

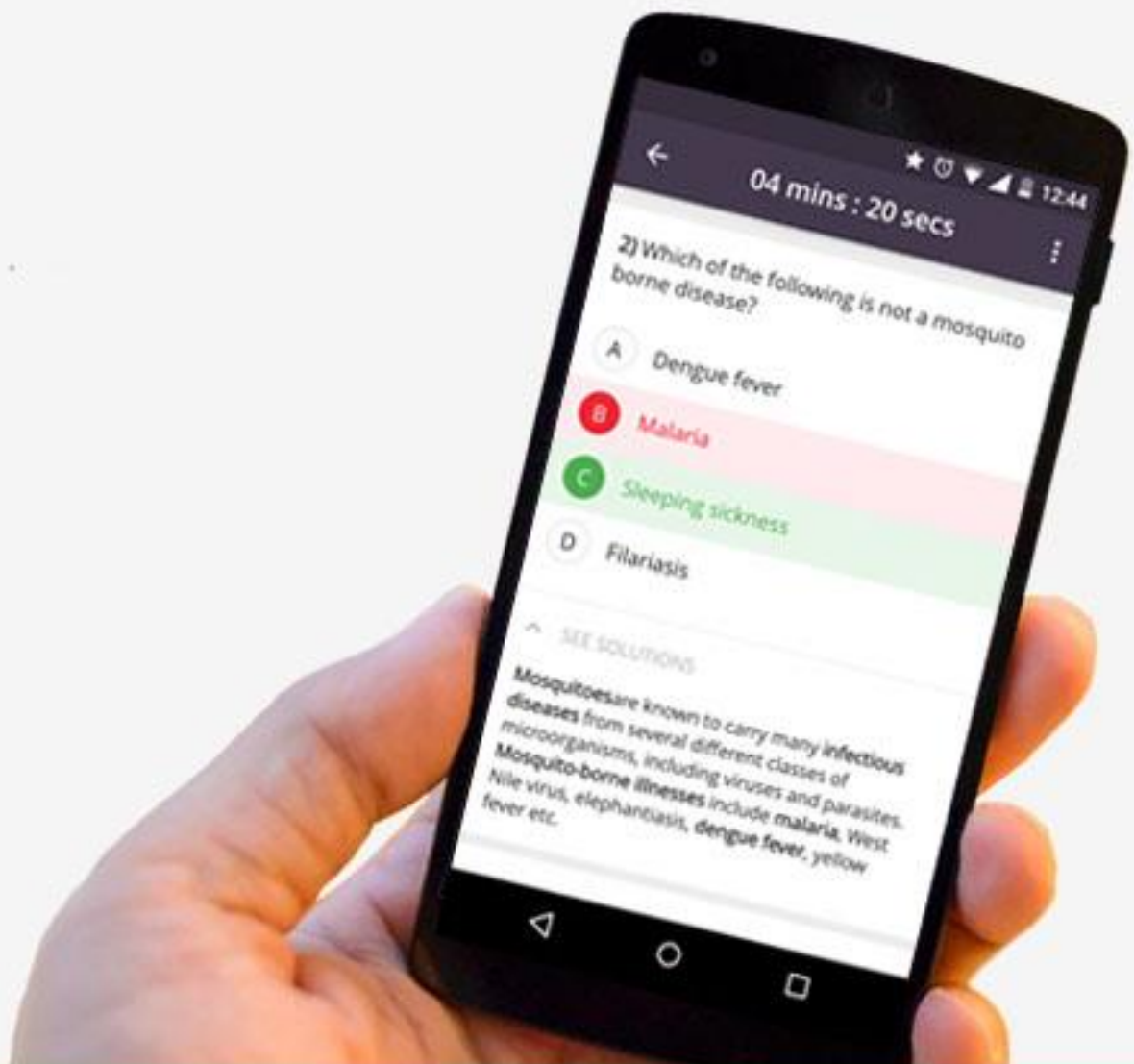


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# FREE MOCK PAPER

## for SSC CPO SI

(based on 4th June 2016 Exam)



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## Free Mock Paper for SSC CPO SI 2016 Exam

### GENERAL INTELLIGENCE AND REASONING

**Directions (1-5):** In the following questions, select the missing number/letters from the given options.

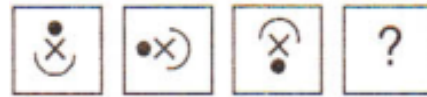
1. 5, 10, 17, 26, 37, ?  
(a) 50 (b) 48  
(c) 46 (d) 51
2. AZ, CX, EV, ?  
(a) HT (b) HU  
(c) GS (d) GT
3. C, E, H, L, ?  
(a) P (b) Q  
(c) R (d) S
4. 11, 15, 24, 40, 65, ?  
(a) 100 (b) 99  
(c) 101 (d) 102
5. C2Y, G4U, K8Q, O16M, ?  
(a) R32K (b) S32H  
(c) S32I (d) R32I

**Directions (6-12):** Select the related letters/word/number/figure from the given alternatives.

6. EJOT : VQLG :: BGLQ : ?  
(a) AEIM (b) AFKP  
(c) YTOJ (d) ZUPK
7. Command : Order :: Confusion : ?  
(a) discipline (b) Clarity  
(c) Chaos (d) Problem
8. 365 : 90 :: 326 : ?  
(a) 36 (b) 45  
(c) 123 (d) 63
9. 248 : 3 :: 328 : ?  
(a) 7 (b) 5  
(c) 4 (d) 6
10. 212 : 436 :: 560 : ?  
(a) 786 (b) 682  
(c) 784 (d) 688
11. VXZ : JLN :: GIK : ?  
(a) QSO (b) QRS  
(c) OQS (d) LMO
12. Crop : farm :: ore : ?  
(a) Iron (b) Volcano  
(c) Mine (d) Factory
13. In a certain Code 35796 is written as 44887. 46823 is written as :  
(a) 58934 (b) 65728  
(c) 55914 (d) 57934
14. In a certain code BAD is coded as 5-4-7. How would DARK be coded in that code language?  
(a) 7-4-20-13 (b) 7-4-21-14  
(c) 7-4-20-14 (d) None of these

**Direction : (15-16)** find the missing figure in given response ?

15. Question figure



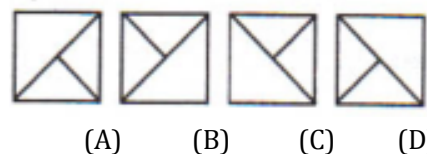
Answer figures



16. Question figure

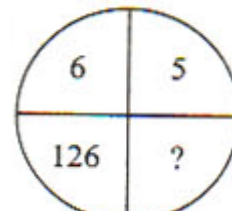


Answer figures



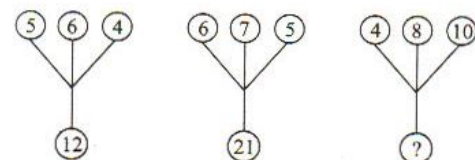
**Directions (17-18):** In each of the following questions select the missing number from the given responses.

17.



- (a) 127 (b) 31  
(c) 217 (d) 328

18.

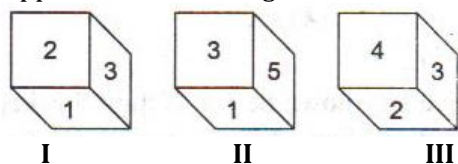


- (a) 14 (b) 22  
(c) 32 (d) 320

**Directions (19-23):** Identify the one which is different from others.

19. (a) Stable (b) Den  
(c) Haven (d) Cowshed
20. (a) Toronto (b) Colombo  
(c) Djakarta (d) Pyongyang
21. (1) TWY (b) BDF

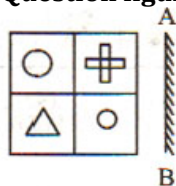
- (c) HJL (d) NPR  
 22. (a) YWUS (b) JHFD  
 (c) SQOM (d) DFHJ  
 23. (a) 440 (b) 255  
 (c) 120 (d) 226  
 24. In the below given dice which digit will be on the opposite surface to digit '3'?



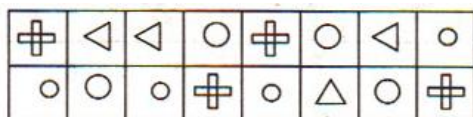
- (a) 1 (b) 6  
 (c) 4 (d) 5

**Directions (25-26) :** Which of the given answer figures will be the correct mirror reflection?

### 25. Question figures

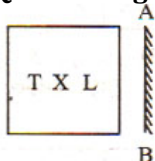


### ANSWER FIGURES

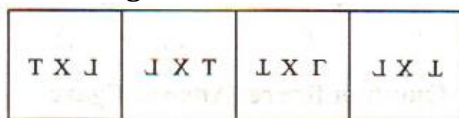


- (a) (b) (c) (d)

### 26. Question figures



### Answer Figures



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

27. If 'tree' means 'mountain'; 'mountain' means 'water'; 'water' means 'jungle'; 'jungle' means 'bus', then where do the fish live.  
 (a) water (b) jungle  
 (c) mountain (d) bus  
 28. In a certain code language 'nikka pa' means 'who are you', 'ko pa ta da' means 'you may come here', and 'ho ta sa' means 'come and go', what does 'nik' mean in that code language?

