y - 2)$ (b) $(23x + 54y)(y - 2)$

(c) $(23xy + 54y)(-46x - 108)$ (d) $(23x + 54)(y + 2)$

MENTAL ABILITY

(71) 2, 3, 6, 18, 108, ?

(a) 1944 (b) 1658 (c) 648 (d) 1008

(72) 80, 63, 72, 72, 64, 81, 56, ?

(a) 96 (b) 98 (c) 89 (d) 90

(73) Each of the following questions is based on the following alphabet series. A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Which letter is eighth to the left on sixteenth letter from the right end?

(a) B (b) S (c) C (d) H

(74) Arrange the given words in the sequence in which they occur in the dictionary and then choose the correct sequence.

1. Page 2. Pagan 3. Palisade 4. Pageant 5. Palate

(a) 1, 4, 2, 3, 5 (b) 2, 4, 1, 3, 5 (c) 2, 1, 4, 5, 3 (d) 1, 4, 2, 5, 3

(75) If FAIR is written as IENX. Then TAPE will be written as?

(a) WEVL (b) WEUK (c) WFUK (d) XEUK

(76) If DELHI is coded as 73541 and CALCUTTA coded as 82589662, how can CALICUT be written ?

(a) 5279431 (b) 5978213 (c) 5473628 (d) 8251896

(77) In a row of boys facing the North, A is sixteenth from the left end and C is sixteenth from the right end. B, who is fourth to the right of A, is fifth to the left of C in the row. How many boys are there in the row ?

(a) 39 (b) 40 (c) 41 (d) 42

(78) In a class of 60, where girls are twice that of boys, kamal ranked seventeenth from the top. If there are 9 girls ahead of kamal, how many boys are after him in rank?

(a) 3 (b) 7 (c) 12 (d) 23

(79) In this question, three statements of numbers following same rules are given. Find the rule and accordingly find the value of the number?

If 3 + 9 = 31; 15 + 12 = 45; 18 + 9 = 36, then 12 + 27 = ?

(a) 94 (b) 14 (c) 49 (d) 53

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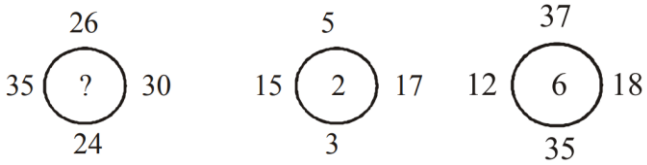
(80) In this question, three statements of numbers following same rules are given. Find the rule and accordingly find the value of the number?
If 213 = 419; 322 = 924; 415 = 16125, then 215 = ?
(a) 425 (b) 1625 (c) 4125 (d) 2541

(81) Ramakant walks northwards. After a while, he turns to his right and a little further to his left. Finally, after walking a distance of one kilometre, he turns to his left again. In which direction is he moving now ?
(a) North (b) South (c) East (d) West

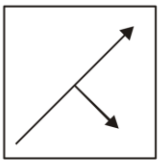
(82) Raj travelled from a point X straight to Y at a distance of 80 metres. He turned right and walked 50 metres, then again turned right and walked 70 metres. Finally, he turned right and walked 50 metres. How far is he from the starting point
(a) 10 metres (b) 20 metres (c) 50 metres (d) 70 metres

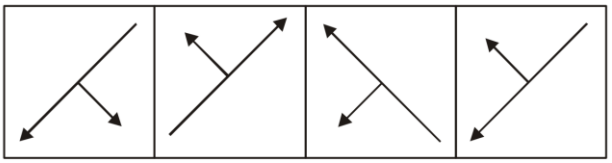
(83) Find the missing number in the following sets of number around the circle from the choice given below :



(a) 4 (b) 5 (c) 6 (d) 7

(84) Choose the correct mirror-image of the Fig. (X) from amongst the four alternatives (a), (b), (c) and (d) given along with it.


(X)


(a) (b) (c) (d)

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CLASS-9-ISAT-PRACTISE TEST-3-ANSWER KEY

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

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