

# JIPMAT - 2022

## QUANTITATIVE ABILITY

QUESTIONS: 33 (+4/-1)

TOTAL TEST TIME: 2.5 HRS

- A sum becomes double in 10 years, then annual rate of simple interest is  
(a) 8% (b) 5% (c) 10% (d) 20%
- P, Q and R invested Rs. 25,000, Rs. 50,000 and Rs. 25,000 respectively to start a business. At the end of two years, they earned a profit of Rs. 48,000. What will be Q's share?  
(a) 24,000, (b) 36,000 (c) 12,000 (d) 20,000

- Match List I with List II

List I (Quadratic Equation)	List II (Roots)
A. $6x^2 + x - 12 = 0$	I. (-6,4)
B. $8x^2 + 16x - 10 = -202$	II. (9,36)
C. $x^2 - 45x + 324 = 0$	III. $(3, -\frac{1}{2})$
D. $2x^2 - 5x - 3 = 0$	IV. $(-\frac{3}{2}, \frac{4}{3})$

Choose the answer from the given below:

- (a) A-I, B-III, C-IV, D-II (b) A-IV, B-I, C-II, D-III  
(c) A-II, B-IV, C-III, D-I (d) A-III, B-II, C-I, D-IV
- The population of a village is 5000. If in a year, the number of males were to increase by 5% and that of females by 3% annually, the population would grow to 5202 at the end of the year. If M is the number of males and F is the number of females in the village, then (M,F) =  
(a) (3000, 2000) (b) (2800, 2200) (c) (2600, 2200) (d) (2700, 2300)
- If A earns  $33\frac{1}{3}\%$  more than B, then percentage B earns less than A will be  
(a)  $66\frac{2}{3}\%$  (b) 25% (c) 65% (d)  $33\frac{1}{3}\%$
- Which of the following trigonometric identities are true?  
A.  $\sin^2(41^\circ) + \sin^2(49^\circ) = 1$   
B.  $\sin^2(60^\circ) - 2 \tan(45^\circ) - \cos^2(30^\circ) = -1$   
C.  $\sin^2(\theta) + \frac{1}{1+\tan^2(\theta)} = 1$

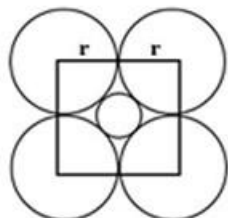
Choose the correct answer from the options given below:

- (a) A and B only (b) A and C only (c) B and C only (d) A, B and C
- Which of the following is the value of m for which the polynomial  $x^4 + 10x^3 + 25x^2 + 15x + m$  is exactly divisible by  $x + 7$ ?  
(a) -91 (b) -101 (c) 15 (d) 115
- The area of a circular play ground is  $22176 \text{ cm}^2$ . What is the cost of fencing this ground at the rate of ₹50 per metre?  
(a) ₹ 264 (b) ₹ 400 (c) ₹ 312 (d) ₹ 244
- The sum of n-terms of sequence  $\frac{1}{1 \times 2}, \frac{1}{2 \times 3}, \frac{1}{3 \times 4}, \dots$  is  
(a)  $\frac{1}{n+1}$  (b)  $\frac{1}{n}$  (c)  $\frac{n+1}{n}$  (d)  $\frac{n}{n+1}$
- If I can do  $\frac{1}{4}$  of a work in 3 days and 'B' can do  $\frac{1}{6}$  of same work in 4 days, how much will, 'A' get if both work together and are paid ₹ 180 in all  
(a) ₹ 36 (b) ₹ 60 (c) ₹ 108 (d) ₹ 120