- (a) who (b) are  
 (c) who or are (d) data inadequate

**Directions (29-31):** In these questions a problem is given. Study the problem and find out the correct answer.

29. If Feb. 1, 1960 was Wednesday, What day was March 3, 1960?  
 (a) Saturday (b) Friday  
 (c) Sunday (d) Monday

30. What is that which appears twice in Wednesday, Once in Tuesday, but never in other weekdays?  
 (a) s (b) d  
 (c) n (d) e  
 31. A man is 24 years older than his son. In two years after, his age will be twice the age of his son. The present age of his son is  
 (a) 18 years (b) 14 years  
 (c) 22 years (d) 20 years  
 32. If W = 23, STRONG = 93, then WEAK =?  
 (a) 41 (b) 38  
 (c) 44 (d) 40  
 33. From the given alternatives select the word which can be formed using the letters given in the word. PRONUNCIATION  
 (a) RATION (b) NATURAL  
 (c) PRINTING (d) PUNCTUATION  
 34. From the given alternatives select the word which **cannot** be formed using the letters of the given word APPEARANCE  
 (a) REAP (b) PANE  
 (c) NEAR (d) PEAS

**Directions-(35-36)** In each of the questions below are given three statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

### 35. Statements :

All bricks are stones.  
 Some stones are rocks.  
 All rocks are mountains.

### Conclusions :

I. Some mountains are stones.  
 II. Some mountains are bricks.  
 III. Some stones are bricks.

- (a) Only I follows (b) Only III follows  
 (c) Only I and III follow (d) All follow

### 36. Statements :

Some desks are chairs.  
 Some chairs are pens.  
 Some pens are drawers.

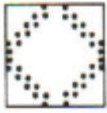
### Conclusions:

I. Some drawers are desks.  
 II. Some drawers are chairs.  
 III. No drawer is chair.

- (a) None follows (b) Only II follows  
 (c) Only III follows (d) Only either II or III follow

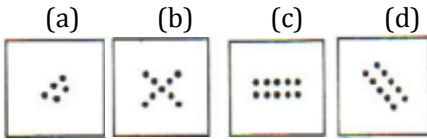
37. A sheet of paper is folded, punched and opened shows the following figure choose the answer figures which punched whole pattern gives this figures.

**Question figure:**  
**Opened pattern**



**ANSWER FIGURES**

**Punched hole pattern**



**38. Directions:** find the missing figures in the series from the given answer figure

**Question figure**



**Answer figures**



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

**Directions : (39):** From the given answer figures select the one in which the question figure is hidden/embedded.

**39. Question figure**



**Answer figures**



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

**40.** If 100 cats kill 100 mice in 100 days, then 4 cats would like 4 mice in how many days?

- (a) 1 days (b) 4 days  
(c) 40 days (d) 100 days

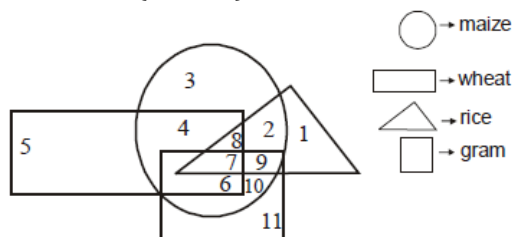
**41.** If '+' means 'divided by', '-' means 'added to', 'x' means 'subtracted from' and '÷' means 'multiplied by', then what is the value of  $24 \div 12 - 18 + 9$ ?

- (a) -25 (b) 0.72  
(c) 15.30 (d) 290

**42.** If + means  $\div$ ,  $\div$  means -, - means  $\times$ ,  $\times$  means +, then  $12 + 6 \div 3 - 2 \times 8 = ?$

- (a) -2 (b) 2  
(c) 4 (d) 8

**Direction ( 43- 45):**



**43.** Which area is cultivated by all the four commodities?

- (a) 7 (b) 8  
(c) 9 (d) 2

**44.** Which area is cultivated by wheat and maize only?

- (a) 8 (b) 6  
(c) 5 (d) 4

**45.** Which area is cultivated by rice only?

- (a) 5 (b) 1  
(c) 2 (d) 11

**Directions (46):** A word is represented by only set of numbers as given in any of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in the 2 matrices given below. The columns and rows of matrix I are numbered from 0 to 4 and that of matrix II from 5 to 9. A letter from these matrices can be column number. e.g. S can be represented by 10, 41 etc.

**46.** Similarly identify the set for the word 'PIMP'.

**Matrix -I**

	0	1	2	3	4
0	F	O	M	S	R
1	S	R	F	O	M
2	O	M	S	R	F
3	R	F	O	M	S
4	M	S	R	F	O

**Matrix -II**

	5	6	7	8	9
5	A	T	D	I	P
6	I	P	A	T	D
7	T	D	I	P	A
8	P	A	T	D	I
9	D	I	P	A	T

- (a) 66, 77, 21, 79 (b) 97, 58, 33, 98  
(c) 59, 77, 21, 85 (d) 59, 58, 33, 58

**47.** In a class of 36 Students Mohan's rank from the top is 12. Radhika ranks three places above Mohan. What is Radhika's rank from bottom?

- (a) 26 (b) 27  
(c) 28 (d) 29

**48.** Randir started walking towards South. He took a right turn after walking 10 metres. He again took a left turn after walking 20 metres. Which directions is he facing now?

- (a) South (b) North  
(c) East (d) West

**49.** Sangeeta remembers that her father's birthday was certainly after eighth but before thirteenth of December. Her sister Natasha remembers that their father's birthday was definitely after ninth but before fourteenth of December. On which date of December was their father's birthday?

- (a) 10<sup>th</sup> (b) 11<sup>th</sup>  
(c) 12<sup>th</sup> (d) Data inadequate

**50.** Pointing to Ketan, Rohul said, "He is the son of my father's only son." How is Ketan's mother related to the Rahul?

- (a) Daughter (b) Wife  
(c) Sister  
(d) Sister-in-law



## General Awareness

51. Which of the following is incorrect?
- Granite — Igneous rocks
  - Sandstone — Sedimentary rock
  - Schist — Metamorphic rock
  - Graphite — Igneous rocks
52. With reference to the right of property as a legal right (as distinct from the fundamental rights) which of the following is incorrect?
- It can be regulated without Constitutional Amendment by an ordinary law of the Parliament.
  - It protects private property against executive action but not against legislative action.
  - In case of violation, the aggrieved person can directly move to the Supreme Court for its enforcement.
  - No guaranteed right to compensation in case of acquisition or requisition of the private property by the state.
53. Which of the following is incorrect regarding the High Courts in India?
- There are eighteen High Courts in the country.
  - Three of them have jurisdiction over more than one states.
  - No Union Territory has High Court of its own.
  - Judges of the High Court hold office till the age of 62.
54. Which of the following is not a constitutional bodies?:
- Planning Commission
  - National Development Council
  - National Human Rights Commission
  - Finance Commission
55. With reference to the power of National Human Right Commission which of the following is incorrect?
- It has all the powers of a civil court
  - Its proceedings have a judicial character
  - It may call for information or report from the Central and State governments
  - It is empowered to enquire into any matter within five years of its occurrence
56. Which of the followings is incorrect with respect to the Parliamentary Control over the Budget?
- Parliament has no say in the preparation of the Budget.
  - Parliament has the power to increase expenditure charged on the Consolidated Fund of India.
  - Parliament has no power to impose a tax without the President's recommendation.
  - Parliament has no power to increase a tax without the President's recommendation.
57. Consider the following statements:
- Death Valley is famous for its dreadful aridity, which may even cause death.
  - Dead Sea is famous for its high salinity which has caused death of flora and fauna of the sea.
- Which of the statements given above is/are correct?
- Only 1
  - Only 2
  - Both 1 and 2
  - Neither 1, nor 2
58. About 50% of the world population is concentrated between the latitudes of:
- 5° N and 20° N
  - 20° N and 40° N
  - 40° N and 60° N
  - 20° S and 40° S
59. Match List I with List II and select the correct answer using the codes given below the list.
- | List I                             | List II          |
|------------------------------------|------------------|
| A. Deccan Traps                    | 1. Late cenozoic |
| B. Western Ghats                   | 2. Pre-cambrian  |
| C. Aravalli                        | 3. Cretaceous    |
| Eocene                             |                  |
| D. Narmada -Tapi alluvial deposits | 4. Cambrian      |
|                                    | 5. Pleistocene   |
- Codes:
- | A    | B | C | D |
|------|---|---|---|
| a) 3 | 5 | 1 | 4 |
| b) 3 | 1 | 2 | 5 |
| c) 2 | 1 | 3 | 4 |
| d) 1 | 4 | 2 | 5 |
60. Match List I with List II and select the correct answer using the codes given below the list.
- | List I<br>(Item in the Indian Constitution) | List II<br>(Country from which it was derived) |
|---------------------------------------------|------------------------------------------------|
|---------------------------------------------|------------------------------------------------|

- A. Directive Principle of State Policy  
B. Fundamental Rights  
C. Concurrent List in Union-State Relations  
D. India as a Union of States with greater powers to the Union
1. Australia  
2. Canada  
3. Ireland  
4. UK  
5. USA

**Codes:**

	A	B	C	D
a) 5	4	1	2	
b) 3	5	2	1	
c) 5	4	2	1	
d) 3	5	1	2	

61. Famous stupa at Sanchi is an artistic achievement of Maurya period. Which of the following statement regarding 'Sanchi Stupa' is incorrect?
- a) In every stupa, there was small chamber in which a casket with relics of Buddha or the Buddhist monks were placed.  
b) The stupa was crowned by an umbrella of stone.  
c) The monument was surrounded by a fence with a path provided for Pradakshina (circumambulation).  
d) The stupa has stone railings and gateway around it since the Maurya era.
62. Which of the following pairs are correctly matched?

