Section: Quantitative Aptitude and Logical Reasoning

1. **Three fourths of a rectangular tank is filled with milk and then tilted on its side until the milk level coincides with one edge on the bottom and one edge on the top. However, during the tilting process 12 litres of milk are poured out. What is the capacity of the tank (in litres)?**
   (a) 48 (b) 36 (c) 67 (d) 60 (e) None of these
2. **Consider a two digit number "ab" and a three digit number "ccb", where "a", "b" and "c" are distinct decimal digits. If $(ab)^2 = ccb$ and ccb is greater than 300, then what is the value of "b"?**
   (a)2 (b) 4 (c) 1 (d) 5 (e)None of these
3. **40% of the employees of a certain company are men and 75% of the men earn more than Rs 4 lacs per year. If 45% of the company's employees earn more than Rs 4 lacs per year, what fraction of the women employed by the company earn Rs 4 lacs per year or less?**
   (a)¼ (b) ¾ (c) 3/8 (d) 4/7
   (e) None of these
4. **If A is the product of all prime numbers from 1 to 100, then A will be exactly divisible by ……**
   (a)10 (b)100 (c) 1000 (d) 200 (e)None of these
5. **If a+b+c=0, find the value of $(a^4+b^4+c^4)/(a^2b^2+b^2c^2+c^2a^2)$**
   (a) 0 (b) 1 (c) 2 (d) 4 (e)None of these
6. **What is the remainder when 11^{32} -5 is divided by 8?**
   (a) 2 (b) 6 (c) 4 (d) 7 (e)None of these
7. **In a survey of political preferences, 78% of those asked were in favour of atleast one of the proposals I, II and III. 50% of those asked favoured proposal I, 30% favoured proposal II and 20% favoured III. If 5% of those asked favoured all three proposals, what percentage of those asked favoured more than one of the three proposals?**
   (a) 12 (b)17 (c) 10 (d) 25 (e)None of these
8. **A die bearing the numbers 0, 1, 2, 3,4,5 on its faces is repeatedly thrown until the total of the throws exceeds 12. What is the most likely total that will be thus obtained?**
   (a) 17 (b) 13 ©12 (d) 17 (e)None of these
9. **In a hemispherical igloo, an Eskimo's head just touches the roof when he stands erect at the centre of the floor, but his son can play over an area of 9856 sq. units of the floor without stooping. If the Eskimo's height is 65 units, what is the son's height?**
   (a) 33 (b) 56 (c) 45 (d) 65 (e)None of these
10. **Suppose "n" is an integer such that the sum of the digits of "n" is 2 and "n" lies between 10^{10} and 10^{11}. What is the number of different values of "n"?**
    (a) 11 (b) 10 (c) 9 (d) 12 (e)None of these
11. **What is the total number of integer pairs (a,b) satisfying the equation a+b- (a*b) = 0?**
    (a) 0 (b) 1 (c) 2 (d) 4 (e)None of these

12. **For any odd positive integer greater than 1, the expression $n(n^2-1)$ is always divisible by ……..**

(a) 48 (b) 24 (c) 14 (d)32 (e)None of these

13. **The ratio between the ages of mother and daughter is 7:3. Mother was 26 years old when she gave birth to her only son. If daughter is 6 years elder to the son, what is the present age of the mother (in years)?**

(a) 46 (b) 35 (c) 45 (d) 32 (e)None of these

14. **The incomes of A and B are in the ratio 4:7 and their spendings are in the ratio 6:11. If A saves 1/3 of his income, then what is the ratio of the savings of A and B?**

(a) 11:19 (b) 12:19 (c) 11:18 (d) 12:17 (e)None of these

15. **A man uses a bucket to empty five tanks of capacities 42, 69, 96, 124 and 179 litres. He draws only bucketfulls. At the end of the process he finds that there were 3,4,5,7 and 10 litres left over respectively in the tanks. What was the volume of the bucket (in litres)?**

(a) 7 (b) 9 (c) 11 (d) 13 (e)None of these

16. **The average age of a group of "n" persons is 75. Two persons with ages 56 and 52 leave the group. A third person with age between 80 and 89 joins the group. The new average age of the group is a prime number. Which of the following is a possible age of the person who joined the group?**

