

## Part A General Intelligence and Reasoning

**Directions** (Q. Non. 1-4) Select the related letters / word / number from the given alternatives.

- Tanning : Leather :: Pyrotechnics : ?  
 (a) Bombs (b) Fireworks  
 (c) Wool (d) Machinery
- King : Throne :: Rider : ?  
 (a) Chair (b) Horse  
 (c) Seat (d) Saddle
- F : 216 :: L : ?  
 (a) 1728 (b) 1700  
 (c) 1600 (d) 1723
- MOUSE : KPSTC :: LIGHT : ?  
 (a) MGHFU (b) JGEFR  
 (c) JJEIR (d) MJHIU
- If  $264 * 2 = 6$ ,  $870 * 3 = 11$ , then what should  $735 * 5$  be?  
 (a) 12 (b) 16  
 (c) 03 (d) 05
- Which one of the given responses would be a meaningful order of the following ?  
 1. Implementation  
 2. Conceptual Modelling  
 3. Requirements Analysis  
 4. Logical Modelling  
 5. Physical Model  
 6. Schema Refinement

- 3, 2, 4, 6, 5, 1
- 1, 3, 2, 6, 5, 4
- 3, 2, 5, 4, 6, 1
- 3, 2, 1, 4, 6, 5

**Directions** (Q. Non. 7-8) Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?

- b\_ab\_b\_aab\_b  
 (a) abbb (b) abba  
 (c) baaa (d) aabb
- \_bcab\_cabc\_abca\_b  
 (a) abca (b) aabc  
 (c) bbca (d) abac

**Directions** (Q. Non. 9-13) Find the odd word / number / number-pair from the given alternatives.

- (a) Head (b) Heed  
 (c) Led (d) Heap
- (a) Scurvy (b) Rickets  
 (c) Night-blindness (d) Influenza
- (a) Rain (b) Shower  
 (c) Sleet (d) Raisin
- (a) 547-563 (b) 71-55  
 (c) 517-523 (d) 248-231

- 10, 13, 234, 681, 997  
 (a) 10 (b) 234 (c) 13 (d) 681

**Directions** (Q. Non. 14-18) a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

- AFI, JOR, MRU, ?  
 (a) GJN (b) HMP (c) PMO (d) RJL
- bc, cde, de, efg, fg, ?  
 (a) ghi (b) fgh (c) hij (d) ijk
- C - 3, E - 5, G - 7, I - 9, ?,  
 (a) X - 24, M - 21  
 (b) K - 11, M - 13  
 (c) O - 15, X - 24  
 (d) M - 18, K - 14
- 5, 16, 51, 158, ?  
 (a) 1452 (b) 483 (c) 481 (d) 1454
- $9 * 2 : 9 * 9 :: 9 * 5 : ?$   
 (a)  $9 \times 4$  (b)  $9 \times 6$   
 (c)  $9 \times 7$  (d)  $9 \times 8$
- Priti scored more than Rahul. Yamuna scored as much as Divya. Lokita scored less than Manju. Rahul scored more than Yamuna. Manju scored less than Divya. Who scored the lowest?  
 (a) Manju (b) Yamuna  
 (c) Lokita (d) Rahul



- 20.** A man showed a boy next to him and said "He is the son of my wife's sister-in-law but I am the only child of my parents." How is my son related to him?  
 (a) Cousin (b) Brother  
 (c) Uncle (d) Nephew

- 21.** Find the correct group of signs to solve the equation.  
 $24 * 16 * 8 * 32$   
 (a)  $\div - =$  (b)  $- + =$   
 (c)  $\times \div =$  (d)  $+ - =$

- 22.** Sunil is the son of Kesav. Simran, Kesav's sister, has a son Maruti and daughter Sita. Prem is the maternal uncle of Maruti. How is Sunil related to Maruti?  
 (a) Cousin (b) Uncle  
 (c) Brother (d) Nephew

**Directions** (Q. Non. 23-25) From the given alternatives, select the word which cannot be formed using the letters of the given word.

- 23. MANUSCRIPT**  
 (a) PRIMUS (b) SMART  
 (c) RUSTIC (d) MASTER
- 24. SEGREGATION**  
 (a) NATION (b) GREAT  
 (c) GREETINGS (d) SEATING
- 25. CONSTITUTIONAL**  
 (a) TUITION (b) TALENT  
 (c) LOCATION (d) CONSULT

- 26.** If each of the letters in the English alphabet is assigned an even numerical value by giving A = 2, B = 4 and so on, what would be the total value of the letters for the word 'LADY' when similarly coded?  
 (a) 74 (b) 72 (c) 84 (d) 82

- 27.** If the word 'LEADER' is coded as 20-13-9-12-13-26, how would you write 'LIGHT'?  
 (a) 20-16-17-15-27  
 (b) 20-15-16-18-23  
 (c) 20-17-15-16-28  
 (d) 20-16-15-17-22

- 28.** If the first and second letters in the word 'COMMUNICATIONS' were interchanged, also the third and the fourth letters, the fifth and sixth letters and so on, which letter would be the tenth letter counting from your right?  
 (a) U (b) A  
 (c) T (d) N

- 29.** Which of the following interchanges of numbers would make the given equation correct?  
 $8 \times 20 \div 3 + 9 - 5 = 38$   
 (a) 3, 8 (b) 8, 9  
 (c) 3, 5 (d) 3, 9

- 30.** Put the correct mathematical signs in the following equation from the given alternatives.  
 $33 ? 11 ? 3 ? 6 = 115$   
 (a) +, -,  $\times$  (b)  $\times$ ,  $\div$ , -  
 (c)  $\div$ ,  $\times$ ,  $\times$  (d) -,  $\times$ , +

- 31.** Select the correct combination of mathematical signs to replace \* signs and to balance the given equation.  
 $15 * 24 * 3 * 6 * 17$   
 (a)  $+ \div - =$  (b)  $+ \times = \div$   
 (c)  $- \times = +$  (d)  $- \div + =$

**Directions** (Q. Non. 32-34) Select the missing number from the given responses.

- 32.**
- |       |      |      |
|-------|------|------|
| 84    | 81   | 88   |
| 14 12 | 18 9 | ? 11 |
- (a) 10 (b) 12  
 (c) 14 (d) 16

- 33.**
- |                |                |                |               |
|----------------|----------------|----------------|---------------|
| 3              | 5              | 8              | 7             |
| 4              | 6              | 4              | 6             |
| $\frac{5}{58}$ | $\frac{2}{58}$ | $\frac{2}{62}$ | $\frac{3}{?}$ |
- (a) 126 (b) 122 (c) 128 (d) 124

- 34.**
- |   |    |    |
|---|----|----|
| 4 | 3  | 2  |
| 6 | 9  | 10 |
| 9 | 27 | ?  |
- (a) 30 (b) 20 (c) 50 (d) 54

- 35.** Raj is standing in the middle of a square field. He starts walking diagonally to North-East. Then, he turns right and reaches the far end of the field. Then, he turns right and starts walking. In the midway, he again turns right and starts walking. In halfway, he turns to his left and reaches a new far end. In what direction is Raj now?  
 (a) North (b) South  
 (c) North-West (d) South-West

- 36.** A boy starts from home in early morning and walks straight for 8 km facing the Sun. Then, he takes a right turn and walks for 3 km. Then, he turns right again and

- walks for 2 km and then turns left and walks for 1 km. Then, he turns right, travels 1 km and then turns right and travels for 4 km straight. How far is he from the starting point?  
 (a) 5 km (b) 6 km  
 (c) 2 km (d) 4km

**Directions** (Q. Non. 37-38) One / two statements are given, followed by two / three conclusions I, II and III. 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.