11. Two poles of height 6 m and 11 m stand vertically upright on a plane ground. If the distance between their foot is 12 m, then distance between their tops is  
(a) 12 m (b) 14 m (c) 13 m (d) 11 m
12. The value of a flat worth ₹ 5,00,000 is depreciating at the rate of 10% p.a. In how many years, will the value be reduced to ₹ 364500.  
(a) 2 years (b) 3 years  
(c) 3 years six month (d) 4 year
13. How many litres of water should be added to a 30 litres mixture of milk and water containing milk and water in the ratio 7:3 such that the resultant mixture has 40% water in it  
(a) 5 (b) 2 (c) 3 (d) 8
14. Given below are two statements:  
Statement I : The sum of exponents of prime factors in the prime factorization of 392 is 5.  
Statement II : The decimal representation  $\frac{13}{2^3 \times 5}$  will terminate after 2 decimal places.  
In the light of the above statements, choose the correct answer from the options given below:  
(a) Both Statement I and Statement II are true.  
(b) Both Statement I and Statement II are false  
(c) Statement I is true but Statement II is false  
(d) Statement I is false but Statement II is true
15. Given below are two statement based on the following  
If A and B are independent events such that  $P(A) = p$ ,  $P(B) = 2p$  and  $P(\text{exactly one of } A, B) = \frac{5}{9}$   
Statement I:  $p = \frac{1}{3}$   
Statement II:  $p = \frac{5}{12}$   
In the light of the above statements, choose the correct answer form the question given below  
(a) Both Statement I and Statement II are true.  
(b) Both Statement I and Statement II are false  
(c) Statement I is true but Statement II is false  
(d) Statement I is false but Statement II is true
16. Given below are two statements based on the following:  
A motor boat can travel 30 km upstream and 28 km downstream in 7 hours. It can travel 21 km upstream and return in 5 hours.  
Statement I : Speed of the boat in still water is 12 km per hour.  
Statement II : Speed of the stream is 4 km per hour.  
In the light of the above statements, choose the correct answer from the options given below:  
(a) Both Statement I and Statement II are true.  
(b) Both Statement I and Statement II are false  
(c) Statement I is true but Statement II is false  
(d) Statement I is false but Statement II is true
17. Floor of a room is 15 m 17 cm long and 9 m 2 cm broad. What is the least number of square tiles required to pave the floor?  
(a) 768 (b) 906 (c) 814 (d) 652
18. Two persons A and B starts from same point to travel from Chandigarh to Ambala. Distance between Chandigarh and Ambala is 60 km. Speed of A is 4 km/hr. slower than B. B when reaches Ambala, starts back via same route without taking any rest and meets A who was still 12 km away from Ambala. Find speed of A.  
(a) 4 km/hr (b) 8 km/hr (c) 12 km/hr (d) 14 km/hr
19. If LCM of two numbers is 12 times HCF and the sum of LCM and HCF is 403, if one number is 93, find the other number  
(a) 124 (b) 114 (c) 128 (d) 96

20. The father's age is six times his son's age. Four years hence, the age of the father will be four times his son's age. The present age (in years) of the son and the father are, respectively  
(a) 6 and 36 (b) 4 and 24 (c) 5 and 30 (d) 7 and 42
21. Three years ago, ratio of ages of Amisha and Namisha was 8:9. 3 years from now the ratio will become 11:12. What is the present age of Amisha?  
(a) 2 years (b) 16 years (c) 19 years (d) 21 years

22.



If radius of each of four outer circles is  $r$ , then radius of innermost circle is

- (a)  $\frac{\sqrt{2}}{\sqrt{2}+1}r$  (b)  $\frac{1}{\sqrt{2}}r$  (c)  $(\sqrt{2}-1)r$  (d)  $\sqrt{2}r$
23. If  $\sin(\alpha)$  and  $\cos(\alpha)$  are the roots of the equation  $ax^2 + bx + c = 0$ , then  $b^2$  is  
(a)  $c^2 + 2ac$  (b)  $a^2 + ac$  (c)  $a^2 + 2ac$  (d)  $c^2 + ac$
24. If the mean of  $a$ ,  $b$  and  $c$  is  $M$ ;  $ab + bc + ca = 0$ ; and the mean of  $a^2$ ,  $b^2$  and  $c^2$  is  $KM^2$ , then  $K$  is equal to  
(a) 2 (b) 9 (c) 6 (d) 4
25. Match List I with List II