(a) 87 (b) 86 (c) 81 (d) 88 (e)None of these

17. **Of the goose eggs laid at a certain pond, 2/3 hatched, and ¾ of the geese that hatched from those eggs survived the first month. Of the geese that survived the first month, 3/5 did not survive the first year. If 120 geese survived the first year and if no more than one goose hatched from each egg, how many goose eggs were laid at the pond?**

(a) 280 (b) 400 (c) 540 (d) 600 (e)None of these

Directions for questions 18 and 19 : Read the given data and answer the questions that follow.

Howrah Express leaves from Puri at 9 p.m and reaches Kharagpur at 4 a.m travelling at the speed of 60 km per hour. This train is scheduled to arrive at Howrah at 6.10 a.m. Dhavli Express departs from Howrah at 5.45 a.m.

18. **If the Dhavli Express travels at 65 km per hour, what will be its time of arrival at Kahragpur?**

(a) 6.30 a.m (b) 7a.m (c) 7.45 am (d)8 a.m (e)None of these

19. **If Dhavli Express changes its speed to 90 km per hour from Kharagpur, its time of arrival at Puri will be .....**

(a) 11.45 a.m (b) 12.05p.m (c) 12.25 p.m (d) 1 p.m (e)None of these

20. **If x can have only the values -3, 0 and 2, and y can have only the values -4, 2 and 3, what is the greatest possible value of 2x+y?**

(a) 13 (b) 15 (c) 16 (d)20 (e)None of these

Directions for questions 21, 22 and 23. Read the following to answer the questions that follow.

Ram leaves home with "x" flowers, then goes to the bank of a nearby river. On the bank of the river, there are four places of worship in a row. He dips all the "x" flowers into the river. The

number of flowers doubles. Then he enters the first place of worship, offers "y" flowers to the deity. He dips the remaining flowers into the river and again the number of flowers doubles. He goes to the second place of worship, offers "y" flowers to the deity. He dips the remaining flowers into the river , and again the number of flowers doubles. He goes to the third place of worship, offers "y" flowers to the deity. He dips the remaining flowers into the river, and again the number of flowers doubles. He then goes to the fourth place of worship, offers "y" flowers to the deity. Now he is left with no flowers in hand.

21. If Ram leaves home with 30 flowers, what is the number of flowers he offers to each deity?

(a) 30 (b) 31 (c) 32 (d) 33 (e)None of these

22. What is the minimum number of flowers that could be offered to each deity?

(a) 0 (b) 15 (c) 16 (d) 5 (e)None of these

23. What is the minimum number of flowers with which Ram leaves home?

(a) 16 (b) 15 (c) 0 (d) 5 (e)None of these

Directions for questions 24 to 26.

A customer service centre opens every day at 8.00 a.m. On a day, six customers entered the centre. First customer entered at 8.05 a.m. and other customers entered after 7, 3,4,6 and 2 minutes respectively after each other. The service person took 5,3,6,2,3 and 5 minutes respectively to serve the six customers. The service person can serve only one customer at one time.

24. When would the last customer leave the centre (after getting served)?

(a) 8.20 a.m (b) 8.30a.m (c) 8.33 a.m (d) 8.43 a.m (e)None of these

25. What is the total time for which the service person was idle?

(a) 3 minutes (b) 4 minutes (c) 7 minutes (d) 9 minutes (e)None of these

26. What is the largest time span for which the customer has to wait?

(a) 2 minutes (b) 3 minutes (c) 4 minutes (d) 7 minutes (e)None of these

27. In a survey 2/3 of a town has LPG connections. 1/25 have microwaves and LPG, 1/3 of these inspite of having a connection, do not use LPG at all. The remaining fraction of the people who have a connection use it. What proportion of the town does not use LPG at all?

(a) 11/26 (b) 25/26 (c) 26/75 (d) 26/28 (e)None of these

Directions for questions 28 to 32. Refer to the table below and answer the questions that follow.

