

## GENERAL INTELLIGENCE

**Directions (1 - 7) :** In the following questions select the related word/letters/number from the given alternatives.

1. Flower : Petal :: Book : ?

- (1) Page (2) Contents  
(3) Author (4) Library

2. Doctor : Hospital :: ?

- (1) Plumber : Wrench  
(2) Chef : Kitchen  
(3) Water : Reservoir  
(4) Farmer : Village

3. Patient : Hospital :: Car : ?

- (1) Hangar (2) House  
(3) Garage (4) Office

4. COMPREHENSION :

NOISNEHERPMOC ::  
BEAUTY : ?

- (1) EAUTYB (2) AUTYBE  
(3) YTUAEB (4) UTYBEA

5. BADC : XWZY :: QPSR : ?

- (1) TUVW (2) GHJ  
(3) LMNO (4) NMPO

6. 64 : 81 :: 8 : ?

- (1) 7 (2) 8  
(3) 9 (4) 6

7. 175 : 13 :: 108 : ?

- (1) 6 (2) 7  
(3) 8 (4) 9

**Directions (8-11) :** Find the odd words/letters/number pair from the given alternatives.

8. (1) University : Vice-Chancellor

(2) College : Principal

(3) Industry : Chairman-cum-  
Managing Director

(4) Newspaper : Reporter

9. (1) Humility (2) Modesty

(3) Simplicity (4) Vanity

10. (1) AABE (2) MMNO

(3) GGHK (4) KKLO

11. (1) 12-39 (2) 16-52

(3) 19-61 (4) 24-76

12. In the following letter series, how many PQS occur in such a way, Q is the middle and P and S are on any one side?

MDRPGGKPGSLAPQSTGK  
PGGMDGPQSTU

(1) 2 (2) 3

(3) 4 (4) 1

13. Find out the set among the four sets which is like the given set.

Given set is (63, 54, 45)

(1) (29,20,11)(2) (30,21,11)

(3) (28,17,8) (4) (36,45,33)

14. Which one of the given responses would be a meaningful order of the following ?

1. Rain 2. Sunlight

3. Vapour 4. Cloud

(1) 4, 1, 2, 3 (2) 2, 3, 1, 4

(3) 3, 2, 4, 1 (4) 2, 3, 4, 1

15. Arrange the following words as per order in the English dictionary:

1. Activity 2. Attention

3. Arise 4. Absent

(1) 4.1, 3, 2 (2) 4, 3, 2, 1

(3) 2, 3, 4, 1 (4) 3, 2, 1, 4

16. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?

ba\_abab\_b\_ba\_aba

(1) abab (2) aabb

(3) baab (4) bbaa

**Directions (17-19) :** In the following questions a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

17. ZIP, WIP, TIP, ?

(1) PIP (2) RIP

(3) QIP (4) SIP

18. 10, 18, 28, 40, 54, 70, ?

(1) 85 (2) 86

(3) 87 (4) 88

19. 0, 6, 20, 42, ?

(1) 82 (2) 81

(3) 72 (4) 76

20. If the day before yesterday was Sunday, when will Thursday be ?

(1) Today

(2) Tomorrow

(3) Day after tomorrow

(4) Two days after tomorrow

21. Mohan is older than Prabir. Suresh is younger than Prabir. Mihir is older than Suresh, but younger than Prabir. Who among the four is the youngest ?

(1) Prabir (2) Mihir

(3) Mohan (4) Suresh

22. A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of his son is

(1) 14 years

(2) 22 years

(3) 20 years

(4) 18 years

23. If the seventh person from the front in a queue is the tenth person from behind, how many are there in the queue?

(1) 17 (2) 16

(3) 14 (4) 10

24. 'X' and 'Y' are brothers. 'B' is the daughter of 'A'. 'A' is the wife of 'Y'. What is the relation of 'B' to 'X' ?

(1) Daughter (2) Sister

(3) Sister-in-law

(4) Niece

25. If W = 23, STRONG = 93, then WEAK = ?

(1) 38 (2) 44

(3) 40 (4) 41

26. If INTERNET is written as I4325423 and DISTANCE is written as 61738492, then what will CENTRE be written as ?

- (1) 124576 (2) 924352  
(3) 852431 (4) 291534

27. If CIGARETTE is coded as GICERAETT, then DIRECTION will be coded as

- (1) RIDTCENOI  
(2) NORTECDII  
(3) RIDTCEION  
(4) IRDCTONE

28. Some capital letters are given below in the first line and numbers are assigned to each of them in the second line. The numbers are the codes for the letters and vice-versa.

M	O	E	A	S	J	T	Z
3	5	7	6	2	9	4	0

Choose the correct number code for the given set of letters.

J E Z T M S

- (1) 9 7 0 4 3 5  
(2) 9 7 0 3 4 5  
(3) 9 7 0 5 3 4  
(4) 9 7 0 4 3 2

29. From the given alternatives select the word which can be formed using the letters given in the word.

PRONUNCIATION

- (1) NATURAL  
(2) PRINTING  
(3) PUNCTUATION  
(4) RATION

30. From the given alternatives select the word which **cannot** be formed using the letters of the given word.

APPEARANCE

- (1) PANE (2) NEAR  
(3) PEAS (4) REAP

**Directions (31-32)** : In the following questions select the missing number from the given responses.

31. 3    15    5  
5    35    7  
9    ?    5

- (1) 42 (2) 35  
(3) 47 (4) 25

32. 15    11    20  
2    3    1  
5    6    7  
35    39    ?  
(1) 30 (2) 35  
(3) 27 (4) 24

**Directions (33-34)** : In the following questions some equations are solved on the basis of a certain system. On the same basis, find out the correct answer for the unsolved equation.