List I	List II
A. Mean of first five prime numbers is	I. 12
B. Mean of all factors of 24 is	II. 7.5
C. Mean of first six multiples of 4 is	III. 5.6
D. If the mean of $x - 5y$ , $x - 3y$ , $x - y$ , $x + y$ , $x + 3y$ and $x + 5y$ is 12, then $x$ is	IV. 14

Choose the correct answer from the options given below:

- (a) A-II, B-I, C-III, D-IV (b) A-III, B-II, C-IV, D-I  
(c) A-I, B-IV, C-II, D-III (d) A-IV, B-III, C-I, D-II

26.  $\frac{\sqrt{5+\sqrt{3}}}{\sqrt{8-2\sqrt{15}}} + \frac{\sqrt{11+2\sqrt{30}}}{\sqrt{6-\sqrt{5}}} =$   
(a)  $25 + \sqrt{10} + 2\sqrt{30}$  (b)  $40 + \sqrt{10} + 2\sqrt{30}$   
(c)  $30 + \sqrt{20} + 2\sqrt{30}$  (d)  $15 + \sqrt{15} + 2\sqrt{30}$

27. If  $a + b = 2a - 3b + ab$ , then  $3 \times 5 + 5 \times 3$  is equal to  
(a) 26 (b) 24 (c) 22 (d) 20

28. The value of  $\frac{325 \times 325 \times 325 + 175 \times 175 \times 175}{325 \times 325 - 325 \times 175 + 175 \times 175}$  is  
(a) 143755 (b) 1125 (c) 9575 (d) 500

29. Given below are two statements:

Statement I: In  $\triangle ABC$ ,  $AB = 6\sqrt{3}$  cm,  $AC = 12$  cm and  $BC = 6$  cm, then angle  $B = 90^\circ$

Statement II: In  $\triangle ABC$ , is an isosceles with  $AC = BC$ . If  $AB^2 = 2AC^2$ , Then angle  $C = 90^\circ$

In the light of the above statement, choose the correct answer form the question below

- (a) Both Statement I and Statement II are true (b) Both Statement I and Statement II are false  
(c) Statement I is true but Statement II is false (d) Statement I is false but Statement II is true

30. Given below are two statement:

Statement I: If  $\sin(\theta) = \frac{5}{13}$ , then the value of  $\tan(\theta) = \frac{5}{12}$

Statement II: if  $\cot(\theta) = \frac{12}{5}$ , then the value of  $\sin(\theta) = \frac{5}{12}$

In the light of the above statements, choose the correct answer form the question below

- (a) Both Statement I and Statement II are true
- (b) Both Statement I and Statement II are false
- (c) Statement I is true but Statement II is false
- (d) Statement I is false but Statement II is true

31. A two digit number is 7 times the sum of its two digits. The number that is formed by reversing its digits is 18 less than original number. What is the number?

- (a) 24
- (b) 42
- (c) 36
- (d) 63

32. If  $\frac{a}{b+c} = \frac{b}{c+a} = \frac{c}{a+b} = k$  then value of k is

- (a)  $\pm \frac{1}{2}$
- (b)  $\frac{1}{2}$  or  $-1$
- (c)  $-1$
- (d)  $\frac{1}{2}$

33. The equation of the circle which passes through the point (4, 5) and its centre at (2, 2) is

- (a)  $(x - 2) + (y - 2) = 13$
- (b)  $(x - 2)^2 + (y - 2)^2 = 13$
- (c)  $x^2 + y^2 = 13$
- (d)  $(x - 4)^2 + (y - 5)^2 = 13$

## DATA INTERPRETATION AND LOGICAL REASONING

### QUESTIONS: 33 (+4/-1)

**Direction (Q.34-Q.36):** Following expenditure was incurred by a company under different heads:

#### Item of Expenditure

Year 2000	Salary	Cost of components	Power	Interest	Taxes
2000	288	296	26.4	12.2	32.0
2001	299	332	28.4	14.2	34.6
2002	298	382	26.2	14.8	38.8
2003	305	410	28.6	15.2	42.4
2004	316	428	32.0	14.3	42.6