- 37. Statement** Sick people need medicine.  
**Conclusions**  
 I. Healthy people do not need medicine.  
 II. People keep medicine in their home.  
 (a) Only Conclusion I follows  
 (b) Only Conclusion II follows  
 (c) Both Conclusions I and II follow  
 (d) Neither Conclusion I nor II follows

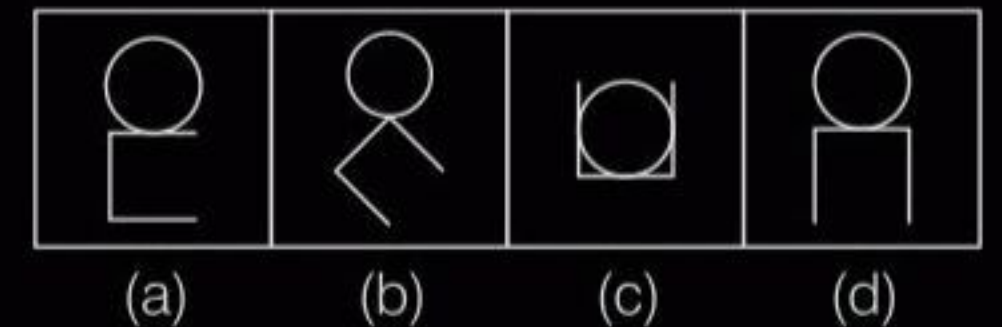
- 38. Statements**  
 I. Some years are decades.  
 II. All centuries are decades.  
**Conclusions**  
 I. Some centuries are years.  
 II. Some decades are years.  
 III. No century is a year.  
 (a) Conclusions I and II follow  
 (b) Conclusions I and III follow  
 (c) Only conclusion I follows  
 (d) Only conclusion II follows

- 39.** there is a ball and a rectangular jar. Four positions are shown below to keep them balanced. Which of the following will not be balanced easily?

**Question figures**



**Answer figures**



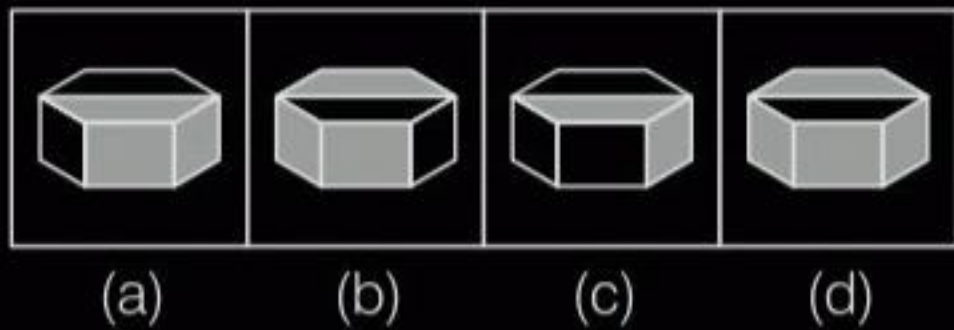
- 40.** Which one of the four boxes given below is created by folding the given key design in the question figure?



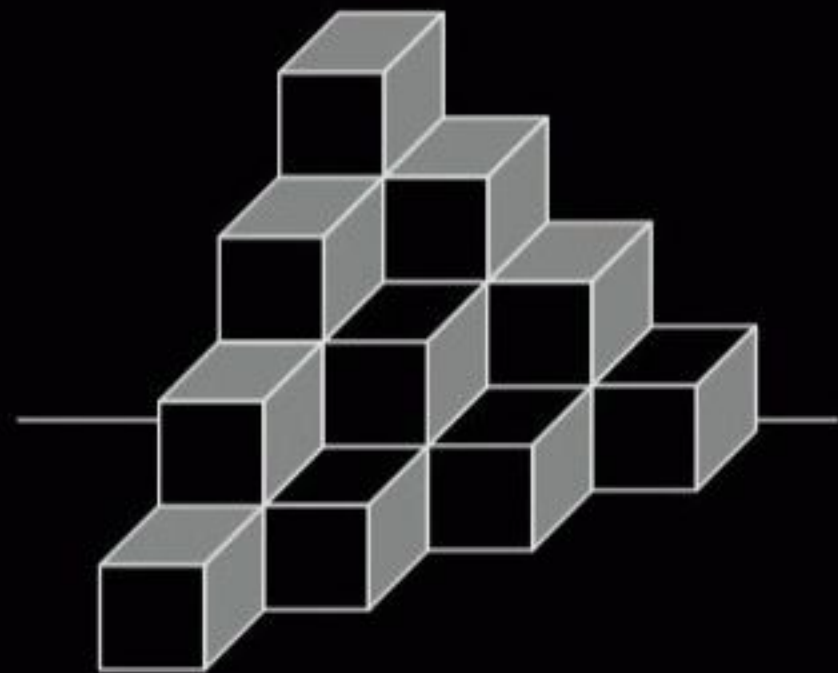
**Question figure**



**Answer figures**



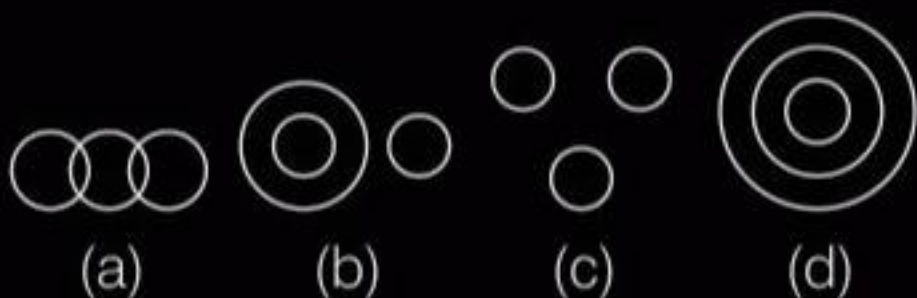
41. How many cubes are there in the group ?