Amount of income in certain industries (in billions of dollars)

Industry	Year 1	Year 2	Year 3	Year 4	Year 5
Agriculture	22	26	26	30	51
Communication	14	17	18	20	21
Construction	36	43	47	52	57
Finance & Real Estate	78	90	100	108	118
Manufacturing	213	218	226	253	287
Transportation	27	30	33	36	40

28. Which industry experienced the largest percentage increase from Year 3 to Year 4?

(a) Construction (b) Finance& Real Estate

(c) Agriculture (d) Communication (e) None of these

29. For which industry was there the least consistent increase in income over the period of the time covered by the table?

(a) Agriculture (b) Construction (c) Manufacturing

(d) Transportation (e) None of these

30. If the trend in the transportation industry were to continue, its income for Year 6 would most likely be about ..... billion dollars.

(a) 42 (b) 44 (c) 46 (d) 48 (e)None of these

31. Among the following, the greatest percentage increase in income occurred for .....

(a) Agriculture between Year 3 and Year 4

(b) Finance & Real Estate between Year 4 and Year 5

(c) Communication between Year 2 and Year 3

(d) Construction between Year 1 and Year 2

(e) None of these

32. In how many instances did a type of industry make a gain of 10% or more over the previous year listed?

(a) 1-4 (b) 5-8 (c) 13-16 (d) 9-12 (e)None of these

Directions for questions 33 to 35. Read the passage below and answer the questions that follow.

At a small company, parking spaces are reserved for the top executives: CEO, president, vice president, secretary, and treasurer with the spaces lined up in that order. The parking lot guard can tell at a glance if the cars are parked correctly by looking at the color of the cars. The cars are yellow, green, purple, red, and blue, and the executives' names are Alice, Bert, Cheryl, David, and Enid.

* The car in the first space is red.
* A blue car is parked between the red car and the green car.
* The car in the last space is purple.
* The secretary drives a yellow car.
* Alice's car is parked next to David's.
* Enid drives a green car.
* Bert's car is parked between Cheryl's and Enid's.
* David's car is parked in the last space.

33. Who is the secretary?

(a) Enid (b) David (C) Cheryl (d) Bert (e) Alice

34. Who is the CEO ?

(a) Alice (b) Bert (c) Cheryl (d) David (e) Enid

35. What color is the vice president's car?

(a) green (b) yellow (c) blue (d) purple (e) red

Directions for questions 36 to 40. Read the passage below and answer the questions that follow.

Five cities all got more rain than usual this year. The five cities are: L, M, N, O, and P. The cities are located in five different areas of the country: the mountains, the forest, the coast, the desert, and in a valley. The rainfall amounts were: 12 inches, 27 inches, 32 inches, 44 inches, and 65 inches, not necessarily in this order.

* The city in the desert got the least rain; the city in the forest got the most rain.
* N is in the mountains.
* L got more rain than O.
* M got more rain than P, but less rain than N.
* O got 44 inches of rain.
* The city in the mountains got 32 inches of rain; the city on the coast got 27 inches of rain.

36. Which city got the most rain?

(a) L (b) M (c) N (d) O (e) P

37. How much rain did M get?

(a)12 inches (b)27 inches (c) 32 inches (d) 44 inches (e) 65 inches

38. Which city is in the desert ?

(a) L (b) M (c) N (d) O (e) P

39. Where is O located?

(a) the mountains (b) the coast (c) in a valley (d) the desert (e) the forest

40. How much rain did N get?

(a) 12 inches (b) 27 inches (c) 32 inches (d) 44 inches (e) 65 inches

Section : Verbal Ability

Directions for questions 1 to 3. Arrange the sentences labeled alphabetically to form a coherent paragraph.

1. A. People can get infected by handling reptiles and then touching their mouths or an open cut.
B. At first, they look like the perfect pets : exotic, quiet, and tidy.
C. A study estimates that in 1995, there were as many as 6,700 reptile-caused salmonella infections.
D. But lizards and other pet reptiles can harbour a salmonella bacteria that makes people sick.