34. What is the approximate ratio between total tax paid and cost of components over all these years?  
(a) 11 : 117 (b) 3 : 70 (c) 14 : 138 (d) 12 : 141
35. Total expenditure in 2000 was what percentage of total expenditure in 2003?  
(a) 60.03% (b) 81.70% (c) 76.56% (d) 122.39%
36. Which year saw the maximum increase in salary over the previous year?  
(a) 2001 (b) 2002 (c) 2003 (d) 2004

**Direction (Q.37-Q.40):** A Teacher has partial data of the students result:

Sex	Grade			Total
	A	B	C	
Girl				40
Boys	5			
Total		30		

The other information available is -

1. Half the students have grade A and B
  2. 50% of the students are girls
  3.  $\frac{1}{4}$  of boys have grade C
37. The numbers of girls who have grade B and number of girls who have grade C are -  
(a) 5, 30 (b) 30, 5 (c) 10, 30 (d) 30, 10
38. The number of girls, boys and total number of students is -  
(a) Girls - 40, Boys - 45, Total - 85 (b) Girls - 40, Boys - 40, Total - 80  
(c) Girls - 40, Boys - 50, Total - 90 (d) Girls - 40, Boys - 35, Total - 75
39. Half the students have grade A or B. The number of girls of Grade A and total (girls and boys) having grade A are-  
(a) 5, 10 (b) 5, 5 (c) 10, 5 (d) 10, 10
40. Number of boys who have grade B and number of boys who have grade C are-  
(a) 25, 10 (b) 10, 25 (c) 10, 30 (d) 30, 10
41. There is certain relationship between two given terms on one side of ( : : ) and one term is given on the other side of ( : : ). While another term is to be found from given alternates having the same relation with this term as the terms of given pairs  
LCQJ : METN :: ABDF : ?  
(a) BCEG (b) CEFI (c) DEGI (d) BDGJ
42. Sheela is wife of Arun. Deepak is brother of Sheela. Geeta and Mita are children of Sunita, who is wife of Deepak. How is Arun related to Mita ?  
(a) Grandfather (b) Mother (c) Uncle (d) Father in law

43. Three statements are given. Based on the three statements, four conclusions are given. Consider the three statements as True and decide which of the conclusions logically follow from the statements :

**Statements:**

All Sparrows are birds  
All birds are mountains.  
All mountains are skies.

**Conclusions:**

- I) All Sparrows are skies.  
II) All Skies are birds.  
III) All mountains are sparrows  
IV) All birds are skies

- (a) Only I and III follow (b) Only II and III follow  
(c) Only I and IV follow (d) Only II and IV follow

44. Various terms of an alphabet series are given with one or more terms missing as shown by (?) choose the missing term out of the given

AGDLX, GDLXA, DLXAG, ?, XAGDL, AGDLX

- (a) LXAGD (b) XAGLD  
(c) DXAGL (d) GLXAD

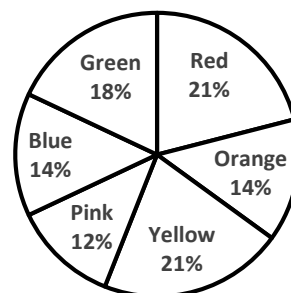
45. Read the following information:

A and C are good in History and Biology  
A is also good in Math.  
B and D are good in Physics  
A is also good in Chemistry  
C and D are good in Chemistry  
Who is /are good in four of these five subjects?

