CLASS : VIII   MATHEMATICS

1 If $1 + \dfrac{1}{x} = \dfrac{x+1}{x}$, what does 'x' equal to?

   (A) 1 or 2 only   (B) 1 and 0 only

   (C) +1 or −1 only   (D) any number except 0

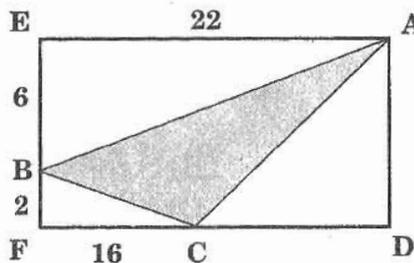**2** How many of the following four numbers are rational?

$$\sqrt{3} + \sqrt{3} \,, \ \sqrt{3} - \sqrt{3} \,, \sqrt{3} \times \sqrt{3} \,, \ \sqrt{3} \div \sqrt{3}$$

   (A) One   (B) Two   (C) Three   (D) Four

3 If $1^3 + 2^3 + 3^3 + \ldots\ldots\ldots + 9^3 = 2025$, then the value of

$(0.11)^3 + (0.22)^3 + \ldots\ldots + (0.99)^3$ is close to:

   (A) 0.2695   (B) 2.695   (C) 3.695   (D) 2.025

4 In the given figure, EADF is a rectangle and ABC is a triangle whose vertices lie on the sides of EADF. AE = 22, BE = 6, CF = 16 and BF = 2. Find the length of the line joining the mid points of the sides AB and BC.

   (A) $4\sqrt{2}$ (B) 5   (C) 3.5   (D) 8

5 The value of 'x', when $3^x = \dfrac{\sqrt{3}}{9}$ is:

   (A) $\dfrac{-3}{2}$ (B) $\dfrac{2}{3}$ (C) −2   (D) 3

6 If $a + b + c = 0$, then the value of $(a + b - c)^3 + (b + c - a)^3 + (c + a - b)^3$ is :

   (A) $8\left(a^3 + b^3 + c^3\right)$ (B) $a^3 + b^3 + c^3$

   (C) 24 abc   (D) −24 abc

7 If a four - digited perfect square number is such that the number formed by the first two digits and the number formed by the last two digits are also perfect squares, then the four digited number is:

(A) 6416   (B) 3616   (C) 1681   (D) 1664

8 Match *List-I* with *List-II* and select the correct answer using the codes given below the lists:

List-I	List-II
P Opposite sides equal and parallel	1. Rectangle
Q Opposite sides equal and one angle 90^0	2. Square
R All sides equal and one angle 90^0	3. Rhombus
S All sides equal and diagonals at right angles	4. Parallelogram

(A) P - 4, Q - 1, R - 3, S - 2   (B) P - 4, Q - 1, R - 2, S - 3
(C) P - 3, Q - 4, R - 2, S - 1   (D) P - 2, Q - 4, R - 1, S - 3

9 The digit in the units place in the square root of 15876 is:
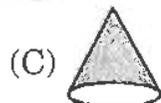
(A) 8   (B) 6   (C) 4   (D) 2

10 If $P = \left(\dfrac{-3}{4}\right)^3$, $Q = \left(\dfrac{-2}{5}\right)^2$, $R = (0.3)^2$, $S = (-1.2)^2$, then :

(A) $P > Q > R > S$ (B) $S > P > Q > R$
(C) $S > Q > R > P$ (D) $S > R > P > Q$

11 If 50% of (x – y) = 30% of (x + y), then what percent of 'x' is 'y'?

(A) 25%   (B) $33\dfrac{1}{3}$%   (C) 40%   (D) 400%

12 Which of the following is a polyhedron?

(A)

(B)

(C)

(D) All the given

13 A sum of money doubles itself in 4 years at compound interest. It will amount to 8 times itself at the same rate of interest in:

(A) 18 years   (B) 12 years   (C) 16 years   (D) 24 years

14 If $x - y = 1$ and $x^2 + y^2 = 41$, then the value of $x + y$ will be:

(A) ± 9 (B) ± 1 (C) 5 or 4   (D) −5 or −4

15 The perimeter of a rhombus is 40 m and its height is 5 m. Its area is:

(A) 60 sq.m   (B) 50 sq.m   (C) 45 sq.m   (D) 55 sq.m

16 A merchant buys goods at 25% off the list price. He desires to mark the goods so that he can give a discount of 20% on the marked price and still clear a profit of 25% on the selling price. What percent of the list price must he mark the goods?