(a) 10 (b) 16 (c) 18 (d) 20

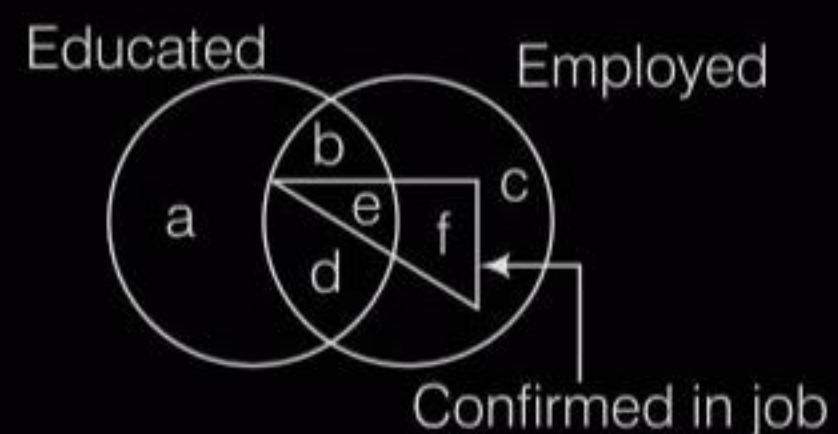
42. Which one of the following diagrams best depicts the relationship among Earth, Sea and, Sun ?

**Question figure**



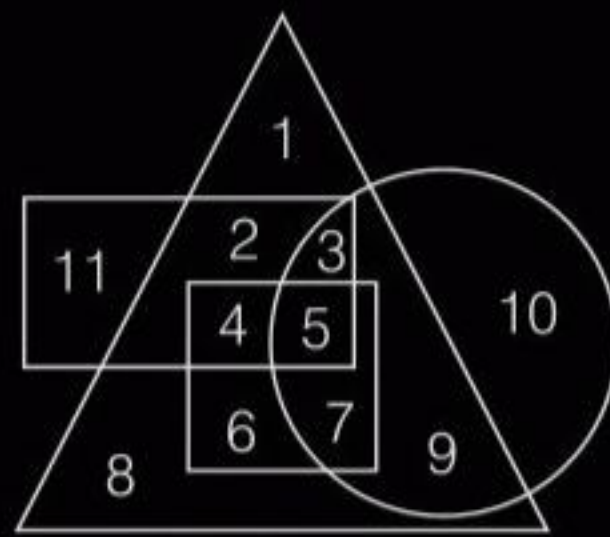
**Answer figures**

43. Read the figure and find the region representing persons who are educated and employed but not confirmed.



(a) ac (b) abc (c) bd (d) adc

44. In the given diagram, circle represents professionals, square represents dancers, triangle represents musicians and rectangle represents Europeans. Different regions in the diagram are numbered 1 to 11. Who among the following is neither a dancer nor a musician but is professional and not a European ?



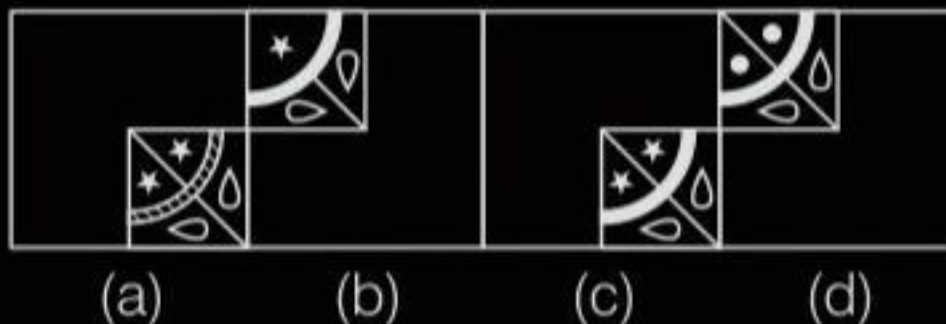
(a) 8 (b) 11 (c) 1 (d) 10

**Directions** (Q. Non. 45-46) In these question which answer figure will complete the pattern in the question figure?

**45. Question figure**



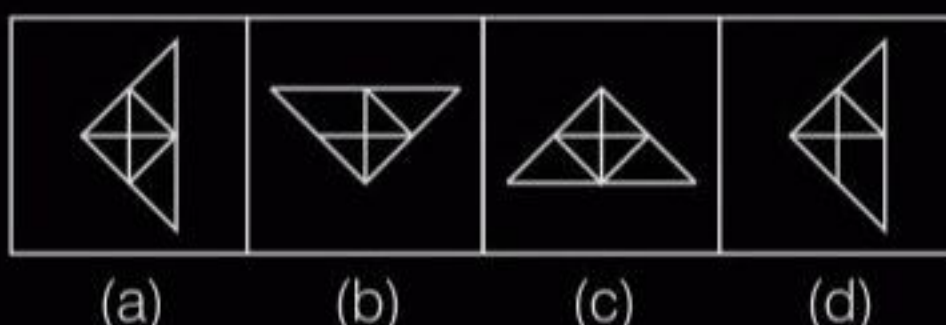
**Answer figures**



**46. Question figure**



**Answer figures**

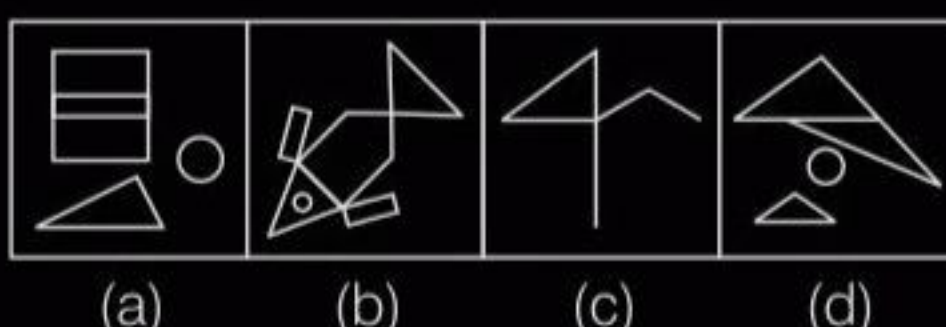


47. Which of the answer figures includes the separate components found in the question figure?

**Question figures**



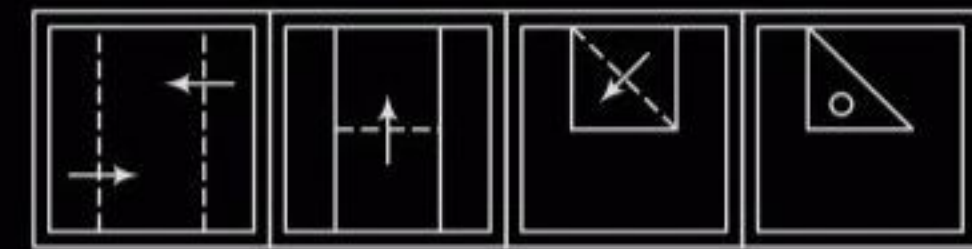
**Answer figures**



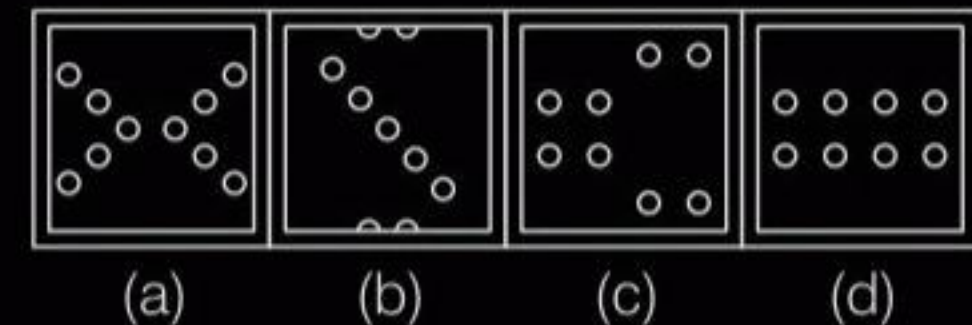
48. A piece of paper is folded and punched as shown below in the

question figures. From the given answer figures, indicate how it will appear when opened.