33. If  $8 - 3 + 4 = 348$ ,

$$9 - 6 + 8 = 689, \text{ then } 5 - 9 + 6 = ?$$

- (1) 659 (2) 965  
(3) 596 (4) 956

34. If  $882 = 20$

$$\text{and } 996 = 26, \text{ then } 729 = ?$$

- (1) 24 (2) 30  
(3) 20 (4) 21

35. Select the correct combination of mathematical signs to replace \* signs and to balance the given equation.

$$8 * 6 * 7 * 3 * 18$$

- (1)  $+-+ =$  (2)  $+- - =$   
(3)  $-++ =$  (4)  $-+- =$

36. If '+' means '-', '-' means 'x', 'x' means '+' and '+' means '+', then

$$20 \times 60 \div 40 - 20 + 10 = ?$$

- (1) 0 (2) 40  
(3) 60 (4) 80

37. Aman starts walking from his college, walks 10 km towards North, then he turns to his left and walks 10 km. From there he takes a right turn and walks 10 km. In which direction is he facing now ?

- (1) South (2) North  
(3) East (4) West

38. Medha moves towards South-East for 7 km, then moves towards West for 14 km. Then she moves towards North-West for 7 km and finally moves a distance of 4 km East and stands there. How far is the starting point from where she stands now ?

- (1) 3 km (2) 4 km  
(3) 7 km (4) 10 km

39. Two statements are given followed by two conclusions I and II. You have to consider the statements to be true, even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follow from the given statements. Indicate your answer.

**Statements :**

- Teachers are role models of the students.
- Teachers are responsible for developing scientific attitude in their students.

**Conclusions :**

- Students do not have scientific attitude.
  - By and large teachers can influence scientific attitude of the students.
- (1) Only conclusion I follows  
(2) Only conclusion II follows  
(3) Both conclusions I and II follow  
(4) Neither conclusion I nor II follows

40. Which of the conclusions can be drawn from the given statement:

**Statement :**

Many creative persons become artists.

- (1) A creative person will certainly become an artist.  
(2) It is not possible to become an artist, without creativity.  
(3) A high level of creativity is needed to become an artist.  
(4) Some artists are creative persons.

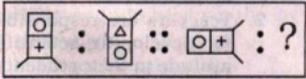
41. Manisha is sitting in between Kamini and Suvarna. Smita is right to Suvarna. Kamini is left to Manisha. Select the correct seating order.

- (1) Kamini, Suvarna, Smita, Manisha  
(2) Manisha, Suvarna, Smita, Kamini  
(3) Kamini, Manisha, Smita, Suvarna  
(4) Kamini, Manisha, Suvarna, Smita

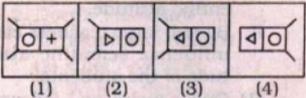
**ENGLISH LANGUAGE**

42. The population of a city doubles every 6 years. If in 2005, the population is 10,562, by which year will the population increase to 42,248?
- (1) 2011  
(2) 2023  
(3) 2017  
(4) 2029

43. Select the related figure from the given alternatives.  
**Question Figures :**

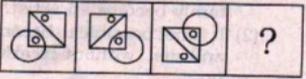


**Answer Figures :**

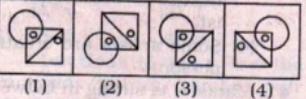


44. Select the figure which is different from the rest three.
- 
- (1) (2) (3) (4)

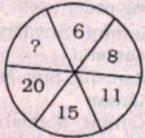
45. Choose the correct alternative from the given ones that will complete the series.  
**Question Figures :**



**Answer Figures :**



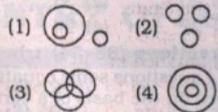
46. Select the missing number from the given responses,



- (1) 24 (2) 26  
(3) 28 (4) 36

47. Identify the diagram that best represents the relationship among the classes given below :

Sparrow, Bird, Cat

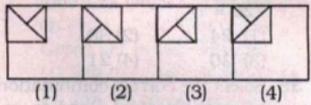


48. Which answer figure will complete the pattern in the question figure ?

**Question Figure :**



**Answer Figures :**

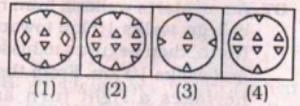


49. A piece of paper is folded and cut/punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

**Question Figures :**



**Answer Figures :**

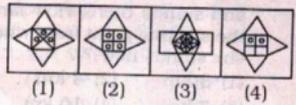


50. From the given answer figures, select the one in which the question figure is hidden/embedded.

**Question Figure :**



**Answer Figures :**



**Directions (51 - 55) :** In the following questions, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error. The number of that part is your answer. If a sentence is free from error, then your answer is (4) i.e. No error.