- (a) A and C (b) C (c) A (d) D

**Direction (Q.46-Q.50):** In a box, there are several balls. The pie -chart shows the percentage -wise distribution of 5 different colours of balls; and total number of balls = 1000. Also, the ratio of the light and dark shades of the six colors of balls is given :

Color	Light: Dark
Red	3:4
Blue	5:3
Green	1:3
Pink	1:7
Yellow	9:5
Orange	7:9

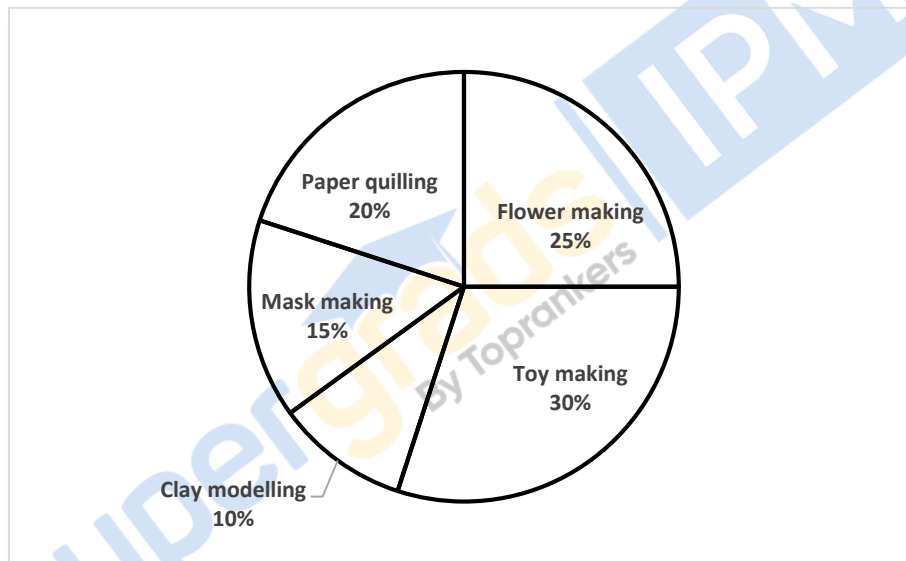


Based on the above data.

46. How many dark red balls are there in the box?  
(a) 110 (b) 120 (c) 130 (d) 140
47. What is the total number of green balls?  
(a) 170 (b) 180 (c) 185 (d) 190
48. What is the total percentage of orange, yellow and pink balls in the box?  
(a) 46 (b) 47 (c) 48 (d) 49
49. What is the difference between number of light red balls and number of dark yellow balls?  
(a) 15 (b) 12 (c) 17 (d) 14

50. What is the ratio of dark pink balls to the dark green balls?  
 (a) 6 : 9, (b) 7 : 8 (c) 7 : 9 (d) 6 : 8
51. Four friends Jaspreet, Rohit, Rihanna and Blessy like different sports. All of them are the active members of their clubs. One person can become a member of one club only. There are three clubs- Dance, Theatre and Eco club in the school.  
 Jaspreet who likes swimming is not a member of dance club. Rihanna is a member of dance club but does not like tennis. Rohit likes badminton but is not a member of theatre or dance club.  
 Blessy is a member of Eco club and does not like swimming and badminton.  
 Who likes badminton and is a member of Eco club ?  
 (a) Jaspreet (b) Rohit (c) Rihanna (d) Blessy
52. Complete the series:  
 CEFH, IKLN, \_\_\_\_\_, UWXZ  
 (a) OPQR (b) PRSU (c) PQST (d) OQRT

**Direction (Q.53-Q.55):** Study the following pie-chart and answer the following questions:  
 Percentage-wise participation of students in various activities Total number of students = 40  
 Total number of students = 40



53. How many students participated in mask-making and paper-quilling activity?  
 (a) 14 (b) 12 (c) 16 (d) 10
54. How many students did not participate in toy-making activity?  
 (a) 16 (b) 12 (c) 10 (d) 20
55. How many students participated in flower-making activity?  
 (a) 12 (b) 10 (c) 16 (d) 20
56. Pointing towards a person in a photograph Rani said, "He is the only son of the father of my sister's brother". How the person in the photograph related to Rani?  
 (a) Father (b) Sister (c) Cousin (d) Brother
57. Consider an alphabetic series shown below as: A, C, F, J  
 The next two terms of the series are?  
 (a) L and P (b) O and U (c) M and R (d) S and U

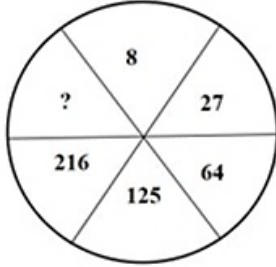


58. Find the missing term in the series given below:

6, 8, 4, 6, 3, 5, ?,  $\frac{9}{12}$ , ... ..