(A) 125%   (B) 100%   (C) 80%   (D) 75%

17 When simplified and expressed with negative exponents, the expression $(x + y)^{-1} \cdot (x^{-1} + y^{-1})$ is equal to:

(A) $x^{-2} + 2x^{-1}y^{-1} + y^{-2}$ (B) $x^{-2} + 2^{-1} \cdot x^{-1} \cdot y^{-1} + y^{-2}$

(C) $x^{-1} \times y^{-1}$ (D) $x^{-2} + y^{-2}$

18 Of the following statements, the one that is incorrect is:

(A) doubling the base of a given rectangle doubles the area
(B) doubling the altitude of a triangle doubles the area
(C) doubling the radius of a given circle doubles the area
(D) doubling the divisor of a fraction and dividing its numerator by 2 changes the quotient

19 If the radius and the height of a right circular cylinder are doubled, then its volume becomes:

(A) 2 times   (B) 3 times   (C) 4 times   (D) 8 times

20 A cycle is sold for ₹ 880 at a loss of 20%. For how much should it be sold to gain 10%?

(A) ₹ 1000   (B) ₹ 1100   (C) ₹ 1210   (D) ₹ 1400

21 If the division $N \div 5$ leaves a remainder of 3, what might be the ones digit of N?

(A) 2   (B) 3   (C) 4   (D) 6

22 $(a + b)^2 = a^2 + 2ab + b^2$ is true for all:

(A) Natural numbers only   (B) integers only

(C) Real numbers   (D) Can't be determined

23 What should be subtracted from $\dfrac{-7}{8}$ so as to get $\dfrac{5}{12}$?

(A) $\dfrac{31}{24}$ (B) $\dfrac{8}{5}$ (C) $\dfrac{-31}{24}$ (D) $\dfrac{-6}{8}$

24 The value of $\left[2 - 3(2-3)^{-1}\right]^{-1}$ is:

(A) 5   (B) −5   (C) $\dfrac{1}{5}$ (D) $\dfrac{-1}{5}$

25 It is given that 'x' varies directly as 'y' and inversely as the square of 'z' and that x = 10 when y = 4 and z = 14. Then, when y = 16 and z = 7, x equals:

(A) 180   (B) 160   (C) 154   (D) 140
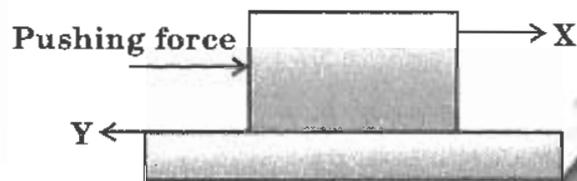
CLASS : VIII   PHYSICS

26 X is a good conductor of electricity. Which of the following could be X?

(A) Solid sodium chloride   (B) Vinegar

(C) Distilled water   (D) Liquid oxygen

27 Observe the figure given below:

Pushing force →   → X

Y ←

Identify X and Y.

	X	Y
(A)	Motion	Weight
(B)	Motion	Friction
(C)	Friction	Weight
(D)	Weight	Motion

28 An object placed 4 m from a plane mirror is shifted by 0.5 m away from the mirror. What is the distance between the object and its image?

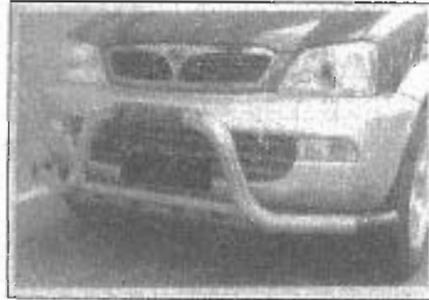(A) 4 m   (B) 3.5 m   (C) 9 m   (D) 5 m

29 Diagram given below shows an image of a constellation used by astronomers:

www.examrace.com

What is the name of this constellation ?