51. Eighty-five thousand rupees (1)/ is a large sum of money (2)/ to earn in a month. (3)/ No error (4)
52. His voice shook with emotion (1)/ and it was so funny to hear him (2)/ that all we longed to laugh and to cry. (3)/ No error (4)
53. It being a rainy day (1)/ I will decide to skip work (2)/ and stay at home. (3)/ No error (4)
54. Another baffling change (1)/ that I noticed in him, nowadays (2)/ is that he avoids speaking to me. (3)/ No error (4)
55. I had asked him (1)/ how he could go out (2)/ if it started raining. (3)/ No error (4)

**Directions (56-60) :** In the following questions, sentences are given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four.

56. The Prime Minister insisted \_\_\_\_\_ fuel prices in the Cabinet meeting.  
(1) to raise (2) on raising  
(3) in raising (4) at raising
57. The \_\_\_\_\_ of puppies is fond of milk.  
(1) gang (2) litter  
(3) group (4) litre
58. He \_\_\_\_\_ his father.  
(1) takes back (2) takes after  
(3) takes off (4) takes out
59. Guard \_\_\_\_\_ spelling mistakes.  
(1) against (2) after  
(3) above (4) at
60. Make hay while the sun \_\_\_\_\_.  
(1) shines (2) is shining

**Directions (80-84) :**

In the following questions, a sentence has been given in Direct /Indirect. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect /Direct.

**80.** He said, "He took tea in the morning".

- (1) He said that he did take in the morning.
- (2) He said that he had taken tea in the morning.
- (3) He said that he took in the morning.
- (4) He said that he would take tea in the morning.

**81.** He requested the boss to let him go on with his project.

- (1) He said to the boss, "You better let me go on with my project".
- (2) He told the boss, "Please go on with my project".
- (3) He said to the boss, "Let me go on with my project please".
- (4) He told the boss, "Go on with my project please".

**82.** I told her, "It was raining last night when you left".

- (1) I told her that it had been raining the previous night when she had left.
- (2) I told her that it has raining last night when she left.
- (3) I told her that it has been raining the night before when she left.
- (4) I told her that it had been raining last night when she had left.

**83.** He said, "I shall try to bring your the books tomorrow".

- (1) She said that she should try to bring me the books the next day.
- (2) She said that she would try to bring me the books the next day.
- (3) She said that she would try to bring me the books tomorrow.
- (4) She said that she should try to bring me the books tomorrow.

**84.** He said, "The little puppy is run over by the car".

- (1) He exclaimed, alas, the little puppy was run over by the the car.
- (2) He exclaimed sadly that the little puppy was run over by the car.
- (3) He exclaimed sadly that the little puppy had been run over by the car.
- (4) He exclaimed sadly that the little puppy is run over by the car.

**Directions (85-90) :** In the following questions, the 1st and the last sentences of the passage/parts of the sentence are numbered 1 and 6. The rest of the passage /sentence is split into four parts and named P, Q, R and S. These four parts are not given in their proper order. Read the passage/sentence and find out which of the four combinations is correct. Then find the correct answer.

**85.** 1. Sappho was one of the greatest and earliest of women poets.

P. Whatever we know about her poetry today is from the quotations found in the works of others.

Q. She lived on the island of Lesbos in the late 600's BC.

R. Most of Sappho's works – about 10 books of verse have been destroyed.

S. Only one of her poems has survived in its complete form.

6. Without doubt, she was one of the best lyric poets of Ancient Greece.

- (1) PRQS
- (2) PQSR
- (3) QSPR
- (4) QRSP

**86.** 1. Most men spend most of their lives looking after and waiting upon machines.

P. They must be fed well and kept at right temperatures.

Q. They might burst with rage and blow up causing ruin.

R. If they do not get their meals they refuse to work.

S. Machines are very stern masters.

5. He must be fed for an upon machines attentively.

- (1) SPRQ
- (2) PQRS
- (3) QSPR
- (4) RPQS

**87.1.** Books have been present since the time the first scripts were formed – about 5000 years ago.

P. The books of that time looked different from the ones available today.

Q. Then an important invention, letter press printing, also known as 'black art' changed the world.

R. Later, the books came in the form of rollers, or texts were stapled together and covered with a wooden book cover.

S. Initially, people bound the small clay tablets together with leather bands.

6. There was no longer the need to write text by hand; instead copies of text could be made with the help of a printing press.

- (1) PRQS
- (2) PSRQ
- (3) SPRQ
- (4) SRQP

**88.** 1. The harnessing of our rivers

P. is a great national problem

Q. the waters of which

R. which must be considered

S. now mostly run to waste

6. and dealt with on national lines.

- (1) RPQS
- (2) QSPR
- (3) QSRP
- (4) RPSQ

**89.** 1. Many people drive

P. hopelessly jammed

Q. their own cars to work

R. the roads would become

S. but if everyone did this

6. especially during rush-hours.

- (1) QSRP
- (2) PRQS
- (3) RPSQ
- (4) QSPR

**90.** 1. I realize that peace and

P. security are rightful aims.

Q. violent adventure is probably

R. and that my own desire for

**QUANTITATIVE APTITUDE**

- S. merely an adaptation to the  
 6. age in which I live.  
 (1) PQRS (2) SRQP  
 (3) PRQS (4) SPQR

**Directions (91-95) :** In the following questions, in the following passage a some of the words have been left out. Read the passage carefully and choose the correct answer to each question out of the four alternatives and fill in the blanks.