- (a) 8 (b) 3 (c)  $\frac{5}{2}$  (d)  $\frac{9}{4}$

59. The numbers in the figure below have been generated using certain logic/pattern. Using that logic/pattern, find out the number that can be inserted in place of ?.



- (a) 343 (b) 128 (c) 432 (d) 341
60. If  $623 = 49$   
 $516 = 62$  and  
 $438 = 39$   
 Then what is 583?  
 (a) 36 (b) 98 (c) 65 (d) 69

61. Find the wrong term in the series given below :

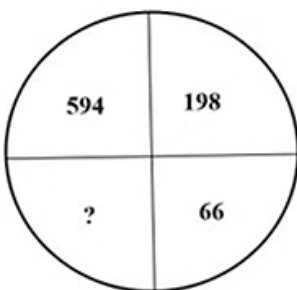
1, 9, 33, 105, 158, .....

- (a) 158 (b) 105 (c) 33 (d) 9

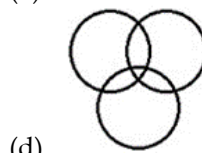
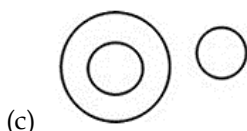
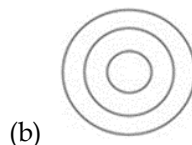
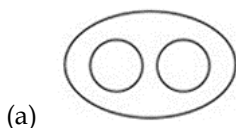
62. A man walks 3 kms towards east from his house. He then turns south and walks 4km. Again he turns west and walks 6km. How far is he from the starting point i.e. his house?

- (a) 7 km (b) 4 km (c) 5 km (d) 3 km

63. The numbers in the figure given below have been generated using some logic / pattern. Using that logic/pattern, find out the number that can be inserted in place of?



- (a) 33 (b) 22 (c) 18 (d) 30
64. Which of the following diagrams indicate the best relation among deer, lion and animals?





65. Based on the relationship between first two words on the left side of :: as given below, choose the correct word in place of ? to express similar relationship  
Botany : Plants :: Entomology : ?  
(a) Animals (b) Germs (c) Birds (d) Insects
66. If '+' means '÷', '÷' means '-', '-' means '×', '×' means '+', then find the value of the following :  
 $5 - (13 - 4 + 2 \div 6 \times 15 \div 5)$   
(a) 120 (b) 10 (c) 28 (d) 150

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**ENGLISH LANGUAGE**

**QUESTIONS: 34 (+4/-1)**

67. Rearrange the following parts of a sentence in order to make a meaningful sentence  
P responsible for anything  
Q we would be held  
R that went wrong  
S we were told that  
(a) RQPS (b) SQRP (c) SQPR (d) PQRS
68. A person belonging to the same period with another person is called \_\_\_\_\_  
(a) predecessor (b) contemptuous (c) contemporary (d) successor
69. Fill in the blank with a suitable word.  
Brevity is the soul \_\_\_\_\_ wit.  
(a) with (b) for (c) of (d) off
70. Fill in the blank with a suitable preposition.  
He broke \_\_\_\_\_ in the middle of his speech  
(a) of (b) apart (c) down (d) for
71. Each question has a sentence with two blanks followed by four pairs of words as choices. From the choices, select the pair of words that can best complete the given sentence.  
(a) used .... relieve (b) gave .... fake out  
(c) prescribed .... Prove (d) administered.... Combat
72. Fill in the blank with the most appropriate word. All we have to fear is fear \_\_\_\_\_.  
(a) ourselves (b) myself (c) itself (d) Yourself
73. Identify the word which means the same as 'sift'.  
(a) examine (b) calamity (c) worthiness (d) problematic
74. Fill in the blank with a suitable preposition.  
I prefer reading a book \_\_\_\_\_ watching a movie.  
(a) then , (b) over (c) To (d) Against
75. Pick out the correct sentence in passive voice of the following sentence :  
We compelled the enemy to surrender  
(a) The enemy is compelled to surrender by us.  
(b) We compel the enemy to surrender.  
(c) The enemy was compelling to surrender by us.  
(d) The enemy was compelled to surrender by us.
76. Which of the following sentences is correct ?  
(a) He was selected the very best player of the tournament. ,  
(b) He was selected the more best player of the tournament. ,  
(c) He was selected the more better player of the tournament.  
(d) He was selected the best player of the tournament.
77. Which of the following sentences is correct?  
(a) The coach ordered the player to not leave the camp  
(b) The coach ordered the player for not leave the camp  
(c) The coach ordered the player not to leave the camp  
(d) The coach order the player not to leave the camp
78. Pick out the correctly spelt word :  
(a) gratitus (b) occasional (c) ocasional (d) occasionally