Irrigation Project	State
1. Damanganga	Gujarat
2. Girna	Maharashtra
3. Pamba	Kerala

**Codes:**

- a) Only 1 and 2  
b) Only 2 and 3  
c) Only 1 and 3  
d) All 1, 2 and 3

63. Which of the following pair of elements are liquid in tropical countries but solid in Arctic and Polar countries?
- a) Cesium (Cs) and Gallium (Ga)  
b) Rubidium (Rb) and Strontium (Sr)  
c) Vanadium (V) and Niobium (Nb)  
d) Calcium (Ca) and Magnesium (Mg)
64. Which of the following elements is found naturally?
- a) Technetium (Tc)  
b) Ruthenium (Ru)  
c) Promethium (Pr)  
d) Francium (Fr)

65. According to the FAO, which country has the world's highest deforestation rate of primary forests?
- (a) Kenya  
(b) Uganda  
(c) India  
(d) Nigeria
66. Toilet cleaners clean and disinfect or kill germs in toilets. The pesticide chemicals usually found in toilet cleaners are:
- a) Formaldehyde  
b) Sodium chloride  
c) Chlorofluorocarbons  
d) Sodium hypochlorite or bleach

67. Consider the following statements:
1. Amino acids are essential for maintenance of human body.  
2. It can be synthesized by the body.
- Which of the above statements is/are correct?
- a) Only 1  
b) Only 2  
c) Both 1 and 2  
d) Neither 1, nor 2

68. Which of the following pairs are incorrectly matched?

**Waterfalls**

**Rivers**

(a) Kapildhara Falls	Godavari
(b) Jog Falls	Sharavati
(c) Sivasamudram Falls	Cauvery
(d) Hundru Falls	Subarnarekha River

69. Consider the following statements about probiotic food:
1. Probiotic food contains live bacteria which are considered beneficial to humans.  
2. Probiotic food helps in maintaining gut flora.
- Which of the statement given above is/are correct?
- a) Only 1  
b) Only 2  
c) Both 1 and 2  
d) Neither 1 nor 2
70. Which of the following countries are not a member of Asian Clearing Union (ACU)?
- (a) India  
(b) Pakistan  
(c) Iran  
(d) Iraq
71. "Aotearoa" is an alternative name for which one of the following entities?
- (a) Pitcairn Island  
(b) Fiji  
(c) Vanuatu  
(d) New Zealand
72. Most of the desert plants bloom during night time because:
- a) their blooming is controlled by low temperature  
b) they are sensitive to the phases of moon

- c) the desert insects eat away flowers during day time  
d) the desert insects are active during night time
73. Consider the following statements:  
1. Balaghat is known for its diamond mines.  
2. Majhgawan is known for its manganese deposits  
Which of the statements given above is/are correct?  
a) Only 1                                      b) Only 2  
c) Both 1 and 2                                d) Neither 1, nor 2
74. Match List I with List II and select the correct answer using the codes given below the list.
- | List I                   | List II        |
|--------------------------|----------------|
| <b>Volcanic Mountain</b> | <b>Country</b> |
| A. Mt. Rainier           | 1. Italy       |
| B. Etna                  | 2. Mexico      |
| C. Paricutin             | 3. Philippines |
| D. Taal                  | 4. USA         |
- Codes:**
- | A    | B | C | D |
|------|---|---|---|
| a) 4 | 2 | 1 | 3 |
| b) 4 | 1 | 2 | 3 |
| c) 2 | 1 | 4 | 3 |
| d) 4 | 3 | 2 | 1 |
75. Which of the following countries is a member(s) of E-8 (Elephant Range Countries)?  
(a) Botswana  
(b) Congo  
(c) Malaysia  
(d) Indonesia
76. Which of the followings is not essentially a species of the Himalayan vegetation?  
a) Juniper                                      b) Mahogany  
c) Silver fir                                    d) Spruce
77. Which of the following is the biggest source of greenhouse gases, accounting for the more than three-quarters of all emissions from global livestock?  
(a) Pig                                              (b) Cattle  
(c) Poultry                                        (d) Small ruminants
78. How do most insects respire?  
a) through skin                                b) through gills  
c) by lungs                                        d) by tracheal system
79. The concept of carbon credit originated from which one of the followings?  
a) Earth Summit, Rio de Janeiro
- b) Kyoto Protocol  
c) Montreal Protocol  
d) G-8 Summit, Heiligendamm
80. The image of Nataraja (the lord of dance) is a superb masterpiece and its charm has impressed connoisseurs throughout the world. It is one of the significant contributions to Indian art by which of the following:  
a) Cholas                                        b) Pratiharas  
c) Rashtrakutas                                d) Mauryas
81. With reference to Indian freedom struggle, who gave the call - 'one religion, one caste and one god for mankind.'  
a) SidharthaAyyapan                        b) Narayan Guru  
c) Mahatma Gandhi                         d) JyotibhaPhule
82. With reference to Indian freedom struggle, Surya Sen is well known for –  
a) his active participation in non-cooperation movement.  
b) he wrote the book 'BandiJiwan'  
c) Playing an active role in Quit India movement  
d) None of the above
83. Consider the following statements:  
1. Robert Clive was the first Governor-General of Bengal.  
2. William Bentick was the first Governor-General of India.  
Which of the statements given above is/are correct?  
a) Only 1                                        b) Only 2  
c) Both 1 and 2                                d) Neither 1, nor 2
84. Pran Chopra, who passed away recently, was a \_\_\_\_?  
(a) Journalist                                    (b) Photographer  
(c) Author                                        (d) Sports man
85. Which of the following statements with reference to Service Tax is correct:  
(a) It is a direct tax levied by the Central Government.  
(b) It is an indirect tax levied by the Central Government.  
(c) It is an indirect tax levied by the State Government.  
(d) It is a direct tax levied by the State Government.
86. An antibiotic is  
(a) a chemical synthesized by a human cell against a microorganism

- (b) a chemical synthesised by a micro-organism against another micro-organisms  
(c) a substance produced by blood cells against bacteria  
(d) a substance produced by blood cells against infection.
87. Which one of the following can be synthesized by Liver?  
(a) Vitamin-A (b) Vitamin -E  
(c) Vitamin-D (d) Vitamin-K
88. Fluid part of blood devoid of corpuscles is called  
(a) Tissue fluid (b) Plasma  
(c) Seaim (d) Lymph
89. Which of the following books is written by A. P.J. Abdul Kalam ?  
(a) Developing India  
(b) Science is Today's India  
(c) Defence set up in India  
(d) Guiding Soul
90. Heart murmur indicates a  
(a) defective valve  
(b) poor oxygenation  
(c) dislocation of the heart  
(d) improper development of muscles
91. The language used in writing the scientific name of animals is  
(a) French (b) Latin  
(c) German (d) Dutch
92. Which of the following animals does not have nervous system?  
(a) Leech (b) Tapeworm  
(c) Amoeba (d) Snail
93. Energy of Ultraviolet rays is great than  
(a) Infra-red rays (b) Gamma rays  
(c) X-rays (d) Cosmic rays
94. Which of the following are not grown in the Kharif season?  
(a) Bajra and rice (b) Maize and jowar  
(c) Barley and mustard (d) Jowar and rice
95. In India, rain forests are found in  
(a) Central India  
(b) Eastern Ghat  
(c) N. E. Himalayas and Western Ghats  
(d) N.W. Himalayas and Eastern Ghats
96. Who among the following has won 34th National Archery Championship?  
(a) Dola Banerjee (b) DeepikaKumari  
(c) Bombayla Devi (d) AnithaKumari
97. By-product obtained by soap-industry is  
(a) Caustic soda (b) Glycerol  
(c) Naphthalene (d) Caustic potash
98. The union government has recently cleared a proposal for setting up of National Cancer Institute. The proposed institute would be set up in\_\_?  
(a) Punjab (b) Haryana  
(c) New Delhi (d) Himachal Pradesh
99. Which one of the following is pure water ?  
(a) Rain water (b) Filter water  
(c) Tubewell water (d) Distilled water
100. Which silver salt is used for making film for photography ?  
(a) Silver bromide (b) Silver chloride  
(c) Silver sulphate (d) Silver nitrate

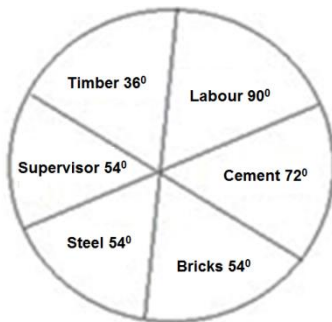
### Quantitative Aptitude

101. A sum of money amounts to Rs.9800 after 5 years and Rs.12005 after 8 years at the same rate of simple interest. The rate of interest per annum is  
(a) 10 % (b) 12 %  
(c) 8 % (d) 5.5 %
102. When two trains were running in the same direction at 90 km/hr and 70 km/hr respectively, then the faster train passed a man sitting in the slower train in 36 seconds.  
Find the length of the faster train.  
(a) 10 metres (b) 150 metres  
(c) 190 metres (d) 200 metres
103. In a company, there are 75% skilled workers and remaining ones are unskilled. 80% of skilled workers and 20% of unskilled workers are permanent. If number of temporary workers is 126, then what is the number of total workers?  
(a) 480 (b) 510  
(c) 360 (d) 377
104. Evaluate  $\sqrt{20} + \sqrt{12} + \sqrt[3]{729} - \frac{4}{\sqrt{5}-\sqrt{3}} - \sqrt{81}$