Meeting old school friends can be a strange experience. Some have changed so much that you can **91** recognize them : they speak with a different **92** , are interested in different things, and all you can do is make **93** talk and hope they'll go soon. Others, though you might have been out of **94** with them for years, are just the same as they always were; it's **95** if you saw them yesterday.

- 91.** (1) nearly (2) almost  
 (3) hardly (4) easily  
**92.** (1) language (2) accent  
 (3) way (4) tongue  
**93.** (1) small (2) little  
 (3) silly (4) gossip  
**94.** (1) sight (2) touch  
 (3) sound (4) feel  
**95.** (1) just (2) like  
 (3) so (4) as

**Directions (96-100) :** In the following questions, you have a brief passage with 5 questions following the passage. Read the passage carefully and choose the best answer to each question out of the four alternatives.

Earth is the only planet so far known with the suitable environment for sustaining life. Land, water, air, plants and animals are the major components of the global environment. Population, food and energy are the three fundamental problems facing mankind. Unemployment, inflation, crowding, dwindling resources and pollution are all due to the factors like increasing population, high standard of living, deforestation, etc.

Man has been tampering with the Ecosphere for a very long time

and is forced to recognize that environmental resources are scarce. Environmental problems are really social problems. They begin with people as cause and end with people as victims. Unplanned use of resources has resulted in the depletion of fossils, fuels, pollution of air and water, deforestation which has resulted in ecological imbalance and draining away of national wealth through heavy expenditure on oil and power generation.

- 96.** Increasing population causes  
 (1) unemployment and crowding  
 (2) inflation and pollution  
 (3) dwindling resources  
 (4) unemployment, inflation, crowding, dwindling resources and pollution
- 97.** National wealth is drained away by spending heavily on  
 (1) power generation  
 (2) fuels  
 (3) water and power generation  
 (4) oil and power generation
- 98.** The three major components of the global environment are  
 (1) food, energy and population  
 (2) high standard of living, crowding and inflation  
 (3) land, water and air  
 (4) plants, animals and mankind
- 99.** Depletion of fossils and fuels, pollution of air and water and deforestation will never occur in case of  
 (1) improper use of resources  
 (2) planned use of resources  
 (3) unplanned use of resources  
 (4) over use of resources
- 100.** We face the three fundamental problems that are  
 (1) inflation, deforestation and unemployment  
 (2) population, deforestation and energy  
 (3) population, inflation and food  
 (4) population, food and energy

- 101.** When  $n$  is divided by 6, the remainder is 4. When  $2n$  is divided by 6, the remainder is  
 (1) 2 (2) 0  
 (3) 4 (4) 1

**102.** The value of  $\frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72} + \frac{1}{90}$  is

- (1)  $\frac{1}{10}$  (2)  $\frac{3}{5}$   
 (3)  $\frac{3}{20}$  (4)  $\frac{7}{20}$

**103.** Let  $a = \frac{1}{2-\sqrt{3}} + \frac{1}{3-\sqrt{8}} + \frac{1}{4-\sqrt{15}}$

- Then we have  
 (1)  $a < 18$  but  $a \neq 9$   
 (2)  $a > 18$   
 (3)  $a = 18$   
 (4)  $a = 9$

- 104.** The smallest among the numbers  $2^{250}$ ,  $3^{150}$ ,  $5^{100}$  and  $4^{200}$   
 (1)  $4^{200}$  (2)  $5^{100}$   
 (3)  $3^{150}$  (4)  $2^{250}$

- 105.** The greatest of the following numbers  
 0.16,  $\sqrt{0.16}$ ,  $(0.16)^2$ ,  $0.04$  is  
 (1) 0.16 (2)  $\sqrt{0.16}$   
 (3) 0.04 (4)  $(0.16)^2$

**106.** If  $\left[ 4 - \frac{5}{1 + \frac{1}{3 + \frac{1}{2 + \frac{1}{4}}}} \right]^m$

- part of a journey takes 10 minutes, then to complete  $\frac{3}{5}$  th of that journey, it will take  
 (1) 40 minutes  
 (2) 45 minutes  
 (3) 48 minutes  
 (4) 36 minutes

107. If a number is increased by 25% and the resulting number is decreased by 25%, then the percentage increase or decrease finally is

(1) no change

(2) decreased by  $6\frac{1}{4}\%$

(3) increased by  $6\frac{1}{4}\%$

(4) increased by 6%

108. A reduction of 20% in the price of rice enables a customer to purchase 12.5 kg more for ₹ 800. The original price of rice per kg is

(1) ₹ 14

(2) ₹ 16

(3) ₹ 12

(4) ₹ 15

109. In two alloys A and B, the ratio of zinc to tin is 5 : 2 and 3 : 4 respectively. Seven kg of the alloy A and 21 kg of the alloy B are mixed together to form a new alloy. What will be the ratio of zinc and tin in the new alloy ?