(A) Orion   (B) Scorpio

(C) Big Dipper   (D) D. Southern cross

30 Figure shows a car bumper coated with chromium.
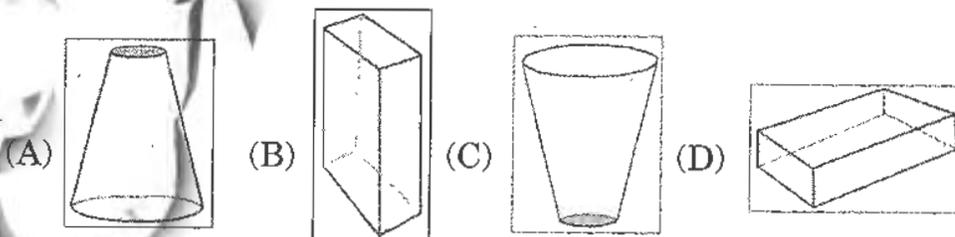

Why are car bumpers often coated with chromium?

I.	Prevent rusting
II.	Prevent corrosion
III.	Make them look better

(A) I and II only   (B) II and III only

(C) III and I only   (D) I, II and III

31 The point of initial rock movement along a fault during an earth quake is called the:

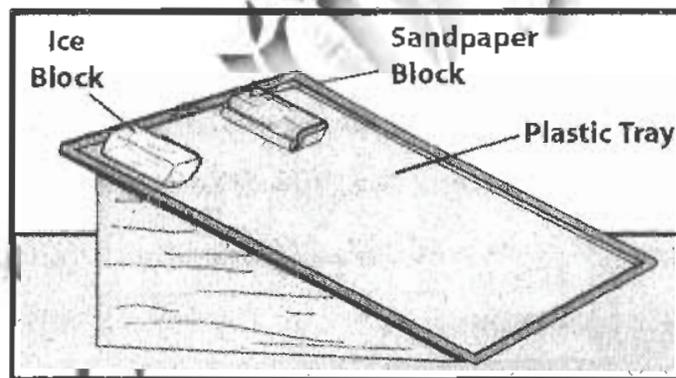(A) epicenter   (B) focus   (C) strike   (D) fault zone

32 Assuming that all the given objects have same mass, find which one of them exerts the greatest pressure?

(A)   (B)   (C)   (D)

33 There are 11 letters in the word : EXAMINATION. How many letters of these word are not changed when the word is seen by reflection in a plane mirror?

(A) 11   (B) 6   (C) 8   (D) 9

34 During lightning, streaks of bright light are seen. This is due to:

(A) UV rays from the sun

(B) IR rays from the sun

(C) Discharge of accumulated electric charges

(D) Cosmic rays

35 A bowler slides a bowling ball on the lane to hit the pins. Which effect of force is caused on the bowling ball by the exertion of force?

(A) Stop a moving object

(B) Change the direction of a moving object

(C) Change the speed of a moving object

(D) Change the position of a stationary object

36 Anoop and Sohail were studying friction and decided to do an experiment. They placed equal masses of ice block and sand paper block on an elevated plastic tray.
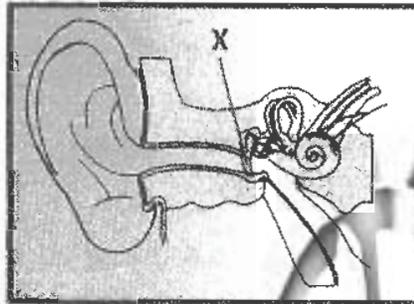

When they watched the blocks moving down the tray, what did they observe?

(A) Ice block reaches the bottom of the tray first

(B) Sponge block reaches the bottom of the tray first

(C) Both blocks reach the bottom of the tray at the same time

(D) Both blocks offer same amount of friction

37 If you are inside a building when an earthquake occurs, then the best strategy is to:

(A) leave the building at once (B) lie down in the middle of a room
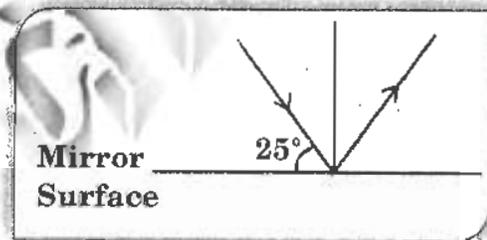
(C) switch the lights off   (D) all of the above

38 Observe the figure of human ear:

What is the function of structure 'X' in the diagram above?