- (a)  $\sqrt{2}$  (b)  $\sqrt{3}$   
(c) 0 (d)  $2\sqrt{2}$
- 105.** The selling price of an article is Rs 1920 and the discount given is 4%. The marked price of the article is :  
(a) Rs. 2400 (b) Rs. 2000  
(c) Rs. 1600 (d) Rs. 1200
- 106.** Two numbers 11284 and 7655, when divide by a certain number of three digits, leaves the same remainder. The sum of digits of such three – digit number is  
(a) 11 (b) 8  
(c) 9 (d) 10
- 107.** A 280 – meter – long train moving with an average speed of 108 km/h crosses a platform in 12 seconds. A man crosses the same platform in 10 seconds. What is the speed of the man?  
(a) 5 m/s (b) 8 m/s  
(c) 12 m/s  
(d) cannot be determined
- 108.** The curved surface of a cylindrical pillar is 264  $m^2$  and its volume is 924  $m^3$ . The ratio of its diameter to its height is  
(a) 7 : 6 (b) 6 : 7  
(c) 3 : 7 (d) 7 : 3

**Directions (109-113):** The pie-graph given below shows the breakup of the cost of construction of a house. If the total cost of construction is Rs 15, 00,000, answer the questions given below:



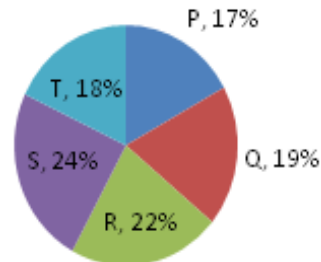
- 109.** The amount spent on labour is (in Rs):  
(a) 90,000 (b) 2, 50,000  
(c) 3,60,000 (d) 3,75,000
- 110.** The amount spent on bricks, steel and cement is what percentage of the total cost of construction?  
(a) 50% (b) 54%  
(c) 72% (d) 75%
- 111.** The amount spent on timber is what percent of the amount spent on cement?  
(a) 36% (b) 50%  
(c) 72% (d) 18%

- 112.** Out of total cost of construction what amount (in Rs) has been spent on labour and supervision?  
(a) 1, 44,000 (b) 3,00,000  
(c) 6, 00,000 (d) 7,50,000
- 113.** What is the difference between the percentage of the cost spent on supervision & bricks together and that of cost spent on Labour?  
(a) 10% (b) 5%  
(c) 7.2% (d) 8%

- 114.** If  $x + \frac{1}{x} = 3$ , then the value of  $\frac{x^3 + \frac{1}{x}}{x^2 - x + 1}$  is  
(a)  $\frac{3}{2}$  (b)  $\frac{5}{2}$   
(c)  $\frac{7}{2}$  (d)  $\frac{11}{2}$

**Directions (115-119):** Study the following graph carefully to answer these questions.

Distribution of Number of passengers in various trains.



Total passenger = 2.5 lakhs

Train-wise percentage and ratio of male and female passengers going to Delhi.

Train	% passenger who're going to Delhi	Male: Female
P	23	4:5
Q	64	3:5
R	59	6:7
S	83	2:5
T	44	4:9

- 115.** Which of the following train has highest number of male passenger going to Delhi? (rounded figure)  
(a) P (b) S  
(c) R (d) Q
- 116.** What is the number of male passenger from train R going to Delhi?  
(a) 14977 (b) 15020

- (c) 15300 (d) 14677
117. What is the approximate percentage of passenger going to Delhi in train R with respect to the total passenger of train P and T together?  
 (a) 48 (b) 41  
 (c) 26 (d) None of these
118. What is the difference between the number of male passenger of train S and female passenger of train R?  
 (a) 12343 (b) 12786  
 (c) 13254 (d) None of these
119. What is the total number of passenger who's going to Delhi by train Q, R, and T together?  
 (a) 35650 (b) 28650  
 (c) 82650 (d) 85650
120. A cistern has 3 pipes A, B and C. A and B can fill it in 3 and 4 hours respectively, and C can empty it in 1 hour. If the pipes are opened at 5 p. m., 6 p. m. and 7 p. m. respectively on the same day, the cistern will be emptied at  
 (a) 9:12pm (b) 9:15pm  
 (c) 9:10pm (d) 9:18pm
121. If a chord of a circle of radius 5 cm is a tangent to a circle of radius 3 cm, both the circles being concentric, then the length of the chord is:  
 (a) 10 cm (b) 12.5 cm  
 (c) 8 cm (d) 7 cm
122. The length of the diagonal BD of the parallelogram ABCD is 18cm. If P and Q are the centroid of the triangle ABC and triangle ADC respectively then the length of the line segment PQ is  
 (a) 4 cm (b) 6 cm  
 (c) 9 cm (d) 12 cm
123. ABCD is a rhombus whose side AB = 4cm and  $\angle ABC = 120^\circ$ , then the length of diagonal BD is equal to:  
 (a) 1 cm (b) 2 cm  
 (c) 3 cm (d) 4 cm
124. The minimum values of  $2\sin^2\theta + 3\cos^2\theta$  is :  
 (a) 0 (b) 3  
 (c) 2 (d) 1
125. If  $\theta$  lies in the second quadrant, then  $\sqrt{\frac{1-\sin\theta}{1+\sin\theta}}$  +  $\sqrt{\frac{1+\sin\theta}{1-\sin\theta}}$  is equal to  
 (a)  $-2 \sec\theta$  (b)  $2 \sec\theta$   
 (c)  $2 \operatorname{cosec}\theta$  (d)  $2 \tan\theta$
126. The average daily wages of A, B and C is Rs. 120. If B earns Rs. 40 more than C per day and A earns double of what C earns per day, the wages of A per day is  
 (a) Rs.80 (b) Rs.120  
 (c) Rs.160 (d) Rs.100
127. The average age of students of a class is 15.8 years. The average age of boys in the class is 16.4 years and that of the girls is 15.4 years. The ratio of number of boys to the number of girls in the class is  
 (a) 1 : 2 (b) 3 : 4  
 (c) 3 : 5 (d) 2 : 3
128. There is a sequence of 11 consecutive odd numbers. If the average of first 7 numbers is X, then find the average of all the 11 integers.  
 (a)  $X + 3$  (b)  $X + 4$   
 (c)  $X + 5$  (d)  $X + 7$
129. Father is aged three times more than his son Ronit. After 8 years, he would be two and a half times of Ronit's age. After further 8 years, how many times would he be of Ronit's age?  
 (a) 2 years (b)  $2 \frac{1}{2}$  years  
 (c)  $2 \frac{3}{4}$  years (d) 3 years
130. A sum of money was borrowed and paid back in two equal annual installments of Rs. 882 allowing 5% compound interest per annum. The sum borrowed was—  
 (a) Rs. 1600 (b) Rs. 1620  
 (c) Rs. 1640 (d) Rs. 1700
131. A man can row 30 km downstream and return in a total of 8 hours. If the speed of the boat in still water is four times the speed of the current, then the speed of the current is  
 (a) 1 km/hr (b) 2 km/hr  
 (c) 4 km/hr (d) 3 km/hr
132. The cost of carpeting a room 18 m long with a carpet 75 cm wide at 45 paise per metre is Rs.81. Find the breadth of the room.  
 (a) 4 m. (b) 6 m.  
 (c) 8m. (d) 7.5m.
133. The areas of two similar triangles are in ratio 16:25. Find the ratio of lengths of their altitudes.  
 (a) 16:25 (b) 25:16  
 (c) 4:5 (d) 5:4
134. In a triangle ABC. If  $\angle ADE = \angle B$ . AD=3.8 cm, AE=3.6 cm, BE =2.1 cm and BC=4.2 cm. find DE.  
 (a) 4.5 cm (b) 2.8 cm  
 (c) 1.5 cm (d) 2.5 cm
135. A jar contains a mixture of 2 liquids A and B in the ratio 4:1. When 10litres of the mixture is taken out and 10 litres of liquid B is poured into