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91. Rearrange the following parts of a sentence in order to make a meaningful sentence

P for five years, I was sure

Q when I decided to go abroad

R that my grandmother would be upset

S and at her age one could never tell

(a) RSPQ

(b) PSRQ

(c) SPQR

(d) QPRS

**Directions (Q.92-Q.98):** Read the following passage carefully and answer the questions that follow.

Man's growth from barbarism into civilization is supposed to be the theme of history. But sometimes, looking at great stretches of history, it is difficult to believe that we are very much civilized or advanced. There is enough of want of co-operation today as we see one country or people selfishly exploiting another.

Man in many ways has not made very great progress from other animals. Still, we look down upon the insects as almost the lowest of living things and yet the tiny bees and ants have learnt the art of co-operation and of sacrifice for the common good far better than man. If mutual co-operation and sacrifice for the good of society are the test of civilization, we may say that the bees and ants are superior to man. The old saying goes as follows: "For the family, sacrifice the individual, for the community, the family, for the country, the community, and for the soul, the whole world." It teaches us the lesson of co-operation and sacrifice for the larger good which we may have forgotten. How wonderful it is to see men and women, and boys and girls smilingly going ahead on the path of progress without caring any pain or suffering? Well, may they smile and be glad for the joy of serving a great cause which is theirs; and for those who are fortunate, comes the joy of sacrifice too.

92. How can we be truly civilized?

(a) by getting more wealth

(b) by getting more power

(c) by getting higher education

(d) by developing qualities of mutual help

93. Animals are superior to men because of their \_\_\_\_\_

(a) Physical strength

(b) great instinct for co-operation

(c) rude and blind behavior

(d) carefree life

94. What is the theme of above passage ?

(a) The Rise and Fall of Empires

(b) Man's search for Truth

(c) Man's Moral and Spiritual Development

(d) Man's quest for Idealism

95. What is the basic reason of exploitation of one man by another ?

(a) Moral Turpitude

(b) Lack of Education

(c) High Ethics

(d) Weakness of some people

96. Pick out the correct sentence in indirect narration of the following sentence:

He said, "How wise I am?"

(a) He exclaimed that I was very wise.

(b) He exclaimed that he was very wise

(c) He exclaimed that I am very wise

(d) He regretted that he was very wise.

97. Pick out the antonym of the word 'dissimulate'

(a) concrete

(b) circulate

(c) concealed

(d) Reveal

98. Pick out the correct sentence from the following sentences

(a) He didn't liked to attend the lecture

(b) He hadn't like to attend the lecture

(c) He haven't liked to attend the lecture

(d) He didn't like to attend the lecture

99. Pick out the part of sentence which has an error. If there is no error, mark '4'

(As I haven't see all the evidence.)

A

(I am reluctant)

B

(to make a judgment)

C

(a) A

(b) B

(c) C

(d) No error

100. Pick out the antonym of the word 'jocund'

(a) zealous

(b) cheerful

(c) gloomy

(d) Optimistic