**Question figures**

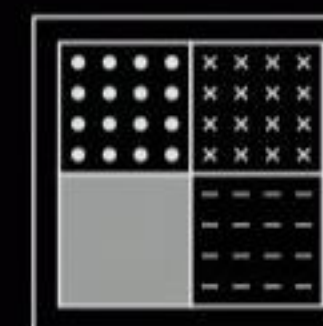


**Answer figures**

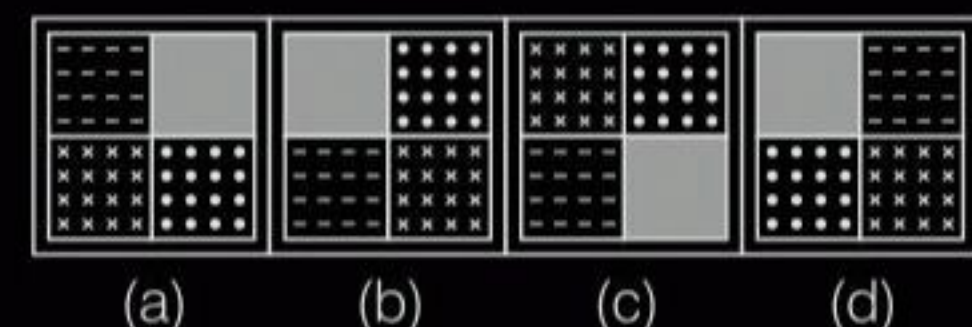


49. Choose the right water image of the question figure from the given answer figures.

**Question figure**



**Answer figures**



50. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., 'D' can be represented by 02, 14, etc., and 'R' can be represented by 57, 76, etc. Similarly, you have to identify the set for the word 'BEST'.

**Matrix-I**

	0	1	2	3	4
0	B	C	D	E	F
1	E	F	B	C	D
2	C	D	E	F	B
3	F	B	C	D	E
4	D	E	F	B	C

**Matrix-II**

	5	6	7	8	9
5	P	Q	R	S	T
6	S	T	P	Q	R
7	Q	R	S	T	P
8	T	P	Q	R	S
9	R	S	T	P	Q

(a) 24, 22, 76, 97  
 (b) 24, 21, 77, 97  
 (c) 24, 22, 77, 97  
 (d) 24, 22, 77, 96



## PART B : General Awareness

- 51.** Social accounting system in India classified into is  
 (a) enterprise, households and government  
 (b) assets, liabilities and debt position  
 (c) public sector, private sector and joint sector  
 (d) income, product and expenditure
- 52.** Forced savings refer to  
 (a) taxes on individual income and wealth  
 (b) compulsory deposits imposed on income tax payers  
 (c) provident fund contribution of private sector employees  
 (d) reduction of consumption consequent to a rise in prices
- 53.** The demand for labour is called  
 (a) direct demand  
 (b) derived demand  
 (c) factory demand  
 (d) market demand
- 54.** Which of the following is not an investment expenditure in goods and services?  
 (a) Purchase of a house  
 (b) Purchase of a machinery  
 (c) An increase in business inventories  
 (d) Expansion of the main plant of a company
- 55.** Which one of the following represents the savings of the private corporate sector?  
 (a) Total profits of a company  
 (b) Undistributed profits  
 (c) Excess of income over expenditure  
 (d) Dividends paid to shareholders
- 56.** Who presides over the joint session of Indian Parliament?  
 (a) President of India  
 (b) Chairperson of Rajya Sabha  
 (c) Senior most Member of Parliament  
 (d) Speaker of Lok Sabha
- 57.** Division of powers and independent Judiciary are the two important features of  
 (a) unitary form of Government  
 (b) democratic form of Government  
 (c) federal form of Government  
 (d) socialist form of Government
- 58.** Which article of the Indian Constitution did Dr BR Ambedkar term as the 'Heart and Soul of the Indian Constitution'?  
 (a) Article 19 (b) Article 356  
 (c) Article 32 (d) Article 14
- 59.** Who was the first to use the term 'State'?  
 (a) Plato (b) Aristotle  
 (c) Machiavelli (d) Hobbes
- 60.** Under which article of the Constitution of India, can the fundamental rights of the members of the Armed Forces be specifically restricted?  
 (a) Article 19 (b) Article 21  
 (c) Article 25 (d) Article 33
- 61.** Pulakesin II was the greatest ruler of the  
 (a) Chalukyas of Badami  
 (b) Chalukyas of Kalyani  
 (c) Pallavas of Kanchi  
 (d) Cholas of Tamil Nadu
- 62.** The Uttaramerur inscription provides information on the administration of the  
 (a) Satavahanas  
 (b) Pallavas  
 (c) Cholas  
 (d) Chalukyas
- 63.** Pitts India Act of 1784 was a/an  
 (a) regulating act (b) ordinance  
 (c) resolution (d) white paper
- 64.** Which one of the following statements is not true in respect of AO Hume ?  
 (a) He was a member of the Indian Civil Service  
 (b) He founded the Indian National Congress  
 (c) He presided over the Congress Annual Sessions twice  
 (d) He was an ornithologist
- 65.** Which of the following movements saw the biggest peasant guerilla war on the eve of independence?  
 (a) Tebhaga Movement  
 (b) Punnapra Vayalar Movement  
 (c) Telangana Movement  
 (d) Noakhali Movement
- 66.** Maps on large scale, representing both natural and man-made features are called  
 (a) Topographic maps  
 (b) Thematic maps  
 (c) Atlas maps  
 (d) Wall maps
- 67.** Which river in India flows in a rift-valley?  
 (a) Tapti (b) Narmada  
 (c) Krishna (d) Cauvery
- 68.** A narrow strip of land that connects two larger land masses is called  
 (a) peninsula (b) cape  
 (c) isthmus (d) strait
- 69.** Tiny marine animals which constitute limestone skeletons are called  
 (a) foraminifera (b) coral reefs  
 (c) diatoms (d) clamitomonous
- 70.** Apatanis are the major tribal group of  
 (a) Nagaland  
 (b) Sikkim  
 (c) Arunachal Pradesh  
 (d) Jharkhand
- 71.** Which of the following plant pigments absorbs in red and far-red region of light?  
 (a) Chlorophyll  
 (b) Phytochrome  
 (c) Cryptochrome  
 (d) Carotenoids
- 72.** The process through which excess of light energy is dissipated in photosynthesis is known as  
 (a) scavenging  
 (b) photolysis  
 (c) photophosphorylation  
 (d) quenching
- 73.** AIDS virus destroys  
 (a) monocytes (b) neutrophils  
 (c) basophils (d) lymphocytes
- 74.** Teeth and Bones acquire strength and rigidity from  
 (a) fluorine (b) chlorine  
 (c) sodium (d) calcium
- 75.** The type of tail found in Shark is  
 (a) homocercal (b) heterocercal  
 (c) diphyrcercal (d) protocercal
- 76.** The Sigmoid Colon is part of  
 (a) anal Canal (b) large Intestine  
 (c) ileum (d) small Intestine
- 77.** A good conductor while carrying current is  
 (a) negatively charged  
 (b) positively charged  
 (c) electrically neutral  
 (d) alternately charged positive and negative
- 78.** The angle between the magnetic meridian and the geographical meridian at a place is  
 (a) dip (b) declination  
 (c) latitude (d) azimuth