- the jar, the ratio becomes 2:3. How many litres of the liquid A was contained in the jar?
- (a) 17 litres (b) 16 litres  
(c) 18 litres (d) 15 litres
136. Three times a number is 20% more than twice another number when increased by 105. If twice the first number increased by 36 is 20% less than three times of the second number, then what is the first number?
- (a) 150 (b) 162  
(c) 180 (d) None of these
137. By selling 100 orange, a vendor gains the selling price of 20 oranges. His gain percentage is
- (a) 20% (b) 25%  
(c) 30% (d) 32%
138. If  $x + y + z = 0$ , then what is  $\frac{xyz}{(x+y)(y+z)(z+x)}$  equal to ?  
[ $x \neq -y, y \neq -z, z \neq -x$ ]
- (a) -1 (b) 1  
(c)  $xy + yz + zx$  (d) none of these
139. If  $x = 99$ , values of  $x(x^2 + 3x + 3)$  is
- (a) 1000001 (b) 99999  
(c) 999999 (d) 9999999
140. If  $\frac{1}{x+y} = \frac{1}{x} + \frac{1}{y}$  ( $x \neq 0, y \neq 0, z \neq 0$ ) then the values of  $x^3 - y^3$  is
- (a) 0 (b) 1  
(c) -1 (d) 2
141. If  $2(\cos^2\theta - \sin^2\theta) = 1$  and  $\theta$  is a positive angle, then the values of  $\theta$  is :
- (a)  $45^\circ$  (b)  $22\frac{1}{2}^\circ$   
(c)  $60^\circ$  (d)  $30^\circ$
142. Each angle of a regular polygon is  $135^\circ$ . find the number of sides of polygon.
- (a) 4 (b) 6  
(c) 8 (d) 10
143. A drum of kerosene is  $\frac{3}{4}$  full. When 30 liters of kerosene is drawn from it, it remains  $\frac{7}{12}$  full. The capacity of the drum is
- (a) 120L (b) 135L  
(c) 150L (d) 180L
144. Two iron shots each of diameter 6 cm are immersed in the water contained in a cylindrical vessel of radius 6 cm. The level of the water in the vessel will be raised by
- (a) 1 cm (b) 2 cm  
(c) 3 cm (d) 6 cm
145. If the length of a rectangular plot of land is increased by 5% and the breadth decreased by 10% by how much will its area change?
- (a) increase by 5.5% (b) decrease by 5.5%  
(c) decrease by 0.55% (d) No change
146. A sum of money was lent at simple interest at a certain rate for 3 years. Had it been lent at 2.5% per annum higher rate, it would have fetched Rs. 540 more. The money lent was:
- (a) Rs. 6400 (b) Rs. 6472  
(c) Rs. 6840 (d) Rs. 7200
147. What number should be added to each of 6, 14, 18 and 38 so that the resulting numbers make a proportion?
- (a) 1 (b) 2  
(c) 3 (d) 4
148.  $\frac{0.08 \times 0.08 \times 0.08 + 0.02 \times 0.02 \times 0.02}{0.08 \times 0.08 - 0.0016 + 0.02 \times 0.02}$  is simplified to :
- (a) 0.001 (b) 0.1  
(c) 0.0016 (d) 0.016
149. If  $x = \sqrt{3} + \sqrt{2}$ , then the value of  $x^2 + \frac{1}{x^2}$  is:
- (a) 4 (b) 6  
(c) 9 (d) 10
150. The ratio of the number of boys and girls in a school 3 : 2. If 20% of the boys and 25% of the girls are scholarship holders, then the percentage of the students, who do not get the scholarships, is:
- (a) 78 (b) 75  
(c) 60 (d) 55

### English Language

**Directions(151):** In the following question, four alternatives are given for the idiom/ phrase in **bold** in the sentence. Choose the alternative which best expresses the meaning of the idiom/ phrase.

151. She is a **fair-weather friend**.  
(a) a good friend

- (b) a friend who meets difficulties calmly  
(c) one who deserts you in difficulties  
(d) a favourable friend

**Directions (152):** In the following question, groups of four words are given. In each group, one word is correctly spelt. Find the correctly spelt word.

152. (a) excution (b) excitment

**Directions (153):** In the following question, out of the four alternatives, choose the one which can be substituted for the given words/ sentence.

**Directions (154):** In the following question, four alternatives are given for the idiom/ phrase in **bold**

154. To **die in harness** means to die while  
 (a) riding a horse (b) in a stable  
 (c) in a uniform (d) still in service

**Directions (155):** In the following question, groups of four words are given. In each group, one word is correctly spelt. Find the correctly spelt word.

155. (a) exact (b) impact  
 (c) exite (d) impect

**Directions (156- 157):** In the following question, out of the four alternatives, choose the one which can be substituted for the given words/ sentence.

158. To **keep under wraps** means to keep something  
 (a) covered (b) protected  
 (c) unpacked (d) secret

**Directions (159-160):** In the following question, out of the four alternatives, choose the one which can be substituted for the given words/ sentence.

159. A raised place on which offerings to a god are made  
 (a) Mound (b) Chapel  
 (c) Altar (d) Archives  
 160. Constant effort to achieve something  
 (a) Perseverance (b) Attempt  
 (c) Enthusiasm (d) Vigor

**Directions (161-162):** In the following question, four alternatives are given for the idiom/ phrase in **bold** in the sentence. Choose the alternative which best expresses the meaning of the idiom/ phrase.

161. His miseries are not the spell of God, but he has been actually **hoisted with his own petard**.  
 (a) to act recklessly  
 (b) to have a permanent effect  
 (c) to show maturity in doing anything  
 (d) to be harmed by ones' own action  
 162. If you have given me a back dated cheque, I would have rejected and **made a hash of the same**.  
 (a) to dismiss one peremptorily  
 (b) to go mad  
 (c) not to make any effort to help others  
 (d) to do something so badly that it is spoilt completely

**Directions (163-172):** In the following questions, you have passage. In this passage, some of the words

- (c) expedition (d) extrection

153. The worship of idols or images.

- (a) Atheism (b) Theism  
 (c) Idolatry (d) Iconoclasm

in the sentence. Choose the alternative which best expresses the meaning of the idiom/ phrase.

156. A hater of mankind.  
 (a) Misanthrope (b) Misogynist  
 (c) Philanthropist (d) Misogamist  
 157. A Short stay at a place  
 (a) Halt (b) Interlude  
 (c) Intermission (d) Sojourn

**Directions (158):** In the following question, four alternatives are given for the idiom/ phrase in **bold** in the sentence. Choose the alternative which best expresses the meaning of the idiom/ phrase.

have been left out. First read the passage over and try to understand what it is about. Then fill in the blanks with the help of the alternatives given.

Bhola was a (163) man but he was neither greedy nor dishonest. He (164) satisfied (165) what he earned daily. He (166) many problems but he never sighed (167) he would thank God for giving him (168) to meet all challenges. Once he became ill (169) fever and had no (170) for treatment. In the mean time a friend of his own came to see him and (171) him some money but Bhola (172) to take it saying that he did not honor stolen money.

163. (a) wise (b) clever  
 (c) honest (d) poor  
 164. (a) became (b) feel  
 (c) remained (d) hoped  
 165. (a) at (b) with  
 (c) from (d) in  
 166. (a) solved (b) met  
 (c) faced (b) suffered  
 167. (a) on the contrary (b) besides  
 (c) instead (b) despite  
 168. (a) power (b) ability  
 (c) courage (d) thought  
 169. (a) from (b) with  
 (c) at (d) in  
 170. (a) intention (b) hope  
 (c) money (d) energy  
 171. (a) gave (b) offered  
 (c) lent (d)  
 borrowed  
 172. (a) deny (b) accepted  
 (c) rejected (d) refused

**Directions (173-177):** In the following questions, sentences are given with blanks to be filled in with

appropriate word (s). Four alternatives are suggested for each question. Choose the correct alternative out of the four.

173. The little girl was knocked down by a speeding car and she lost her \_\_\_\_\_ immediately  
 (a) conscience (b) conscientious  
 (c) conscious (d) consciousness
174. They have had to put \_\_\_\_\_ the football match because of snow  
 (a) of (b) off  
 (c) up (d) on

**Directions (178-182):** In the following questions, you have five brief passages with 5 questions following each passage. Read the passages carefully and choose the best answer to each question out of the four alternatives.

A hybrid vehicle is a vehicle which uses two or more kinds of propulsion. Most hybrid vehicles use a conventional gasoline engine as well as an electric motor to provide power to the vehicle. These are usually called hybrid-electric-vehicles, or HEVs. Hybrids use two types of propulsion in order to use gasoline more efficiently than conventional vehicles do. Most hybrid vehicles use the gasoline engine as a generator which sends power to the electric motor. The electric motor then powers the car. In conventional vehicles, the gasoline engine powers the vehicle directly. Since the main purpose of using a hybrid system is to efficiently use resources, most hybrid vehicles also use other efficient systems. Most hybrid vehicles have regenerative braking systems. In conventional vehicles, the gasoline engine powers the brake, and the energy used in braking is lost. In regenerative braking system, the energy lost in braking is sent back into the electrical battery for use in powering the vehicle. Some hybrid vehicles use periodic engine shutoff as a gas-saving feature. When the vehicle is in idle, the engine temporarily turns off. When the vehicle is put back in gear, the engine comes back on. Some hybrids use tires made of a stiff material which rolls easily and prevents drag on the vehicle. Since hybrid vehicles use less gasoline than conventional vehicles, they put fewer emissions into the atmosphere than conventional vehicles do. As hybrids become more popular, conventional vehicles are being used less, and the level of emissions being put into the air is decreasing. Hybrid vehicles are an example of an energy efficient technology that is good for both consumers and the environment.

**Directions (183):** In the following question, out of the four alternatives, choose the one which best expresses the same meaning of the given word.