(1) 2 : 1

(2) 1 : 2

(3) 2 : 3

(4) 1 : 1

110. If A : B = 3 : 4 and B : C = 6 : 5, then C : A is

(1) 10 : 9

(2) 9 : 10

(3) 8 : 9

(4) 9 : 8

111. If  $a, b$  are rationals and

$$a\sqrt{2} + b\sqrt{3}$$

$$= \sqrt{98} + \sqrt{108} - \sqrt{48} - \sqrt{72}$$

then the values of  $a, b$  are respectively

(1) 1, 2

(2) 1, 3

(3) 2, 1

(4) 2, 3

112. The ratio of boys and girls in a college is 5 : 3. If 50 boys leave the college and 50 girls join the college, the ratio becomes 9 : 7. The number of boys in the college is

(1) 300

(2) 400

(3) 500

(4) 600

113. The average age of a class of 35 students is 15 years. If the teacher's age is also included the average age increases by one year. Furthermore, if the average age of the teacher's

family having a wife and a son is 40 years and the son's age is 80% less than his mother's age, then the age of the teacher's wife is

(1) 57.5 years

(2) 50 years

(3) 47.5 years

(4) 55.5 years

114. If the amount is  $3\frac{3}{8}$  times the

sum after 3 years at compound interest compounded annually, then the rate of interest per annum is

(1) 25%

(2) 50%

(3)  $16\frac{2}{3}\%$

(4)  $33\frac{1}{3}\%$

115. A shopkeeper sells an article at 15% gain. Had he sold it for ₹ 18 more, he would have gained 18%. The cost price (in ₹) of the article is

(1) 540

(2) 318

(3) 600

(4) 350

116. A cloth merchant on selling 33 metres of cloth obtains a profit equal to the selling price of 11 metres of cloth. The profit is

(1) 40%

(2) 22%

(3) 50%

(4) 11%

117. A single discount equivalent to successive discounts of 20%, 10% and 5% is

(1) 35%

(2) 35.6%

(3) 31.6%

(4) 36.1%

118. A, B and C started a business with their investments in the ratio 1 : 2 : 4. After 6 months A increased his capital by 50% and B invested twice the amount as before, while C

withdrew  $\frac{1}{4}$  of his own investment.

The ratio of their profits at the end of the year was

(1) 10 : 5 : 9

(2) 5 : 12 : 14

(3) 6 : 9 : 17

(4) 5 : 14 : 16

119. Two trains 180 metres and 120 metres in length are running towards each other on parallel tracks, one at the rate 65 km/hour and another at 55 km/hour. In how many seconds will they be clear of each

other on the moment they meet ?

(1) 6

(2) 9

(3) 12

(4) 15

120. Three men can complete a piece of work in 6 days. Two days after they started the work, 3 more men joined them. How many days will they take to complete the remaining work ?

(1) 1 days

(2) 2 days

(3) 3 days

(4) 4 days

121. If  $x + \frac{1}{x+1} = 1$ , then

$$(x+1)^5 + \frac{1}{(x+1)^5} \text{ equals}$$

(1) 1

(2) 2

(3) 4

(4) 8

122. If  $\frac{1}{a} - \frac{1}{b} = \frac{1}{a-b}$ , then the value of  $a^3 + b^3$  is

(1) 0

(2) -1

(3) 1

(4) 2

123. If  $a^2 + b^2 + c^2 = ab + bc + ca$ ,

then,  $\frac{a+c}{b}$  is equal to

(1) 1

(2) 2

(3) 3

(4) 4

124. If the graphs of the equations  $x + y = 0$  and  $5y + 7x = 24$  intersect at  $(m, n)$ , then the value of  $m + n$  is

(1) 2

(2) 1

(3) 0

(4) -1

125. If  $x = 5 - \sqrt{21}$ , then the value

$$\text{of } \frac{\sqrt{x}}{\sqrt{32-2x-\sqrt{21}}} \text{ is}$$

(1)  $\frac{1}{\sqrt{2}}(\sqrt{3}-\sqrt{7})$

(2)  $\frac{1}{\sqrt{2}}(\sqrt{7}-\sqrt{3})$

(3)  $\frac{1}{\sqrt{2}}(\sqrt{7}+\sqrt{3})$

(4)  $\frac{1}{\sqrt{2}}(7-\sqrt{3})$

**126.** In  $\Delta ABC$ , the internal bisectors of  $\angle ABC$  and  $\angle ACB$  meet at I and  $\angle BAC = 50^\circ$ . The measure of  $\angle BIC$  is  
 (1)  $105^\circ$  (2)  $115^\circ$   
 (3)  $125^\circ$  (4)  $130^\circ$

**127.** BL and CM are medians of  $\Delta ABC$  right-angled at A and  $BC = 5$  cm. If  $BL = \frac{3\sqrt{5}}{2}$  cm, then the length of CM is  
 (1)  $2\sqrt{5}$  cm (2)  $5\sqrt{2}$  cm  
 (3)  $10\sqrt{2}$  cm (4)  $4\sqrt{5}$  cm

**128.** In  $\Delta ABC$  D and E are the points of sides AB and BC respectively such that  $DE \parallel AC$  and  $AD : DB = 3 : 2$ . The ratio of area of trapezium ACED to that of  $\Delta BED$  is  
 (1) 4 : 15 (2) 15 : 4  
 (3) 4 : 21 (4) 21 : 4