(a) DCBA (b) BCDA (c) BACD (d) BDCA (e) ABCD

2. A. While this may be true, it will be even more so during the festival.
B. To make gold buying even more exciting, the Dubai gold trade is offering glittering raffles.
C. Gold has always been the biggest attraction for Indian shoppers who come to Dubai.
D. When you buy gold, many believe, you do not spend- you invest.

(a) DCAB (b) ABCD (c) ACDB (d) CDAB (e) ABCD

3. A. In 2014, two years after Ren qualified for the bar, he took up the boy's appeal.
B. Lawyers get into trouble throughout the system, often in unexpected ways.
C. The case revolved around some kids who were playing with fireworks during Yeiling city's spring festival.
D. For Ren Qingliang, a criminal lawyer in Liaoning province, it began with a 16 year old boy

sentenced to six years in jail for arson.

(a)ABDC (b) BDAC (c)CABD (d) DBCA (e) ABCD

Directions for questions 4 and 5. Select the pair of words which best fits the two blanks in the sentence.

4. What this absence of violence ..... is that if the administration is ……. about maintaining peace, it can do so.

(a)conveys, ready (b) emphasizes, serious (c) hints, altered (d) delivers, directed (e) indicates, crazy

5. The political challenge for India lies in ..... Pakistan on all issues, including the Kashmir question while ……. its war on terrorism through a variety of ways.

(a)attacking, supporting (b) condemning, conducting

(c) engaging, sustaining (d) satiating, withholding

(e) supporting, countering

Directions for questions 6 to 10. Choose the option that best fits the numbered blank in the passage.

Sustainable development of a state largely ___6___ on two crucial factors, an eco-friendly atmosphere and availability of basic ___7___ such as power, sound network of transport and communication. So far as Assam is concerned, its ___8___ situation is now almost pleasant. The intensity of ___9___ by the activists of the various terrorist groups, especially those of the NDFB or the BLT, has diminished considerably over the past couple of weeks. Hopefully the situation will now ___10___ further following the recent historic Bodo Accord between the Bodoland movement and the Centre.

6.	(a) focuses	(b) hinges	(c) bends	(d) binds	(e)promotes
7.	(a) demands	(b) necessities	(c)infrastructure	(d)prerequisite	(e) things
8.	(a) political	(b) economic	(c) social	(d)financial	(e) legal
9.	(a) anger	(b) brutality	(c) ferocity	(d)violencea	(e) peace
10.	(a) improve	(b) boast	(c) look	(d) build on	(e) worsen

Directions for questions 11 to 16. Refer to the passage below and answer the questions that follow.

Many great inventions are initially greeted with ridicule and disbelief. The invention of the airplane was no exception. Although many people who heard about the first powered flight on December 17, 1903 were excited and impressed, others reacted with peals of laughter. The idea of flying an aircraft was repulsive to some people. Such people called Wilbur and Orville Wright, the inventors of the first flying machine, impulsive fools. Negative reactions, however, did not stop the Wrights. Impelled by their desire to succeed, they continued their experiments in aviation.

Orville and Wilbur Wright had always had a compelling interest in aeronautics and mechanics. As young boys they earned money by making and selling kites and mechanical toys. Later, they designed a newspaper-folding machine, built a printing press, and operated a bicycle-repair shop. In 1896, when they read about the death of Otto Lilienthal, the brothers' interest in flight grew into a compulsion.

Lilienthal, a pioneer in hang-gliding, had controlled his gliders by shifting his body in the desired direction. This idea was repellent to the Wright brothers, however, and they searched for more efficient methods to control the balance of airborne vehicles. In 1900 and 1901, the Wrights tested numerous gliders and developed control techniques. The brothers' inability to obtain enough lift power for the gliders almost led them to abandon their efforts.

After further study, the Wright brothers concluded that the published tables of air pressure on curved surfaces must be wrong. They set up a wind tunnel and began a series of experiments with model wings. Because of their efforts, the old tables were repealed in time and replaced by the first reliable figures for air pressure on curved surfaces. This work, in turn, made it possible for the brothers to design a machine that would fly. In 1903 the Wrights built their first airplane, which cost less than $1,000. They even designed and built their own source of propulsion-a lightweight gasoline engine. When they started the engine on December 17, the airplane pulsated wildly before taking off. The plane managed to stay aloft for 12 seconds, however, and it flew 120 feet.