175. She found a few good cards in a shop and she bought \_\_\_\_\_ cards last night  
 (a) those (b) that  
 (c) them (d) this
176. Ten miles \_\_\_\_\_ a long way to walk  
 (a) are (b) is  
 (c) are being (d) are not
177. The mechanic \_\_\_\_\_ the vehicle since this morning.  
 (a) repaired (b) repairing  
 (c) has been repairing (d) will be repairing
178. Two kinds of propelling forces used by hybrid vehicles are  
 (a) elective motor and power  
 (b) electric engine and generator  
 (c) gasoline engine and electric motor  
 (d) electrical battery and gasoline
179. The difference between hybrid and conventional vehicle is that  
 (a) Hybrids are heavier as compared to conventional ones.  
 (b) Hybrids do not use electric motors while conventional ones do.  
 (c) Hybrids use gas while conventional vehicles use petrol.  
 (d) Hybrids use two types of propulsions while conventional rely on one.
180. Why do HEVs use two types of propulsions?  
 (a) To go faster.  
 (b) To use gasoline efficiently.  
 (c) To provide a comfortable ride.  
 (d) To become environmental friendly.
181. 'Regenerative' most closely means;  
 (a) Restorative (b) Electric  
 (c) Gasoline (d) Powerful
182. In the context of the passage which of the following best articulates how the author regards the topic?  
 (a) Conventional vehicles may be more powerful than hybrid vehicles but hybrid vehicles are more socially responsible.  
 (b) Since hybrid vehicles use less gasoline and put fewer emissions into the atmosphere, they are better for the environment.  
 (c) Hybrid vehicles are less expensive, so they are a smarter buy than conventional vehicles.  
 (d) Conventional vehicles are faster but hybrid vehicles are better for the environment.
183. **ACCEDE**  
 (a) consent (b) access  
 (c) assess (d) proceed



**Directions (184):** In the following question, choose the word opposite in meaning to the given word.

**184. ENIGMATIC**

- |            |              |
|------------|--------------|
| (a) simple | (b) reticent |
| (c) plain  | (d) nervous  |

**Directions (185):** In the following question, out of the four alternatives, choose the one which best expresses the same meaning of the given word.

**Directions (187-188):** In the following questions, out of the four alternatives, choose the one which best expresses the same meaning of the given word.

**187. TRANSITION**

**Directions (189-190):** In the following question, choose the word opposite in meaning to the given word.

**189. HEINOUS**

- |                |                |
|----------------|----------------|
| (a) attractive | (b) beneficial |
| (c) gracious   | (d) amicable   |

**Directions (191):** In the following question, some are correct. Find out which part of a sentence has an error and the number of that part is your answer. If a sentence is free from errors, your answer is (d) i.e. No error

- 191.** In the background they could hear John laughing and joking loudly. (a) / John was the life and soul of any party (b) / and he was cracking a joke every few minutes. (c) / No error (d)

**Directions (192) :** In the following question, a part of the sentence is in **bold**. Below are given alternatives to the **bold** part at (a), (b) and (c) which may improve the sentence Choose the correct alternative. Incase no improvement is needed, your answer is (d).

- 192.** I bought four **dozen of mangoes**.  
(a) dozens of mango  
(b) dozens of mangoes  
(c) dozens mangoes  
(d) No improvement

**Directions (193):** In the following question, some are correct. Find out which part of a sentence has an error and the number of that part is your answer. If a sentence is free from errors, your answer is (d) i.e. No error

- 193.** I was thinking (a) / if I could do (b) / anything to help (c) / No error (d)

**Directions:(194)** In the following question, a part of the sentence is in **bold**. Below are given alternatives to the **bold** part at (a), (b) and (c) which may

**185. SUPERANNUATED**

- |                 |              |
|-----------------|--------------|
| (a) experienced | (b) accepted |
| (c) retired     | (d) senile   |

**Directions (186):** In the following question, choose the word opposite in meaning to the given word.

**186. PLENTIFUL**

- |              |                 |
|--------------|-----------------|
| (a) short    | (b) limited     |
| (c) petty    | (d) meager      |
| (a) position | (b) translation |
| (c) change   | (d) movement    |

**188. ACCUSED**

- |               |                |
|---------------|----------------|
| (a) indicated | (b) indicted   |
| (c) induced   | (d) instigated |

**190. DESPISE**

- |             |                |
|-------------|----------------|
| (a) appease | (b) flatter    |
| (c) admire  | (d) appreciate |

improve the sentence Choose the correct alternative. Incase no improvement is needed, your answer is (d).

- 194.** The master was good at using **pleasant names for unpleasant things** in order to hoodwink the labourers.  
(a) euphemisms  
(b) euphoria  
(c) pleasantries  
(d) No improvement

**Directions (195):** In the following question, some are correct. Find out which part of a sentence has an error and the number of that part is your answer. If a sentence is free from errors, your answer is (d) i.e. No error

- 195.** I mean nothing (a) / less than (b) / to compel you to come (c) No error (d)

**Directions: (196)** In the following question, a part of the sentence is in **bold**. Below are given alternatives to the **bold** part at (a), (b) and (c) which may improve the sentence Choose the correct alternative. Incase no improvement is needed, your answer is (d).

- 196.** They had to **put off until later** the open – air performance because of heavy rain.  
(a) postpone  
(b) delay  
(c) adjourn  
(d) No improvement

**Directions (197):** In the following question, some are correct. Find out which part of a sentence has an

error and the number of that part is your answer. If a sentence is free from errors, your answer is (d) i.e.

197. Females (a) / are not appointed (b) / in our college. (c) / No error (d)

**Directions: (198)** In the following question, a part of the sentence is in **bold**. Below are given alternatives to the **bold** part at (a), (b) and (c) which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is (d).

198. Dozens of phrases can be offered to describe style **but perhaps the best one is : " Style – it is the man.**
- (a) but the best one is : "Style – it is the man."
  - (b) but perhaps the best one is : "Style is the man."
  - (c) but the best one is : "Style is the man."
  - (d) No improvement

No error

**Directions (199):** In the following question, some are correct. Find out which part of a sentence has an error and the number of that part is your answer. If a sentence is free from errors, your answer is (d) i.e. No error

199. He has read four plays (a) / written by Shakespeare (b) / by the end of his vacation. (c) / No error (d)

**Directions: (200)** In the following question, a part of the sentence is in **bold**. Below are given alternatives to the **bold** part at (a), (b) and (c) which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is (d).

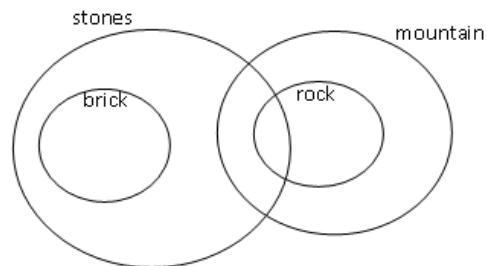
200. They have bought a new car, **isn't it?**
- (a) haven't they ?
  - (b) don't they?
  - (c) have they?
  - (d) No improvement

## Solutions for Free Mock Paper for SSC CPO SI 2016 Exam

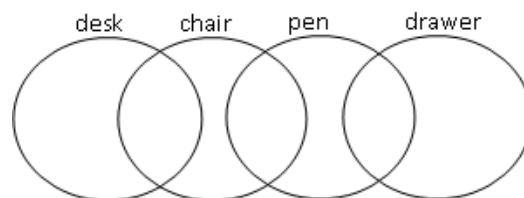
1. (a) Between the consecutive terms, there is gap of 5, 7, 9, 11, and so on.
2. (d) In the given groups, the letters are equidistant when counted from either side of the alphabetical series.
3. (b) There is a gap of 1, 2, 3, 4 and so on letters between consecutive letters.
4. (c) The gap between the consecutive numbers is 4, 9, 16, 25, and so on.
5. (c)
6. (c)
7. (c): The words in each pair are synonyms of each other.
8. (a) ;  $3 \times 6 \times 5 = 90$   
Similarly ,  $6 \times 2 \times 3 = 36$
9. (c)  $24/8 = 3, 32/8 = 4$
10. (c)  $212 + 224 = 436, 560 + 224 = 784$
11. (c)  $V \xrightarrow{+2} X \xrightarrow{+2} Z$   
 $J \xrightarrow{+2} L \xrightarrow{+2} N$   
 $G \xrightarrow{+2} I \xrightarrow{+2} K$   
Similarly  
 $O \xrightarrow{+2} Q \xrightarrow{+2} S$
12. (c)
13. (c) :  $4 + 1 = 5 \rightarrow 6 - 1 = 5 \rightarrow 8 + 1 = 9 \rightarrow 2 - 1 = 1 \rightarrow 3 + 1 = 4$
14. (b) :  $D (4) + 3 = 7 \rightarrow A (1) + 3 = 4 \rightarrow R (18) + 3 = 21, K (11) + 3 = (N) 14$
15. (B)
16. (B)
17. (d)
18. (c) : Calculating diagonally;  $5^3 + 1 = 126$   
Similarly,  $6^3 + 1 = 217$
19. (c) All except haven are the habitats of animals, while haven is the safe place generally for criminals.
20. (a) Toronto is a famous city of Canada while the others are the capital cities.
21. (a)
22. (d) In Option (d) the letters are given in increasing order but in all others, the letters are in reverse order.
23. (d)  $(21)^2 - 1 = 441 - 1 = 440$   
 $(16)^2 - 1 = 256 - 1 = 255$   
 $(11)^2 - 1 = 121 - 1 = 120$   
But,  
 $(15)^2 + 1 = 225 + 1 = 226$
24. (b) : In the first and second dice, two surfaces are similar, hence as per rule 2, 2 will be on the surface opposite to 5 and according to same rule

from first and third dices , 4 will be opposite to 1 so, the remaining number 6 will be opposite to 3.