**129.** A quadrilateral ABCD circumscribes a circle and  $AB = 6$  cm,  $CD = 5$  cm and  $AD = 7$  cm. The length of side BC is  
 (1) 4 cm (2) 5 cm  
 (3) 3 cm (4) 6 cm

**130.** P and Q are centres of two circles with radii 9 cm and 2 cm respectively, where  $PQ = 17$  cm. R is the centre of another circle of radius  $x$  cm, which touches each of the above two circles externally. If  $\angle PRQ = 90^\circ$ , then the value of  $x$  is  
 (1) 4 cm (2) 6 cm  
 (3) 7 cm (4) 8 cm

**131.** The area of a rhombus is 216 cm and the length of its one diagonal is 24 cm. The perimeter (in cm) of the rhombus is  
 (1) 52 (2) 60  
 (3) 120 (4) 100

**132.** The perimeter of an isosceles triangle is 544 cm and each of the equal sides is  $\frac{5}{6}$  times the base. What is the area (in  $\text{cm}^2$ ) of the triangle?  
 (1) 38172 (2) 18372  
 (3) 31872 (4) 13872

**133.** A metallic sphere of radius 10.5 cm is melted and then recast into small cones each of radius 3.5 cm and height 3 cm. The number of cones thus formed is  
 (1) 140 (2) 132  
 (3) 112 (4) 126

**134.** If the ratio of the diameters of two right circular cones of equal height be 3 : 4, then the ratio of their volumes will be  
 (1) 3 : 4 (2) 9 : 16  
 (3) 16 : 9 (4) 27 : 64

**135.** A right pyramid stands on a square base of diagonal  $10\sqrt{2}$  cm. If the height of the pyramid is 12 cm, the area (in  $\text{cm}^2$ ) of its slant surface is  
 (1) 520 (2) 420  
 (3) 360 (4) 260

**136.** If each interior angle of a regular polygon is  $150^\circ$ , the number of sides of the polygon is  
 (1) 8 (2) 10  
 (3) 15 (4) None of these

**137.** If the altitude of a right prism is 10 cm and its base is an equilateral triangle of side 12 cm, then its total surface area (in  $\text{cm}^2$ ) is  
 (1)  $(5 + 3\sqrt{3})$  (2)  $36\sqrt{3}$   
 (3) 360 (4)  $72(5 + \sqrt{3})$

**138.** The value of  $\tan 10^\circ \tan 15^\circ \tan 75^\circ \tan 80^\circ$  is  
 (1) 0 (2) 1  
 (2) -1 (4) 2

**139.** The minimum value of  $4 \tan^2 \theta + 9 \cot^2 \theta$  is equal to  
 (1) 0 (2) 5  
 (3) 12 (4) 13

**140.** If  $\sin 7x = \cos 11x$ , then the value of  $\tan 9x + \cot 9x$  is  
 (1) 1 (2) 2  
 (3) 3 (4) 4

**141.** If  $\tan^2 \alpha = 1 + 2 \tan^2 \beta$  ( $\alpha, \beta$  are positive acute angles), then  $\sqrt{2} \cos \alpha - \cos \beta$  is equal to  
 (1) 0 (2)  $\sqrt{2}$   
 (3) 1 (4) -1

**142.** From a tower 125 metres high, the angles of depression of two objects, which are in horizontal line through the base of the tower, are  $45^\circ$  and  $30^\circ$  and they are on the same side of the tower. The distance (in metres) between the objects is  
 (1)  $125\sqrt{3}$   
 (2)  $125(\sqrt{3} - 1)$   
 (3)  $125/(\sqrt{3} - 1)$   
 (4)  $125(\sqrt{3} + 1)$

**143.** If  $a + b + c = 0$ , then  $a^3 + b^3 + c^3$  is equal to  
 (1)  $a + b + c$  (2)  $abc$   
 (3)  $2abc$  (4)  $3abc$

**144.** Two numbers 11284 and 7655, when divided by a certain number of three digits, leaves the same remainder. The sum of digits of such a three-digit number is  
 (1) 8 (2) 9  
 (3) 10 (4) 11

**145.** Two pipes X and Y can fill a cistern in 24 minutes and 32 minutes respectively. If both the pipes are opened together, then after how much time (in minutes) should Y be closed so that the tank is full in 18 minutes?  
 (1) 10 (2) 8  
 (3) 6 (4) 5

**146.** The length and breadth of a rectangular field are in the ratio 7 : 4. A path 4 m wide running all round outside has an area of  $416 \text{ m}^2$ . The breadth (in m) of the field is  
 (1) 28 (2) 14  
 (3) 15 (4) 16

**Directions (147-148) :** Study the table and answer the questions.

Height (in cm)	Number of girls
less than 140	4
less than 145	11
less than 150	29
less than 155	40
less than 160	46
less than 165	51

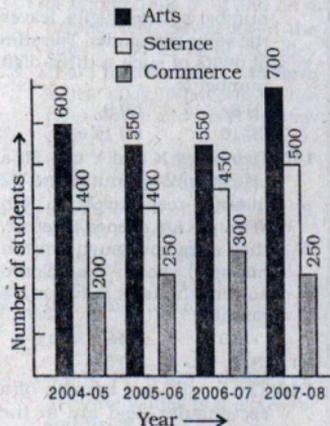
147. The number of girls whose height is above 150 cm is

- (1) 22 (2) 29  
(3) 86 (4) 97

148. Average height (in cm) of the girls whose heights are 155cm and above is about

- (1) 158.7  
(2) 159.8  
(3) 160.4  
(4) 162.6

**Directions (149-150) :** Student's strength of a college in Arts, Science and Commerce from 2004-05 to 2007-08 sessions are shown in the following bar graph. Study the graph and answer the questions.