- 79.** The device used for measuring the wavelength of X-rays is  
 (a) cyclotron  
 (b) bragg spectrometer  
 (c) mass spectrometer  
 (d) GM counter
- 80.** Alpha particle is the nucleus of an atom of  
 (a) hydrogen (b) helium  
 (c) oxygen (d) lithium
- 81.** Who is the founder of 'Facebook' which is currently the No. 1 social networking website in India?  
 (a) Martin Cooper  
 (b) Orkut Buyukkokten  
 (c) Mark Zuckerberg  
 (d) Bill Gates
- 82.** In programming, repeating some statements is usually called  
 (a) structure  
 (b) looping  
 (c) control structure  
 (d) compiling
- 83.** Silicon is a polymer of  
 (a) silicon tetrachloride  
 (b) dialkyl dichloro silane  
 (c) silane  
 (d) tetraalkyl silane
- 84.** Which is a natural colloid?  
 (a) Urea (b) Cane-sugar  
 (c) Blood (d) Sodium chloride
- 85.** Which one of the following does not contain silver?  
 (a) Lunar caustic (b) German silver  
 (c) Horn silver (d) Ruby silver
- 86.** The presence of cobalt in vitamin B<sub>12</sub> was established for the first time by  
 (a) spectroscopy  
 (b) borax-Bead test  
 (c) sodium nitroprusside test  
 (d) hydrolysis test
- 87.** Which bacterial strain developed from natural isolates by genetic manipulations can be used for treating oil spills?  
 (a) Agrobacterium  
 (b) Clostridium  
 (c) Nitrosomonas  
 (d) Pseudomonas
- 88.** Coating of solid waste with impervious material is known as  
 (a) chemical fixation  
 (b) landfill  
 (c) capping  
 (d) encapsulation
- 89.** Ultraviolet rays can be used in water treatment as  
 (a) precipitator (b) hydrolyser  
 (c) disinfectant (d) flocculator
- 90.** Thiamidine dimer formation in DNA is caused by  
 (a) X-rays (b)  $\beta$  and  $\gamma$ -rays  
 (c) UV-rays (d) IR-rays
- 91.** Winner of the Australian Open Men's Singles Title in 2013 is  
 (a) Andy Murray  
 (b) Roger Federer  
 (c) Novak Djokovic  
 (d) David Ferrer
- 92.** Who among the following Presidents of MCC was a non-professional cricketer?  
 (a) Colin Cowdrey  
 (b) Peter May  
 (c) Christopher Martin Jenkins  
 (d) Ted Dexter
- 93.** Who won the Nobel Prize for Peace in 2012?  
 (a) UN Intergovernmental Panel on Climate Change  
 (b) International Atomic Energy Agency  
 (c) Liu Xiaobo  
 (d) European Union
- 94.** Who won the Jnanpith Award for 2011?  
 (a) Sitakant Mahapatra  
 (b) Sachidananda Routray  
 (c) Pratibha Ray  
 (d) Gopinath Mohanty
- 95.** Who is the author of the book "No Full Stops in India"?  
 (a) Ved Mehta  
 (b) Nirad C Choudhuri  
 (c) Mark Tully  
 (d) RK Narayan
- 96.** Which one of the following pairs is wrongly matched?  
 (a) Red Square — Moscow  
 (b) Tiananmen Square — Beijing  
 (c) Tahrir Square — Abu Dhabi  
 (d) Trafalgar Square — London
- 97.** The term of a non-permanent member of the UN Security Council is  
 (a) 6 months (b) 1 yr  
 (c) 2 yr (d) 3 yr
- 98.** Who is the Chairman of the 20th Law Commission?  
 (a) Justice JS Verma  
 (b) Justice KG Balakrishnan  
 (c) Justice DK Jain  
 (d) Justice Usha Mehra
- 99.** Julia Gillard is the Prime Minister of  
 (a) Belgium (b) Canada  
 (c) Australia (d) New Zealand
- 100.** Which is the first state in India to pass the Food Security Law?  
 (a) Kerala (b) Chhattisgarh  
 (c) Gujarat (d) Punjab

## PART C : QUANTITATIVE APTITUDE

- 101.** A and B together can complete a piece of work in 12 days, B and C can do it in 20 days and C and A can do it in 15 days. A, B and C together can complete it in  
 (a) 6 days (b) 8 days  
 (c) 10 days (d) 12 days
- 102.** A and B together can complete a work in 3 days. They start together but, after 2 days, B left the work. If the work is completed after 2 more days, B alone could do the work in  
 (a) 4 days (b) 6 days  
 (c) 8 days (d) 10 days
- 103.** A does 20% less work than B. If A can complete a piece of work in  $7\frac{1}{2}$  h, then B can do it in  
 (a) 4 h (b) 6 h (c) 8 h (d) 10 h
- 104.** A rational number between  $\frac{3}{4}$  and  $\frac{3}{8}$  is  
 (a)  $\frac{7}{3}$  (b)  $\frac{16}{9}$  (c)  $\frac{9}{16}$  (d)  $\frac{1}{7}$
- 105.** Product of two coprime numbers is 117. Then their LCM is  
 (a) 9 (b) 13 (c) 39 (d) 117
- 106.** The diameters of two circles are the side of a square and the diagonal of the square. The ratio of the areas of the smaller circle and the larger circle is  
 (a) 1 : 4 (b)  $\sqrt{2} : \sqrt{3}$   
 (c)  $1 : \sqrt{2}$  (d) 1 : 2
- 107.** The total surface area of a sphere is  $8\pi$  square unit. The volume of the sphere is  
 (a)  $\frac{8}{3}\pi$  cubic unit  
 (b)  $8\sqrt{3}\pi$  cubic unit  
 (c)  $\frac{8\sqrt{3}}{5}\pi$  cubic unit  
 (d)  $\frac{8\sqrt{2}}{3}\pi$  cubic unit