25. (c)
26. (b)
27. (c)
28. (c) nikka Pa - Who are you  
ko Pa tada - You may come here  
ho ta sa - Come and go  
nik - who or are
29. (a) 1960  $\rightarrow$  leap year.  
So, February will be of 29 days. Hence, Wednesday will be on 29 Feb. and Saturday will be on 3 March.
30. (d)
31. (c) Let the son's present age be x years. Then, man's present age =  $(x + 24)$  years.  
 $\therefore (x + 24) + 2 = 2(x + 2)$   
 $\Rightarrow x + 26 = 2x + 4$   
 $\Rightarrow x = 22.$
32. (d) :  $W = 23,$   
 $STRONG \rightarrow 19 + 20 + 18 + 15 + 14 + 7 = 93$   
 $WEAK \rightarrow 23 + 5 + 1 + 11 = 40$
33. (a) RATION
34. (d) PEAS
35. (c)



36. (d)



37. (D)
38. (B)
39. (c)
40. (d): Less cats, more days  
Less mice, less days  
Let the required number of days be X.  

Cat	4	:	100	}	$\therefore x : 100$
Mice	100	:	4		

$$100 \times 4 \times X = 4 \times 100 \times 100 \text{ or } X = \left( \frac{4 \times 100 \times 100}{100 \times 4} \right) = 100.$$

41. (d): Using the correct symbols, we have:

$$\text{Given expression} = 24 \times 12 + 18 \div 9 = 288 + 2 = 290$$

42. (c): Using the correct symbols, we have:

$$\text{Given expression:} = 12 \div 6 - 3 \times 2 + 8 = 2 - 6 + 8 = 10 - 6 = 4.$$

43. (a)

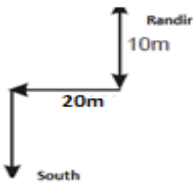
44. (d)

45. (b)

46. (c)

47. (c)

48. (a)



49. (D) : According to Sangeeta, the father's birthday falls on one of the days among 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> December. According to Natasha, the father's birthday falls on one of the days among 10<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> December.

50. (B)

51. D

52. C

53. D

54. D

55. D

56. B

57. C

58. B

59. B

60. D

61. D

62. D

63. A

64. B

65. D

66. D

67. A

68. A

69. C

70. D

71. D

72. D

73. D

74. B

75. C

76. B

77. B

78. D

79. B

80. A

81. B

82. A

83. B

84. A

85. B

86. B

87. D

88. B

89. D

90. A

91. B

92. C

93. B

94. C

95. C

96. B

97. B

98. B

99. A

100. A

101. (B) :

$$\text{Simple Interest for 3 years} = (\text{Rs.}12005 - \text{Rs.}9800) = \text{Rs.}2205$$

$$\text{Simple Interest for 5 years} = (2205/3) \times 5 = \text{Rs.}3675$$

$$\text{Principal (P)} = (\text{Rs.}9800 - \text{Rs.}3675) = \text{Rs.}6125$$

$$R = (100 \times \text{SI}) / \text{PT} = (100 \times 3675) / (6125 \times 5) = 12\%$$

102. (D): 20 km/hr  $\rightarrow$  20000 m/3600 seconds

$$200 \text{ metres} / 36 \text{ seconds}$$

$$= \text{Length of the faster train} = 200 \text{ metres}$$

103. (C)

$$104. (C) \sqrt{20} + \sqrt{12} + \sqrt[3]{729} - \frac{4}{\sqrt{5}-\sqrt{3}} - \sqrt{81}$$

$$\rightarrow 2\sqrt{5} + 2\sqrt{3} + 9 - \frac{4(\sqrt{5}+\sqrt{3})}{(\sqrt{5}-\sqrt{3})(\sqrt{5}+\sqrt{3})} - 9$$

$$\rightarrow 2\sqrt{5} + 2\sqrt{3} - \frac{4(\sqrt{5}+\sqrt{3})}{5-3}$$

$$\rightarrow 2(\sqrt{5} + \sqrt{3}) - \frac{4(\sqrt{5}+\sqrt{3})}{2}$$

$$\rightarrow 2(\sqrt{5} + 3) - 2(\sqrt{5} + \sqrt{3})$$

$$\rightarrow 0$$

105. (b)

$$\text{Marked price} \times \frac{96}{100} = 1920$$

$$\therefore \text{Marked price} = 1920 \times 100 / 96 = 2000$$

106. (A)

107. (B):

$$\text{Speed of train} = 108 \text{ km/hr} = 108 \times 5 / 18 \text{ m/sec} = 30 \text{ m/s}$$

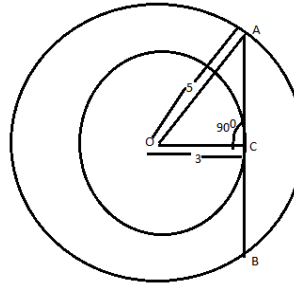
If the length of the platform be x meters, then

- $x+280/12=30$   
 $\Rightarrow x+280=360$   
 $\Rightarrow x=(360-280)=80m$   
 $\therefore \text{speed of man}=80/10 = 8m/s$
108. (d)  $\pi r^2 h / 2 \pi r h = 924/624$   
 First finding the value of r and then putting It back to get the value of h
109. (d) Amount spent on labour  
 $= (90/360) * 1500000$   
 $= 3,75,000$
110. (a) Amount spent on bricks, steel and cement  
 $= [(54+54+72)/360] * 100 = 50\%$
111. (b) % of amount spent on timber with respect to the amount spent on cement  
 $= (36/72) * 100 = 50\%$
112. (c) Amount spent on labour and supervision  
 $= [(90+54)/360] * 1500000$   
 $= 6,00,000$
113. (b)  $\frac{108^\circ - 90^\circ}{360^\circ} \times 100 = 5\%$
114. (c)
115. (c)  
 Number of male passenger of Train P =  
 $\frac{2.5 \times 17 \times 23 \times 4}{100 \times 100 \times 9} = 4344$   
 Number of male passenger of Train Q =  
 $\frac{2.5 \times 19 \times 64 \times 3}{100 \times 100 \times 8} = 11400$   
 Number of male passenger of Train R =  
 $\frac{2.5 \times 22 \times 59 \times 6}{100 \times 100 \times 13} = 14977$   
 Number of male passenger of Train S =  
 $\frac{2.5 \times 24 \times 83 \times 2}{100 \times 100 \times 7} = 14229$   
 Number of male passenger of Train T =  
 $\frac{2.5 \times 18 \times 44 \times 4}{100 \times 100 \times 13} = 6092$   
 So maximum number of male passenger in train R
116. (a)  
 Number of male passenger of Train R =  
 $\frac{2.5 \times 22 \times 59 \times 6}{100 \times 100 \times 13} = 14977$
117. (d) Required percentage =  
 $\frac{22}{35} \times 100 = 62.85\%$

118. (d) The ratio of male and female passengers is not given for all passengers.

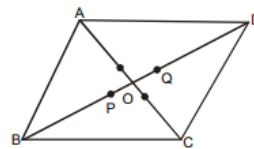
119. (c) Number of passenger of Train Q =  
 $\frac{2.5 \times 19 \times 64}{100 \times 100} = 30400$   
 Number of passenger of Train R =  
 $\frac{2.5 \times 22 \times 59}{100 \times 100} = 32450$

120. (a) Pipe A fills  $1/3^{\text{rd}}$  of cistern in 1 hour  
 Pipe B fills  $1/4^{\text{th}}$  of cistern in 1 hour  
 Pipe C fills  $1/5^{\text{th}}$  of cistern in 1 hour  
 $\therefore$  Pipes are opened at 5pm, 6pm and 7pm.  
 $\therefore$  Filled cistern at 7 pm =  $2 \times (1/3) + 1 \times (1/4) = 2/3 + 1/4 = (8+3)/12 = 11/12^{\text{th}}$   
 Work done by pipes A, B and C in 1 hour  
 $= 1 - (1/3 + 1/4) = 1 - 7/12 = 5/12$   
 Therefore, the time to be empty  
 $= \frac{11/12}{5/12} = \frac{11}{5} \times \frac{12}{5} = \frac{11}{5} = 2\frac{1}{5} \text{ hours}$   
 $= 2 \text{ hours } 12 \text{ minutes.}$   
 Thus, the time after 7 pm = 9.12pm
121. (c) In figure two circles are concentric,



Radius OA = 5 cm.  
 Radius OC = 3 cm.  
 AB is a chord to greater circle and tangent to smaller circle.  
 $\angle OCA$  is a right angled triangle at C  
 $\therefore OC^2 + AC^2 = OA^2 \rightarrow 9 + AC^2 = 25$   
 $\therefore AC^2 = 16 \rightarrow AC = 4 \text{ C.M.}$   
 $\therefore$  The length of the chord AB =  $2 \times 4 = 8 \text{ cm.}$

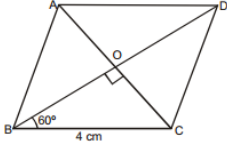
122. (b)



Centroid is the point where medians intersect.  
 Diagonals of parallelogram bisect each other.  
 $OP \text{ cm} = \frac{1}{3} * 9 = 3 \text{ cm}$   
 $OQ = \frac{1}{3} * 9 = 3 \text{ cm}$   
 $PQ = 6 \text{ cm}$



123. (d)