(A) Help us to keep our balance

(B) Converts sound vibrations into nerve impulses

(C) Sends impulses to the brain

(D) Sends sound vibrations from the middle ear to the inner ear

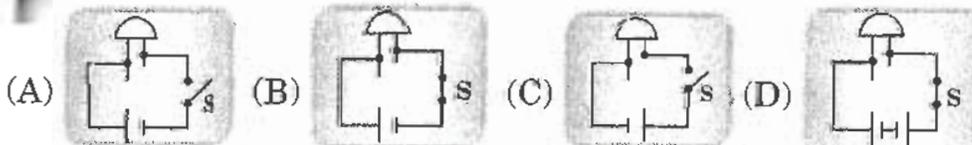**39** Observe the figure below:

Find the angle between the incident ray and the reflected ray.

(A) 65°   (B) 50°   (C) 130°   (D) 25°

40 Which of the following circuits gives the correct way of connecting an LED to light it up?

(A)   (B)   (C)   (D)

41 Which of the following observations shows that friction exists?

(A) When movement is decreased or prevented.

(B) When there is a constant movement.

(C) When electromagnetic charges are produced.

(D) When there is a constant increase in weight.

42 A rock undergoes stress. The way a given rock responds to a stress depends on:

> I. its temperature
> II. how slowly or quickly the stress is applied
> III. the confining pressure on the rock

(A) I and II only   (B) II and III only

(C) III and I only   (D) I, II and III

43 A rainbow is formed as a result of the:

(A) absorption of sunlight by the raindrops

(B) reflection of sunlight by the raindrops

(C) dispersion of sunlight by the raindrops

(D) diffraction of sunlight by the raindrops

44 Which of the following requires a pushing force?

(A) Throwing a stone at a bird (B) Grabbing hold of a pencil

(C) Leaves falling from a tree   (D) A load lifted by a pulley

45 Which sound is correctly related to its pitch and frequency?

	Sound	Pitch	Frequency
(A)	High note on whistle	Low	High
(B)	Vibration of wings of a mosquito	High	High
(C)	Base note on a guitar	High	Low
(D)	Sound produced by a jet plane	Low	Low

46 **Which of the following statements is *true*?**

(A) Dry cells are rechargeable.

(B) During electrolysis of water, oxygen bubbles are formed at the negative terminal.

(C) LED can glow even by passing a weak electric current.

(D) The process of electrolysis is only a physical change.

47 **Identify the application of low pressure in every day life?**

(A) Wide tyres of a heavy vehicle

(B) Cutting of an apple with sharp knife

(C) Hammering of a nail into wood

(D) Studs on the soles of soccer boots

48 **Which of the following correctly describes the pitch and the frequency of the sound of a girl screaming?**

(A) Low pitch, low frequency   (B) Low pitch, high frequency

(C) High pitch, low frequency   (D) High pitch, high frequency

49 **Which of the following are examples of using streamlined shapes to reduce friction?**

I.	Air craft
II.	Lorry
III.	Rocket
IV.	Fish

(A) I, II and III only   (B) I, III and IV only

(C) II, III and IV only   (D) I, II, III and IV

50 **In which of the following materials can sound travel through?**

I.	Glass of water
II.	Balloon full of air
III.	Iron bar

(A) I and II only   (B) II and III only

(C) III and I only   (D) I, II and III

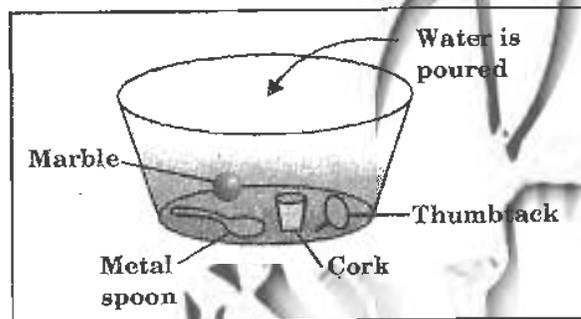# CLASS : VIII   CHEMISTRY

51 *Assertion*: Coal, petroleum and natural gas cannot be prepared in the laboratory.

Reason: Formation of fossil fuels is a slow process and the required conditions cannot be created in the laboratory.

(A) Both Assertion and Reason are true. Reason is the correct explanation of assertion.