- 108.** A conical flask is full of water. The flask has base radius  $r$  and height  $h$ . This water is poured into a cylindrical flask of base radius  $mr$ . The height of water in the cylindrical flask is  
 (a)  $\frac{h}{2} m^2$  (b)  $\frac{2h}{m}$   
 (c)  $\frac{h}{3m^2}$  (d)  $\frac{m}{2h}$
- 109.** A dozen pairs of socks quoted at ₹ 180 are available at discount of 20%. How many pairs of socks can be bought for ₹ 48?  
 (a) 4 pairs (b) 2 pairs  
 (c) 5 pairs (d) 3 pairs
- 110.** The marked price of a table is ₹ 12000. If it was sold for ₹ 10500 after allowing a certain discount, then the rate of discount is  
 (a) 10% (b) 12.5%  
 (c) 15% (d) 17.5%
- 111.** The marked price of a radio set is ₹ 480. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain per cent would be  
 (a) 18% (b) 18.5%  
 (c) 20% (d) 25%
- 112.** The prices of a school bag and a shoe are in the ratio 7 : 5. The price of a school bag is ₹ 200 more than the price of a shoe. Then, the price of a shoe is  
 (a) ₹ 700 (b) ₹ 500  
 (c) ₹ 1200 (d) ₹ 200
- 113.** A sum of ₹ 300 is divided among  $P$ ,  $Q$  and  $R$  in such a way that  $Q$  gets ₹ 30 more than  $P$  and  $R$  gets ₹ 60 more than  $Q$ . The ratio of their shares is  
 (a) 2 : 3 : 5 (b) 3 : 2 : 5  
 (c) 2 : 5 : 3 (d) 5 : 3 : 2
- 114.** The average of nine numbers is 50. The average of the first five numbers is 54 and that of the last three numbers is 52. Then, the sixth number is  
 (a) 34 (b) 24  
 (c) 44 (d) 30
- 115.** The average of the first nine integral multiples of 3 is  
 (a) 12 (b) 15  
 (c) 18 (d) 21
- 116.** An article is sold for ₹ 300 at a profit of 20%. Had it been sold for ₹ 235, the loss percentage would have been  
 (a) 3 (b) 5  
 (c) 6 (d) 16
- 117.** A box has 100 blue balls, 50 red balls and 50 black balls. 25% of blue balls and 50% of red balls are taken away. Then, percentage of black balls at present is  
 (a) 25% (b)  $33\frac{1}{3}\%$   
 (c) 40% (d) 50%
- 118.** Two cars are moving with speeds  $v_1$  and  $v_2$  towards a crossing along two roads. If their distances from the crossing be 40 m and 50 m at an instant of time, then they do not collide, if their speeds are such that  
 (a)  $v_1 : v_2 \neq 4 : 5$   
 (b)  $v_1 : v_2 \neq 5 : 4$   
 (c)  $v_1 : v_2 = 25 : 16$   
 (d)  $v_1 : v_2 = 16 : 25$
- 119.** A certain distance is covered at a certain speed. If half of this distance is covered in double the time, the ratio of the two speeds is  
 (a) 4 : 1 (b) 1 : 4  
 (c) 2 : 1 (d) 1 : 2
- 120.** The simple interest on ₹ 4000 in 3 yr at the rate of  $x\%$  per annum equals to the simple interest on ₹ 5000 at the rate of 12% per annum in 2 years. The value of  $x$  is  
 (a) 6% (b) 8% (c) 9% (d) 10%
- 121.** If  $x^2 - 3x + 1 = 0$ , then the value of  $x^2 + x + \frac{1}{x} + \frac{1}{x^2}$  is  
 (a) 2 (b) 6 (c) 8 (d) 10
- 122.** If  $\frac{4x-3}{x} + \frac{4y-3}{y} + \frac{4z-3}{z} = 0$ , then the value of  $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$  is  
 (a) 3 (b) 4 (c) 6 (d) 9
- 123.** Find the simplest value of  $2\sqrt{50} + \sqrt{18} - \sqrt{72}$  (given  $\sqrt{2} = 1.414$ ).  
 (a) 9.898 (b) 10.312  
 (c) 8.484 (d) 4.242
- 124.** If  $a^2 + b^2 + 4c^2 = 2(a + b - 2c) - 3$  and  $a, b, c$  are real, then the value of  $(a^2 + b^2 + c^2)$  is  
 (a)  $3\frac{1}{4}$  (b) 2  
 (c)  $2\frac{1}{4}$  (d) 3
- 125.** A number  $x$  when divided by 289 leaves 18 as the remainder. The same number when divided by 17 leaves  $y$  as a remainder. The value of  $y$  is  
 (a) 2 (b) 3 (c) 1 (d) 5
- 126.** An equation of the form  $ax + by + c = 0$  where,  $a \neq 0, b \neq 0$  and  $c = 0$  represents a straight line which passes through  
 (a) (2, 4) (b) (0, 0)  
 (c) (3, 2) (d) None of these
- 127.** The numerator of a fraction is 4 less than its denominator. If the numerator is decreased by 2 and the denominator is increased by 1, then the denominator becomes eight times the numerator. Find the fraction.  
 (a)  $\frac{3}{7}$  (b)  $\frac{4}{8}$  (c)  $\frac{2}{7}$  (d)  $\frac{3}{8}$
- 128.** If  $x^2 = y + z, y^2 = z + x$  and  $z^2 = x + y$ , then the value of  $\frac{1}{1+x} + \frac{1}{1+y} + \frac{1}{1+z}$  is  
 (a) 1 (b) 2 (c) 0 (d) -1
- 129.** In a  $\triangle ABC$ ,  $\angle A = 90^\circ, \angle C = 55^\circ, \overline{AD} \perp \overline{BC}$ . What is the value of  $\angle BAD$ ?  
 (a)  $60^\circ$  (b)  $45^\circ$  (c)  $55^\circ$  (d)  $35^\circ$
- 130.** If  $G$  is the centroid of  $\triangle ABC$  and  $\triangle ABC = 48 \text{ cm}^2$ , then the area of  $\triangle BGC$  is  
 (a)  $8 \text{ cm}^2$  (b)  $16 \text{ cm}^2$   
 (c)  $24 \text{ cm}^2$  (d)  $32 \text{ cm}^2$
- 131.** The diagonals  $AC$  and  $BD$  of a cyclic quadrilateral  $ABCD$  intersect each other at the point  $P$ . Then, it is always true that  
 (a)  $AP \cdot CP = BP \cdot DP$   
 (b)  $AP \cdot BP = CP \cdot DP$   
 (c)  $AP \cdot CD = AB \cdot CP$   
 (d)  $BP \cdot AB = CD \cdot CP$
- 132.**  $N$  is the foot of the perpendicular from a point  $P$  of a circle with radius 7 cm, on a diameter  $AB$  of the circle. If the length of the chord  $PB$  is 12 cm, the distance of the point  $N$  from the point  $B$  is  
 (a)  $12\frac{2}{7} \text{ cm}$  (b)  $3\frac{5}{7} \text{ cm}$   
 (c)  $10\frac{2}{7} \text{ cm}$  (d)  $6\frac{5}{7} \text{ cm}$
- 133.** If  $O$  be the circumcentre of a  $\triangle PQR$  and  $\angle QOR = 110^\circ, \angle OPR = 25^\circ$ , then the measure of  $\angle PRQ$  is  
 (a)  $50^\circ$  (b)  $55^\circ$  (c)  $60^\circ$  (d)  $65^\circ$
- 134.** A vertical stick 12 cm long casts a shadow 8 cm long on the ground. At the same time, a tower casts a shadow\* 40 m long on the ground. The height of the tower is  
 (a) 60 m (b) 65 m  
 (c) 70 m (d) 72 m