149. The ratio of average number of students in Arts to the average number of students in Commerce is

- (1) 12 : 5  
(2) 10 : 7  
(3) 7 : 4  
(4) 48 : 35

150. The increase in Science students in 2007-08 over 2006-07 was

- (1) 10.1%  
(2) 11.1%  
(3) 16.7%  
(4) 18.2%

## GENERAL AWARENESS

151. Production of a commodity mostly through the natural process is an activity of

- (1) Primary Sector  
(2) Secondary Sector  
(3) Tertiary Sector  
(4) Technology Sector

152. The Law of Demand is based on

- (1) Manufacturer's preference  
(2) Seller's preference  
(3) Supplier's preference  
(4) Consumer's preference

153. Which one of the following is not a method for computing GNP ?

- (1) Income Approach  
(2) Expenditure Approach  
(3) Savings Approach  
(4) Value Added Approach

154. A part of National Debt known as External Debt is the amount

- (1) borrowed by its citizens from abroad  
(2) lent by its citizens to foreign governments  
(3) borrowed by its government from abroad  
(4) lent by its government to foreign government

155. The non-expenditure costs which arise when the producing firm itself owns and supplies certain factors of production are

- (1) Explicit costs  
(2) Original costs  
(3) Implicit costs  
(4) Replacement costs

156. Who said "Rama Rajya through Grama Rajya"?

- (1) Mahatma Gandhi  
(2) Vinoba Bhave  
(3) Jayaprakash Narayan  
(4) Jawaharlal Nehru

157. Where do we find the ideals of Indian democracy in the Constitution ?

- (1) The Preamble  
(2) Part III  
(3) Part IV (4) Part I

158. Comptroller and Auditor General of India is appointed by the

- (1) Prime Minister  
(2) President  
(3) Finance Minister  
(4) Lok Sabha

159. Which Article of the Indian Constitution directs the State Governments to organise Village Panchayats ?

- (1) Article 32  
(2) Article 37  
(3) Article 40  
(4) Article 51

160. The Attorney General of India has the right of audience in

- (1) the Supreme Court  
(2) any High Court  
(3) any Sessions Court  
(4) any Court of Law within India

161. The capital of the ancient Chola kingdom was

- (1) Uraiyur  
(2) Kaveripoompattinam  
(3) Thanjavur  
(4) Madurai

162. Arrange the dynasties of Delhi Sultanate given below in chronological order :

1. Khilji
  2. Tughlaq
  3. Sayyad
  4. Slave
- (1) 4, 1, 3, 2  
(2) 1, 4, 2, 3  
(3) 1, 2, 3, 4  
(4) 4, 1, 2, 3

163. Which was the earliest settlement of the Dutch in India ?

- (1) Masulipatnam  
(2) Pulicat  
(3) Surat  
(4) Ahmedabad

164. During British rule, who was instrumental for the introduction of the Ryotwari system in the then Madras Presidency ?

- (1) Macartney  
(2) Elphinstone  
(3) Thomas Munro  
(4) John Lawrence

165. Who amongst the following was not associated with the Unification of Italy ?  
 (1) Cavour (2) Garibaldi  
 (3) Mussolini (4) Mazzini
166. The Greater Himalayas is otherwise called as  
 (1) Himadri  
 (2) Sahyadri  
 (3) Assam Himalayas  
 (4) Siwaliks
167. The cup-shaped mouth of the volcano is  
 (1) Focus (2) Epicentre  
 (3) Crater (4) Cinder cone
168. The cool temperate grasslands of South America are known as  
 (1) Pampas (2) Prairies  
 (3) Veld (4) Savannah
169. Which of the biomes is called the "Bread Basket" of the world?  
 (1) Mid-latitude grasslands  
 (2) Taiga  
 (3) Mediterranean  
 (4) Tropical Savannah
170. Asia and North America are separated by  
 (1) Bass Strait  
 (2) Strait of Dover  
 (3) Bering Strait  
 (4) Cook Strait
171. Phototropic movement is controlled by  
 (1) Auxin  
 (2) Gibberellin  
 (3) Cytokinin  
 (4) Ethylene
172. Lactogenic hormone is secreted by  
 (1) Mammary glands  
 (2) Placenta  
 (3) Ovary (4) Pituitary
173. An organism which can monitor air pollution is  
 (1) Bacteria (2) Lichen  
 (3) Algae (4) Fungi
174. In the human body, which of the following organs is responsible for water balance ?  
 (1) Heart (2) Liver  
 (3) Kidneys (4) Lungs