From triangle BOC,  $\cos 60^\circ = \frac{BO}{BC}$

$$BO = \frac{1}{2} \times 4 = 2 \text{ cm}$$

$$BD = 2 \times 2 = 4 \text{ cm}$$

124. (c)

$$2\sin^2\theta + 3\cos^2\theta = 2\sin^2\theta + 3(1 - \sin^2\theta)$$

$$= 3 - \sin^2\theta$$

For the minimum values,  $\sin^2\theta$  should be maximum and minimum values of  $\sin^2\theta$  is 1.

$$\therefore \text{the minimum values of } 2\sin^2\theta + 3\cos^2\theta = 3 - 1 = 2$$

125. (b) :

$$\sqrt{\frac{1 - \sin\theta}{1 + \sin\theta}} + \sqrt{\frac{1 + \sin\theta}{1 - \sin\theta}} = (1 - \sin\theta) + (1 + \sin\theta) / \cos\theta$$

$$= 2 \sec\theta$$

126. (c)

127. (d) Allegation method directly gives the answer 2:3

128. (b) Average of first 7 numbers will be the 4th number = X (Given)

Average of the 1 numbers will be the 6th number, i.e. X + 4

129. (a) Let Ronit's present age be x years. Then, father's present age = (x + 3x) years = 4x years.

$$(4x + 8) = \frac{5}{2} (x + 8)$$

$$\Rightarrow 8x + 16 = 5x + 40$$

$$\Rightarrow X = 8$$

$$\text{Hence, required ratio} = (4x + 16) / (x + 16) = 48/24 = 2$$

130. (c) If equal annual installment is Rs. x.

$$\text{Then, } \frac{x}{1 + r/100} + \frac{x}{(1 + r/100)^2} = \text{sum}$$

$$\text{Or } \frac{882}{(105/100)} + \frac{882}{(105/100)^2} = \text{sum}$$

$$\text{or } \frac{882}{105/100} + \frac{882}{(105/100)^2} = \frac{882 \times 20}{21} + \frac{882 \times 400}{441}$$

$$= 42 \times 20 + 2 \times 400 = 840 + 800 = \text{Rs. } 1640.$$

131. (b) If the speed of current is x km/hr.

Then the speed of boat in still water = 4x km/hr

$\therefore$  The speed downstream = 4x + x = 5x km/hr

And the speed upstream = 4x - x = 3x km/hr.

$$\therefore \frac{30}{5x} + \frac{30}{3x} = 8 \rightarrow \frac{6}{x} + \frac{10}{x} = 8$$

$$\therefore \frac{16}{x} = \frac{8}{1} \rightarrow 8x = 16 \rightarrow x = 2 \text{ km/hr}$$

$\therefore$  the speed of current = x = 2 km/hr

132. (D) Length of the carpet =  $\frac{\text{Total cost}}{\text{Rate/m}} =$

$$\frac{8100}{45}$$

$$= 180 \text{ m}$$

$$\text{Area of carpet} = \left(180 \times \frac{75}{100}\right) \text{ m}^2$$

$$= 135 \text{ m}^2$$

$$\text{Area of the room} = \text{Area of the carpet} = 135 \text{ m}^2$$

$$\Rightarrow \text{Breadth of the room} = \frac{\text{Area}}{\text{length}}$$

$$= \frac{135}{18} = 7.5 \text{ m}$$

133. (c)

For two similar triangles, ratio of all the linear dimensions like medians, altitudes, etc is same as ratio of their corresponding sides. Also, areas of two similar triangles are in ratio of square of their corresponding sides. So, we can say that ratio of their sides in this case will be 4:5 and so will be the ratio of their altitudes.

134. (b)

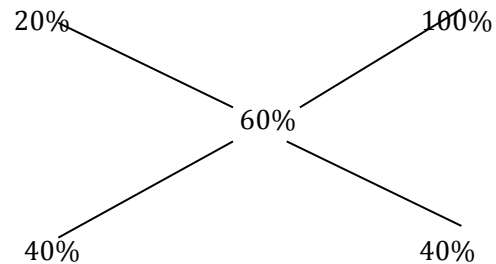
135. (b) : In original mixture, % of liquid B =

$$\frac{1}{4+1} \times 100 = 20\%$$

$$\text{In the resultant mixture, \% of liquid B} = \frac{3}{2+3} \times 100 = 60\%$$

Replacement is made by the liquid B, so the % of B in second mixture = 100%

Then by the method of allegation:



$\therefore$  Ratio in which first and second mixtures should be added is 1:1. It implies that the reduced quantity of the first mixture and the second mixture and the quantity of mixture B which is to be added are the same.

$\therefore$  Total mixture = 10 + 10 = 20 litres.

and liquid A =  $(20/5) \times 4 = 16$  litres

136. (b) : Let the two numbers be x and y.

$$3x = 1.2(2y + 105)$$

$$3x = 2.4y + 126 \quad \dots\dots\dots(1)$$

$$2x + 36 = 0.8(3y)$$

$$2x + 36 = 2.4y \quad \dots\dots\dots(2)$$

$$x = 162$$

$$137. (b) \text{ gain percent} = \frac{20 \times 100}{100 - 20} = \frac{20 \times 100}{80} = 25\%$$

138. (a)

$$x + y + z = 0 \rightarrow x = -(y + z)$$

$$y = -(x + z)$$

$$z = -(x + y)$$

$$\therefore x.y.z = -(y + z) \cdot -(x + z) \cdot -(x + y)$$

$$= -(y + z)(x + z)(x + y)$$

$$\therefore \frac{xyz}{(x+y)(y+z)(z+x)} = \frac{-(x+y)(y+z)(z+x)}{(x+y)(y+z)(z+x)} = -1$$

139. (c)

$$x(x^2 + 3x + 3) = x^3 + 3x^2 + 3x + 1 - 1$$

$$= x^3 + 1 + 3x(x + 1) - 1$$

$$= (x + 1)^3 - 1 = (99 + 1)^3 - 1$$

$$= 100^3 - 1 = 1000000 - 1 = 999999$$

140. (a)

$$\frac{1}{x+y} = \frac{1}{x} + \frac{1}{y} = \frac{x+y}{xy}$$

$$\therefore (x+y)^2 = xy \rightarrow x^2 + y^2 + 2xy = xy$$

$$\therefore x^2 + y^2 + xy = 0$$

$$\therefore x^3 - y^3 = (x-y)(x^2 + y^2 + xy) = (x-y) \cdot 0 = 0$$

141. (d)

$$2(\cos^2 \theta - \sin^2 \theta) = 1 \rightarrow \cos^2 \theta - \sin^2 \theta = \frac{1}{2}$$

$$\therefore \cos 2\theta = \cos 60^\circ \rightarrow 2\theta = 60^\circ \rightarrow \theta = 30^\circ$$

142. (c)

Let the number of sides in the regular polygon be n.

$$\therefore \frac{(2n-4) \cdot 90}{n} = 135 \rightarrow (2n-4)2 = 3n$$

$$\therefore 4n - 8 = 3n \rightarrow n = 8$$

143. (d)

Let the capacity of the drum be x liters.

$$\therefore \frac{3x}{4} - 30 = \frac{7x}{12} \rightarrow \frac{3x}{4} - \frac{7x}{12} = 30$$

$$\rightarrow \frac{9x - 7x}{12} = 30 \rightarrow \frac{x}{6} = 30$$

$$= x = 6 \times 30 = 180 \text{ liters}$$

144. (b)

When the two iron shots are immersed in water, it will displace water equal to its volume. Let the water be raised in the vessel by x cm

$$\therefore 2 \times \frac{4}{3} \times \pi \times (3)^3 = \pi \times (6)^2 \times x$$

$$\rightarrow 72\pi = 36\pi x$$

$$\rightarrow x = \frac{72}{36} = 2 \text{ cm}$$

145. (b)

Required change in area

$$= 5 - 10 - \frac{5 \times 10}{100} = -5.5\%$$

Negative sign shows decrease.

146. (d)  $\frac{540 \times 100}{3 \times 2.5} = \text{Rs. } 7200$

147. (b)  $8:16 :: 20:40$

148. (b)  $0.08 + 0.02 = 0.1$

149. (d)  $x + 1/x = 2\sqrt{3} \Rightarrow x^2 + \frac{1}{x^2} = (x + 1/x)^2 - 2 =$   
 $(2\sqrt{3})^2 - 2 = 10$

150. (a)  $\frac{3}{5} \times \frac{4}{5} + \frac{2}{5} \times \frac{3}{4} = \frac{39}{50}$   
 %students who do not get the scholarships =  
 $\frac{39}{50} \times 100 = 78\%$

151. c  
 152. c  
 153. c  
 154. d  
 155. b  
 156. a  
 157. d  
 158. d  
 159. c  
 160. a  
 161. d  
 162. d  
 163. d  
 164. c  
 165. b  
 166. c  
 167. a  
 168. c  
 169. b  
 170. c  
 171. b  
 172. d  
 173. d  
 174. b  
 175. a  
 176. b  
 177. c  
 178. c  
 179. d  
 180. b  
 181. a  
 182. b  
 183. a  
 184. a  
 185. c  
 186. b  
 187. c  
 188. b  
 189. c  
 190. d  
 191. b  
 192. b  
 193. d  
 194. a  
 195. d  
 196. a  
 197. c  
 198. a  
 199. a  
 200. a





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