**135.** A, B, C, D are four points on a circle. AC and BD intersect at a point E such that  $\angle BEC = 130^\circ$  and  $\angle ECD = 20^\circ$ . Then,  $\angle BAC$  is  
 (a)  $90^\circ$  (b)  $100^\circ$  (c)  $110^\circ$  (d)  $120^\circ$

**136.** In a triangle, if three altitudes are equal, then the triangle is  
 (a) equilateral (b) right  
 (c) isosceles (d) obtuse

**137.** The tops of two poles of height 24 m and 36 m are connected by a wire. If the wire makes an angle of  $60^\circ$  with the horizontal, then the length of the wire is  
 (a)  $8\sqrt{3}$  m (b) 8 m  
 (c)  $6\sqrt{3}$  m (d) 6 m

**138.** The value of  $\frac{1}{\operatorname{cosec} \theta - \cot \theta} - \frac{1}{\sin \theta}$  is  
 (a)  $\cot \theta$  (b)  $\operatorname{cosec} \theta$   
 (c)  $\tan \theta$  (d) 1

**139.** If  $\cos \theta + \sin \theta = \sqrt{2} \cos \theta$ , then  $\cos \theta - \sin \theta$  is  
 (a)  $-\sqrt{2} \cos \theta$  (b)  $-\sqrt{2} \sin \theta$   
 (c)  $\sqrt{2} \sin \theta$  (d)  $\sqrt{2} \tan \theta$

**140.** If  $\tan \alpha = n \tan \beta$  and  $\sin \alpha = m \sin \beta$ , then  $\cos^2 \alpha$  is  
 (a)  $\frac{m^2}{n^2}$  (b)  $\frac{m^2 - 1}{n^2 - 1}$   
 (c)  $\frac{m^2 + 1}{n^2 + 1}$  (d)  $\frac{m^2}{n^2 + 1}$

**141.** If  $\cos^4 \theta - \sin^4 \theta = \frac{2}{3}$ , then the value of  $1 - 2 \sin^2 \theta$  is  
 (a) 0 (b)  $\frac{2}{3}$   
 (c)  $\frac{1}{3}$  (d)  $\frac{4}{3}$

**142.** If  $\tan \theta = \frac{3}{4}$  and  $\theta$  is acute, then  $\operatorname{cosec} \theta$  is equal to  
 (a)  $\frac{5}{3}$  (b)  $\frac{5}{4}$  (c)  $\frac{4}{3}$  (d)  $\frac{4}{5}$

**143.** The value of  $\frac{1}{(1 + \tan^2 \theta)} + \frac{1}{(1 + \cot^2 \theta)}$  is  
 (a) 1 (b) 2 (c)  $\frac{1}{2}$  (d)  $\frac{1}{4}$

**Directions** (Q. Nos. 144-146) Shown below is the multiple bar diagram depicting the changes in the roll strength of a college in four faculties from 2001-02 to 2003-04. Study the above bar diagram and answer the questions.

**144.** The percentage of students in Law faculty in 2003-04 is  
 (a) 18.5% (b) 15.6%  
 (c) 16.7% (d) 14.8%

**145.** Percentage of increase in Science students in 2003-04 over 2001-02 is  
 (a) 50% (b) 150%  
 (c)  $66\frac{2}{3}\%$  (d) 75%

**146.** The percentage of students in Science faculty in 2001-02 is  
 (a) 26.9% (b) 27.8%  
 (c) 29.6% (d) 30.2%

**Directions** (Q. Nos. 147-150) The following pie chart shows the marks scored by a student in different subjects - viz. Physics (Ph), Chemistry (Ch), Mathematics (M), Social Science (SS) and English (E) in an examination. Assuming that total marks obtained for the examination is 810, answer the questions given below.

**147.** The marks obtained in English, Physics and Social Science exceed the marks obtained in Mathematics and Chemistry by  
 (a) 10% (b)  $10\frac{1}{9}\%$   
 (c) 11% (d)  $11\frac{1}{9}\%$

**148.** The difference of marks between Physics and Chemistry is same as that between  
 (a) Physics and English  
 (b) Mathematics and English  
 (c) English and Social Science  
 (d) Chemistry and Social Science

**149.** The marks obtained in Mathematics and Chemistry exceed the marks obtained in Physics and Social Science by  
 (a) 30 (b) 40  
 (c) 45 (d) 50

**150.** The subject in which the student obtained 135 marks is  
 (a) Physics (b) Chemistry  
 (c) Mathematics (d) English

**Directions** (Q. Nos. 151-155) In these questions some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error. If a sentence is free from error, blacken the oval corresponding to (d).

**151.** We have been knowing (a)/ each other (b)/ since we were children. (c)/ No error (d)

**152.** Neither of the teams (a)/ are sensible enough (b)/ to do this task. (c)/ No error (d)

**153.** If I was he (a) / I wouldn't accept (b)/ this project. (c)/ No error (d)

**154.** The teacher advised to (a)/ the student to borrow (b)/ a book from the library within three days. (c)/ No error (d)

**155.** I insisted (a)/ on his going (b)/ there immediately. (c)/ No error (d)

**Directions** (Q.Nos. 156-160) In these questions sentences are given with blanks to be filled with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four.

**156.** The Information and Communication Technology has \_\_\_\_\_ age and employs very highly paid technocrats.  
 (a) come of  
 (b) come upon  
 (c) come out of  
 (d) come through

**157.** They reached the railway station before the train \_\_\_\_\_ .  
 (a) had left (b) had been left  
 (c) left (d) was leaving

**158.** He slipped \_\_\_\_\_ his old ways and started drinking again.  
 (a) into (b) off (c) by (d) in

**159.** All is not well \_\_\_\_\_ the automobile sector.  
 (a) of (b) down  
 (c) in (d) to

**160.** Many premier educational institutions come forward to have a \_\_\_\_\_ with flourishing industries.  
 (a) tie-down (b) tie-up  
 (c) tie-in (d) tie-on

**Directions** (Q. Nos. 161-165) In these questions out of the four alternatives, choose the one which best expresses the meaning of the given word.