175. Chlorophyll containing autotrophic thallophytes is called as  
 (1) Algae  
 (2) Lichens  
 (3) Fungi  
 (4) Bryophytes
176. Match correctly the insect vectors in List I with the diseases transmitted by them given in List II:  
**List I**  
 a. Anopheles (female)  
 b. Culex  
 c. Sand fly  
 d. Tse-tse fly  
**List II**  
 1. Kala-azar  
 2. Sleeping sickness  
 3. Filariasis  
 4. Malaria  
 (1) a-1, b-4, c-2, d-3  
 (2) a-2, b-1, c-4, d-3  
 (3) a-3, b-2, c-1, d-4  
 (4) a-4, b-3, c-1, d-2
177. A white and smooth surface is  
 (1) good absorber and good reflector of heat  
 (2) bad absorber and good reflector of heat  
 (3) good absorber and bad reflector of heat  
 (4) bad absorber and bad reflector of heat
178. When a body is immersed in a liquid, the force acting on it is  
 (1) Upthrust  
 (2) Weight  
 (3) Mass  
 (4) Both (1) and (2)
179. When two semiconductors of p- and n-type are brought in contact, they form p-n junction which acts like a/an  
 (1) Conductor  
 (2) Oscillator  
 (3) Rectifier  
 (4) Amplifier
180. The mass of a body measured by a physical balance in a lift at rest is found to be m. If the lift is going up with an accel-

- eration 'a', its mass will be measured as  
 (1)  $m \left( 1 - \frac{a}{g} \right)$   
 (2)  $m \left( 1 + \frac{a}{g} \right)$   
 (3) m  
 (4) zero
181. A computer programming language often used by children is  
 (1) LOGO (2) PILOT  
 (3) BASIC (4) JAVA
182. A portable, personal computer small enough to fit on your lap is called a  
 (1) Note-book computer  
 (2) PDA  
 (3) Mainframe computer  
 (4) Workstation
183. Assembler is a program that translates the program from  
 (1) high-level to assembly  
 (2) assembly to machine  
 (3) machine to low-level  
 (4) low-level to high-level
184. 'Table sugar' is which type of sugar ?  
 (1) Fructose (2) Galactose  
 (3) Glucose (4) Sucrose
185. An alloy used in making heating elements for electric heating device is  
 (1) Solder (2) Alloy Steel  
 (3) Nichrome  
 (4) German Silver
186. The degree of dissociation of an electrolyte depends on  
 (1) dilution  
 (2) impurities  
 (3) atmospheric pressure  
 (4) method of dissolution
187. Chlorophyll contains  
 (1) Iron  
 (2) Magnesium  
 (3) Cobalt (4) Zinc
188. The gas causing acid rain in an industrial area is  
 (1) Carbon dioxide  
 (2) Carbon monoxide  
 (3) Sulphur dioxide  
 (4) Methane

- 189.** The famous three P's of environmental awareness are
- (1) People, Poverty, Politics
  - (2) Power, Production, Pollution
  - (3) Population, Politics, Price
  - (4) Population, Poverty, Pollution
- 190.** The stagnant water at the bottom of a lake is called
- (1) Epilimnion
  - (2) Mesolimnion
  - (3) Metalimnion
  - (4) Hypolimnion
- 191.** Shri Jyotiraditya Madhavarao Scindia is the Minister of State with independent charge of the Ministry of
- (1) Tourism
  - (2) Chemicals and Fertilizers
  - (3) Power
  - (4) Information and Broadcasting
- 192.** Who won the Wimbledon Men's Singles in 2013?
- (1) Andy Murray
  - (2) Novak Djokovic
  - (3) Juan Martin Del Potro
  - (4) Fernando Verdasco
- 193.** Who won the Silver Medal for the Women's 400 metre race in the Asian Athletic Championships 2013 ?
- (1) Zhao Yanmin
  - (2) M.R. Poovamma
  - (3) Tintu Luka
  - (4) Mayookha Johny
- 194.** Where is Taksim Square, which witnessed in 2013 prolonged massive protests against the redevelopment of Gezi Park?
- (1) Ankara (2) Cairo
  - (3) Istanbul (4) Teheran
- 195.** Among the following political leaders of South India, who has *not* acted in any film ?
- (1) C.N. Annadurai
  - (2) Jayalalitha
  - (3) N.T. Rama Rao
  - (4) M.G. Ramachandran
- 196.** Which one of the following days is "*not* observed on a fixed date every year ?

- (1) World Environment Day
  - (2) International Women's Day
  - (3) International Friendship Day
  - (4) World Habitat Day
- 197.** Which one of the following novels was a source of inspiration for the freedom fighters in India ?
- (1) Pariksha Guru
  - (2) Anandmath
  - (3) Rangbhoomi
  - (4) Padmarag
- 198.** Which prestigious award was given in 2013 to Aparajita Datta for her outstanding contribution for the conservation of hornbills ?
- (1) Magsaysay Award
  - (2) Right Livelihood Award
  - (3) Whitley Award
  - (4) Rajiv Gandhi Ecology Award
- 199.** Which presently serving State Chief Minister has been in office continuously for the longest period ?
- (1) Sheila Dikshit
  - (2) Narendra Modi
  - (3) Bhupinder Singh Hooda
  - (4) Manik Sarkar
- 200.** Which one of the following monuments is the first inhabited World Heritage Monument ?
- (1) Agra Fort
  - (2) Red Fort
  - (3) Jaisalmer Fort
  - (4) Amber Fort