(B) Both Assertion and Reason are true. Reason is not the correct explanation of assertion.

(C) Assertion is true and reason is false

(D) Both assertion and reason are false.

52 Diagram shows some objects placed inside a tub:

Which of the objects will float when water is poured into the tub?

(A) Marble   (B) Metal spoon   (C) Cork   (D) Thumbtack

53 Why is a flame always pointed upwards?

| I. Gases produced in flame are cold |
| II. Gases produced in flame are hot |
| III. Hot gases are lighter and rise up |

(A) I and II only   (B) II and III only
(C) III and I only   (D) I, II and III

54 What is the best method to avoid pollution by using plastic bags?

(A) Bury the plastic bags in the soil

(B) Use biodegradable plastic bags

(C) Throw the plastic bags into the river

(D) Burn the plastic bags in a rubbish dump

55. Which of the following metals does not produce hydrogen gas when added to acid?

(A) Potassium   (B) Gold

(C) Zinc   (D) Lead

56. Why is more care needed to preserve petrol than coal?

(A) Petrol has high calorific value

(B) Coal has low calorific value

(C) Petrol has low ignition temperature

(D) Coal undergoes complete combustion

57. Which of the following statements is TRUE?

(A) A nylon thread is stronger than a steel wire

(B) Rayon is a natural fibre made from wood pulp

(C) Cotton is not a polymer

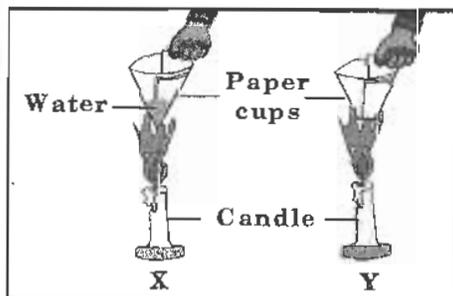(D) Fabric made from polyester can get wrinkles easily

58. X is a black, thick liquid with unpleasant smell. It is obtained during the processing of coal. It is used for preparing napthalene balls. Identify X.

(A) Coke   (B) Coal gas

(C) Natural gas   (D) Coal tar

59. CNG is preferred over petrol as a fuel for transport vehicles. Why?

(A) It is a renewable source of energy

(B) It is less polluting

(C) It can be compressed under high pressure

(D) It undergoes complete combustion

60. An experimental setup with figure 'X' showing heating of a paper cup with water and figure 'Y' showing heating of a paper cup without water.

What can you infer from the experimental figures 'X' and 'Y'?

(A) Temperature of the water changes.

(B) Paper cup transfers heat to the water.

(C) Paper cup with water does not burn.

(D) All of the above

61 Metal 'X' reacts very slowly with water but reacts vigorously with steam. Identify metal 'X'.

(A) Magnesium   (B) Silver

(C) Copper   (D) Potassium

62 Which of the following is NOT a natural polymer?

(A) Natural rubber   (B) Polyester

(C) Protein   (D) Starch

63 Identify the constituent of petroleum that is NOT used in electric generators as a fuel.

(A) Kerosene   (B) Petrol   (C) Diesel   (D) Lubricating oil

64 Element copper is mainly used as electrical wires and cooking vessels. Which of the following is NOT a property of copper?

(A) Ductile   (B) Malleable

(C) Low melting point   (D) Good conductor of heat

65 Which of the following fabrics is made by mixing two types of fibres?

(A) Cotton   (B) Polywool   (C) Rayon   (D) Nylon

66 Which of the following is the best extinguisher for inflammable materials?

(A) Water   (B) Sulphur dioxide

(C) Carbon dioxide   (D) Carbon monoxide

67 Where is kerosene mainly used?

(A) To surface roads

(B) As fuel in jet engines

(C) To water proof materials
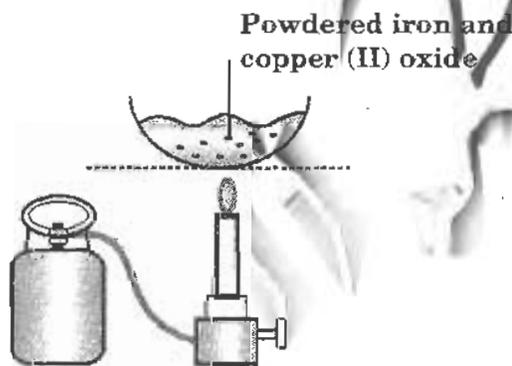
(D) In furnaces for industrial heating purposes

68 A gold smith uses outer most part of the flame for melting gold. Why do they use the outer most zone of the flame?
(A) It produces yellow colour in the flame.
(B) It is blue which is the hottest part in the flame.
(C) It undergoes partial combustion.
(D) It brings down the temperature of gold.