**161.** Stern  
 (a) Lenient (b) Young  
 (c) Stem (d) Strict

**162.** Citadel  
 (a) Metropolis (b) Mansion  
 (c) Fortress (d) Palace

**163.** Aberration  
 (a) Justification (b) Intensification  
 (c) Deviation (d) Rationality



**Directions** (Q. Nos. 164-166) *In these questions choose the word opposite in meaning to the given word and mark it in the Answer Sheet.*

- 164.** Dormant  
(a) Active (b) Inactive  
(c) Dorsal (d) Domestic
- 165.** Tranquility  
(a) Disturbance (b) Quiet  
(c) Serenity (d) Peace
- 166.** Dwindle  
(a) Decrease (b) Diminish  
(c) Shrink (d) Increase

**Directions** (Q. Nos. 167-171) *In these questions four alternatives are given for the Idiom / Phrase bold in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase.*

- 167.** Acquiring a job is a cakewalk for a student who has good academic performance coupled with good attitude.  
(a) walk away with a cake  
(b) a difficult achievement  
(c) a walkway made with cakes  
(d) an easy achievement
- 168.** Let sleeping dogs lie.  
(a) Do not bring up an old controversial issue  
(b) Dogs can raise tempers  
(c) Do not allow dogs to stand  
(d) Prevent dog mobility
- 169.** To get admission in present day educational institutions, all children should be born with a silver spoon in the mouth.  
(a) be born to silver spoon manufacturer  
(b) always hold a silver spoon  
(c) be born with silver spoon  
(d) be born in a rich family
- 170.** A man of straw means  
(a) a worthy fellow  
(b) an unreasonable person  
(c) a man of no substance  
(d) a very active person
- 171.** Children complain about their parents' gifts. They should learn not to look a gift horse in the mouth.  
(a) not to look at a horse's mouth  
(b) not to find fault with the gifts received  
(c) not to ask for more gift  
(d) not to find goodness in the gifts

**Directions** (Q. Nos. 172-181) *In these questions a sentence/part of the sentence is bold. Below are given alternatives to the bold sentence/part of the sentence at (a), (b) and (c) which may improve the sentence. Choose the correct alternative. In case no improvement is needed, your answer is (d).*

- 172.** If I had the money I would have bought the house.  
(a) If I had had the money I would have bought the house  
(b) If I have the money I would have bought the house  
(c) If I have had the money I would have bought the house  
(d) No improvement
- 173.** I wish I knew what is wrong with my car.  
(a) I wish I had known what is wrong with my car  
(b) I wish I know what is wrong with my car  
(c) I wish I knew what was wrong with my car  
(d) No improvement
- 174.** Just before he died, Amar, who is a poet, wrote this poem.  
(a) Just before he died, Amar, who was a poet, wrote this poem  
(b) Amar, who is a poet, wrote this poem just before he died  
(c) Amar wrote this poem, who is a poet, just before he died  
(d) No improvement
- 175.** The flag will be risen on the 15th of August.  
(a) The flag will be roused on the 15th of August  
(b) The flag will be rising on the 15th of August  
(c) The flag will be raised on the 15th of August  
(d) No improvement
- 176.** Sushma has wisdom, charm and she has a good sense of humour.  
(a) Sushma had a good sense of humour  
(b) a good sense of humour  
(c) has a good sense of humour  
(d) No improvement
- 177.** They knocked down ten houses when they built the new road.  
(a) ruptured  
(b) removed  
(c) pulled down  
(d) No improvement

- 178.** Don't sit in the grass. It's wet.  
(a) by the side of  
(b) on  
(c) beside  
(d) No improvement
- 179.** The game is more important than the winning of the prize.  
(a) The gaming is more important than the winning of the prize  
(b) The game is more important than winning of the prize  
(c) Gaming is more important than winning of the prize  
(d) No improvement
- 180.** The actor is out of jail, and not exactly a free man, since he will be under house arrest for an additional 90 days.  
(a) but not exactly a free man  
(b) though exactly a free man  
(c) if not exactly a free man  
(d) No improvement
- 181.** Some players on the team suffer from chronic knee problems and will not play in the next playoff.  
(a) Some player on the team suffered  
(b) Some player on the team suffer  
(c) Some players on the team suffers  
(d) No improvement

**Directions** (Q. Nos 182-188) *In these questions out of the four alternatives, choose the one which can be substituted for the given words/sentence.*

- 182.** To reduce to nothing  
(a) Cull (b) Lull  
(c) Null (d) Annul
- 183.** An obviously true or hackneyed statement  
(a) Truism (b) Syllogism  
(c) Iconic (d) Imagism
- 184.** Words inscribed on a tomb  
(a) Epilogue (b) Epitaph  
(c) Epitome (d) Epistle
- 185.** The act of producing beautiful handwriting using a brush or a special pen  
(a) Hieroglyphics  
(b) Calligraphy  
(c) Stencilling  
(d) Graphics
- 186.** A word composed of the first letters of the words in a phrase.  
(a) Acronym  
(b) Abridgement  
(c) Almanac  
(d) Anachronism



**187.** A person of obscure position who has gained wealth.

- (a) Extravagant (b) Promiscuous  
(c) Parvenu (d) Sumptuary

**188.** A study of sounds is known as

- (a) semantics (b) stylistics  
(c) linguistics (d) phonetics

**Directions** (Q. Nos. 189-190) *In these questions, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word.*

**189.** (a) Busyness (b) Bussyness  
(c) Business (d) Bussiness

**190.** (a) Questionnaire (b) Questionnair  
(c) Questionaire (d) Questionnare

**Directions** (Q. Nos. 191-200) *In these questions you have a passage with 10 questions. Read the passage carefully and choose the best answer to each question out of the four.*

The postmaster first took up his duties in the village of Ulapur. Though the village was a small one, there was an indigo factory nearby and the proprietor, an Englishman, had managed to get a post office established.

Our postmaster belonged to Calcutta. He felt like a fish out of water in this remote village. His office and living-room were in a dark thatched shed, not far from a green, slimy pond, surrounded on all sides by a dense growth.

The men employed in the indigo factory had no leisure, moreover they were hardly desirable companions for decent folk. Nor is a Calcutta boy an adept in the art of associating with others. Among strangers he appears either proud or ill at ease. At any rate the postmaster had but little company, nor had he much to do.

At times he tried his hand at writing a verse or two. That the movement of the leaves and clouds of the sky were enough to fill life with joy – such were the sentiments to which he sought to give expression. But God knows that the poor fellow would have felt it as the gift of a new life, if some genie of the Arabian Nights had in one night swept away the trees, leaves and all, and replaced them with a macadamised road, hiding the clouds from view with rows of tall houses.

**191.** What does the idiom 'fish out of water' suggest?

- (a) In unfamiliar surroundings  
(b) Can die any moment  
(c) Grasping for breath  
(d) Amphibious creature

**192.** Find a word in the passage which is the opposite of 'near'.

- (a) Convenient (b) Unknown  
(c) Close (d) Remote

**193.** Find a word in the passage which means 'the owner of a business'.

- (a) Constructor (b) Businessman  
(c) Entrepreneur (d) Proprietor

**194.** The adjective used to describe the postmaster's living-room is

- (a) bright (b) dark  
(c) light (d) deep

**195.** What does the phrase 'ill at ease' in the passage mean?

- (a) Forward  
(b) Disease  
(c) Comfortable  
(d) Uneasy

**196.** What does the phrase 'little company' in the passage mean?

- (a) Bad friendship  
(b) Hardly any friends  
(c) Small business  
(d) Business-like

**197.** At times, the postmaster wrote

- (a) poems (b) novels  
(c) short stories (d) dramas

**198.** The postmaster wrote on the

- (a) beauty of nature  
(b) beauty of himself  
(c) beauty of the weather  
(d) beauty of the village

**199.** The word 'genie' means

- (a) monster (b) spirit  
(c) ghost (d) soul

**200.** Which factory was situated near the village Ulapur?

- (a) Chemical  
(b) Rubber  
(c) Clothes  
(d) Dyes