By 1905, the Wrights had perfected the first airplane that could turn, circle, and remain airborne for half an hour at a time. Others had flown in balloons and hang gliders, but the Wright brothers were the first to build a full-size machine that could fly under its own power. As the contributors of one of the most outstanding engineering achievements in history, the Wright brothers are accurately called the fathers of aviation.

11. The idea of flying an aircraft was _____ to some people.

(a) boring (b) distasteful (c) exciting (d) needless (e) hopeless

12. People thought that the Wright brothers had _____.

(a) acted without thinking (b) been negatively influenced

(c) been too cautious (d) been mistaken

(e) acted with great planning

13. The Wrights' interest in flight grew into a _____.

(a) financial empire (b) plan (c) need to act (d) foolish thought

(e)fiasco

14. Lilienthal's idea about controlling airborne vehicles was _____ the Wrights.

(a) proven wrong by (b) opposite to the ideas of (c)dislikedby

(d) accepted by (e) appreciated by

15. The old tables were _____ and replaced by the first reliable figures for air pressure on curved surfaces.

(a) destroyed (b) invalidated (c) multiplied (d)approved (e) abolished

16. The Wrights designed and built their own source of _____.

(a) force for moving forward (b) force for turning around (c) turning

(d)force for going backward (e)flying high

Directions for questions 17 to 20. Refer to the passage below and answer the questions that follow.

One of the most intriguing stories of the Russian Revolution concerns the identity of Anastasia, the youngest daughter of Czar Nicholas II. During his reign over Russia, the czar had planned to revoke many of the harsh laws established by previous czars. Some workers and peasants, however, clamored for more rapid social reform. In 1918, a group of these people known as Bolsheviks overthrew the government. On July 17 or 18, they murdered the czar and what was thought to be his entire family.

Although witnesses vouched that all the members of the czar's family had been executed, there were rumors suggesting that Anastasia had survived. Over the years, a number of women claimed to be Grand Duchess Anastasia. Perhaps the most famous claimant was Anastasia Tschaikovsky, who

was also known as Anna Anderson.

In 1920, 18 months after the czar's execution, this terrified young woman was rescued from drowning in a Berlin river. She spent two years in a hospital, where she attempted to reclaim her health and shattered mind. The doctors and nurses thought that she resembled Anastasia and questioned her about her background. She disclaimed any connection with the czar's family. Eight years later, however, she claimed that she was Anastasia. She said that she had been rescued by two Russian soldiers after the czar and the rest of her family had been killed. Two brothers named Tschaikovsky had carried her into Romania. She had married one of the brothers, who had taken her to Berlin and left her there, penniless and without a vocation. Unable to invoke the aid of her mother's family in Germany, she had tried to drown herself.

During the next few years, scores of the czar's relatives, ex-servants, and acquaintances interviewed her. Many of these people said that her looks and mannerisms were evocative of the Anastasia that they had known. Her grandmother and other relatives denied that she was the real Anastasia, however.

Tired of being accused of fraud, Anastasia immigrated to the United States in 1928 and took the name Anna Anderson. She still wished to prove that she was Anastasia, though, and returned to Germany in 1933 to bring suit against her mother's family. There she declaimed to the court, asserting that she was indeed Anastasia and deserved her inheritance.

In 1957, the court decided that it could neither confirm nor deny Anastasia's identity. Although it will probably never be known whether this woman was the Grand Duchess Anastasia, her search to establish her identity has been the subject of numerous books, plays, and movies.

17. Some Russian peasants and workers _____ for social reform.

(a) longed (b) cried out (c) begged (d)hoped (e) pleaded

18. Witnesses _____ that all members of the czar's family had been executed.

(a) gave assurance (b) thought (c) hoped (d) convinced some (e) denied

19. Tschaikovsky initially _____ any connection with the czar's family.

(a) denied (b) stopped (c) noted (d)justified (e) promoted

20. She was unable to _____ the aid of her relatives.

(a) locate (b) speak about (c) call upon (d) identify (e)circumspect