69 David's mother advised him not to wear clothes made up of synthetic fibres in hot and humid weather?
(A) Synthetic fibres stick to the body.
(B) Synthetic fibres dry up quickly.
(C) Synthetic fibres cannot catch fire easily.
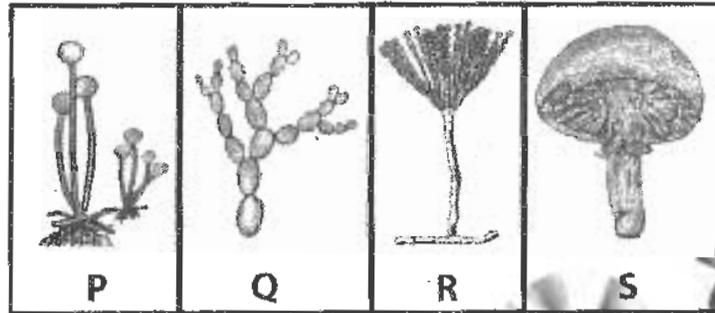(D) Synthetic fibres cannot absorb sweat.

70 Observe the mixture given below:

Powdered iron and copper (II) oxide

On heating the mixture strongly taken in a crucible:
(A) formation of iron (II) oxide and copper takes place
(B) formation of copper (III) oxide and iron (II) oxide takes place
(C) formation of iron (III) oxide and copper sulphate takes place
(D) no reaction takes place

CLASS : VIII   BIOLOGY

71 Figures given below show some examples of fungi.

P   Q   R   S
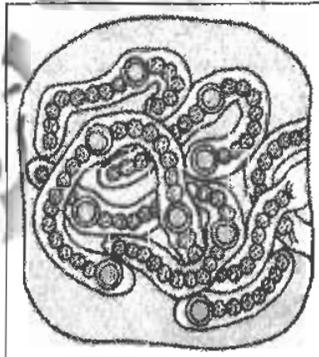
Which of the following was used by Alexander Flemming to prepare an antibiotic to kill bacteria?

(A) P   (B) Q   (C) R   (D) S

72 Which of the following is the best source of plant protein?

(A) Wheat   (B) Soyabean
(C) Maize   (D) Corn

73 The micro organism given below is associated with which of the following functions?
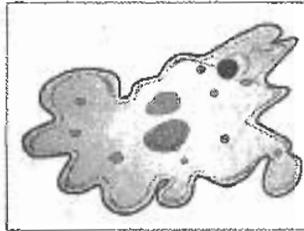

(A) Photosynthesis   (B) Transpiration
(C) Nitrogen fixation   (D) Carbon fixation

74 What is the function of thyroxine hormone in frog?

(A) Controls metabolic rate in frog
(B) Controls metamorphosis in frog
(C) Controls the development of reproductive organs
(D) Controls the function of other endocrine glands

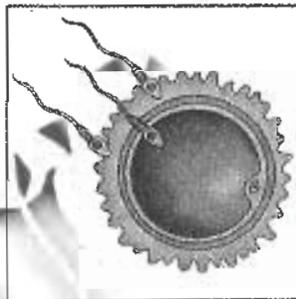**75** The organism shown in the given diagram reproduces by:

(A) Budding   (B) Fragmentation   (C) Fission   (D) Fusion

76 How is the sex of the Baby determined?

(A) Sex chromosomes of mother

(B) Sex chromosomes of father

(C) 'X' chromosome of unfertilised egg

(D) All 23 pairs of chromosomes

77 Which process is shown in the diagram given below?

(A) Metamorphosis   (B) Moulting

(C) Fertilization   (D) Respiration

78 Which of the following shows a modern technology measure used to preserve and conserve the environment?

(A) Practising crop rotation

(B) Using leaded petrol in motor vehicles

(C) Using machines in agricultural industry

(D) Converting biological wastes into biogas

79 Fresh endometrium is formed every month in:

(A) ovary   (B) ureter   (C) urethra   (D) uterus

80 Which of the following statements can be used to differentiate a human skin cell and an human egg cell?

(A) The skin cell has twice as many chromosomes as the egg cell.

(B) The egg cell has as many chromosomes as the skin cell

(C) The skin cell has no genetic information in its chromosomes.

(D) Only the egg cell has a nucleus.

81 Which of the following processes involves the escaping of nitrogen into air from decaying matter?

(A) Nitrification   (B) Denitrification

(C) Nitrogen fixation   (D) Nitrogen assimilation

82 The adverse effects of deforestation are:

> I.   Reduced rainfall
> II. Soil erosion
> III. Destruction of habitat
> IV. Climatic changes

(A) I, II and IV only   (B) II and III only

(C) I, II and III only   (D) I, II, III and IV

83 Why do fish and frogs lay eggs and release sperms in hundreds whereas a hen lays only one egg at a time?

(A) One sperm can fertilise many eggs.

(B) Only one of the fertilised egg can become an adult.

(C) To ensure fertilisation of at least few of them.

(D) Many sperms can fertilise one egg.

84 In India, crops can be broadly categorised based on seasons. Accordingly, which of the following crops can be grown in all seasons?

(A) Rice   (B) Wheat   (C) Vegetables (D) Mustard

85 Read the information given below.

> P – A colourless liquid-like jelly
> Q – Maintains the shape of a cell
> R – Contains genetic information

What do P, Q and R represents?

	P	Q	R
(A)	Nucleus	Cell wall	Cytoplasm
(B)	Cell wall	Cytoplasm	Nucleus
(C)	Nucleus	Cytoplasm	Cell wall
(D)	Cytoplasm	Cell wall	Nucleus

86 What is common between bacteria, algae and fungi?

(A) All are autotrophs   (B) All are decomposers

(C) All have cell wall   (D) All contain pigments.

87 Which of the following is the bio-control method for checking spread of Malaria?

(A) Using Mosquito repellants   (B) Spraying insecticides

(C) Rearing Fishes   (D) Using Mosquito Nets

88 Which of the following Ministries initiated a 'Project Tiger' programme to save tiger population?

(A) WHO   (B) WWE   (C) MEF   (D) UNEP

89 Pathogens causing disease spread through

> I.   Body contact
> II. The air
> III. A vector

(A) I and II only   (B) I and III only

(C) II and III only   (D) I, II and III

90 How many ova are released by the ovaries every month?

(A) One   (B) Two   (C) Three   (D) Four

CLASS : VIII   GENERAL QUESTIONS

91 What is the next number in this sequence?

15, 60, 240, 960, (?)

(A) 1240   (B) 1275   (C) 1920   (D) 3840
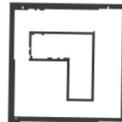
92 What is the name of microsoft's free e-mail/service?

(A) Outlook   (B) G-mail   (C) Hotmail   (D) MS-mail

93 The world's largest diamond producing country is:

(A) South Africa (B) India   (C) USA   (D) China

94 Find the mirror image of the figure 'X' given below.

X

(A)   (B)   (C)   (D)

95 In powerpoint, which menu provides a command to change the layout of your slide?

(A) View menu   (B) Format menu
(C) Slide show   (D) Design menu

96 Who wrote the book 'The origin of species' which tasks about the modern theory of evolution?

(A) Newton   (B) Aristotle   (C) J.C. Bose   (D) Charles Darwin

97 This is an Indian musical group whose lead singer is a doctor. The concepts of their videos are 'Pan Indian' is:

(A) Strings   (B) Euphoria   (C) N sync   (D) Boy zone

98 Pick out the odd player.

(A) P.T. Usha   (B) Sunitha Rani
(C) Yasin Merchant   (D) Bahadur Prasad

99 On which day in India is Flag day observed each year?

(A) 7th January (B) 7th December (C) 7th October (D) 7th April

100 Who was the first woman President of The United Nations General Assembly?

(A) Sucheta Kriplani   (B) Sarojini Naidu
(C) Vijaya Lakshmi Pandit   (D) Rajkumari Amrit Kaur

KEY FOR THE Q.P.-2011

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