

Analytical Skills Question Bank
(for 2020 -23 admitted batch, w.e.f. 2021-22)

Unit – I
ARITHMETIC ABILITY

Formulae:

1. **BODMAS rule:**

B- Bracket, O – of, D – Division, M – Multiplication, A – Addition and S- Subtraction.

$$2. \text{H.C.F} = \frac{\text{H.C.F.of Numerators}}{\text{L.C.M.of Denominators}} \quad \text{and} \quad \text{L.C.M} = \frac{\text{L.C.M of Numerators}}{\text{H.C.F.of Denominators}}$$

1. Simplify $b - [b - (a + b) - \{b - (b - \overline{a - b})\} + 2a]$
(a) $4b$ (b) $4a$ (c) $3ab$ (d) $2b$
2. Simplify $\frac{\frac{7}{2} \div \frac{5}{2} \times \frac{3}{2}}{\frac{7}{2} \div \frac{5}{2} \text{ of } \frac{3}{2}} \div 5.25$
(a) $\frac{8}{3}$ (b) $\frac{7}{3}$ (c) $\frac{3}{7}$ (d) $\frac{7}{6}$
3. Simplify $\left[3\frac{1}{4} \div \left\{ 1\frac{1}{4} - \frac{1}{2} \left(2\frac{1}{2} - \frac{1}{4} - \frac{1}{6} \right) \right\} \right]$
(a) 98 (b) 45 (c) 65 (d) 78
4. What mathematical operation should come at the place of ‘?’ in the equation:
 $2 ? 6 - 12 \div 4 + 2 = 11$
(a) + (b) – (c) $\times$ (d) $\div$
5. Find the value of $2 - [2 - \{2 - 2(2 + 2)\}]$
(a) – 4 (b) 4 (c) 6 (d) None of these
6. Evaluate $\frac{8 - [5 - (-3 + 2)] \div 2}{|5 - 3| - |5 - 8| \div 3}$
(a) 2 (b) 3 (c) 4 (d) 5
7. Find the value of ‘x’ if $1\frac{2}{3} \div \frac{2}{7} \times \frac{x}{7} = 1\frac{1}{4} \times \frac{2}{3} \div \frac{1}{6}$
(a) 0.006 (b) 0.16 (c) 0.6 (d) 6
8. $\frac{4335}{4(?)24} \div 1\frac{7}{8} = \frac{289}{528}$ Find the missing digit in place of ‘?’
(a) 1 (b) 2 (c) 8 (d) None of these
9. $\frac{3\frac{1}{4} - \frac{4}{5} \text{ of } \frac{5}{6}}{4\frac{1}{3} \div \frac{1}{5} - \left(\frac{3}{10} + 21\frac{1}{5} \right)} =$
(a) $\frac{1}{6}$ (b) $2\frac{7}{12}$ (c) $15\frac{1}{2}$ (d) $21\frac{1}{2}$
10. Solve $5172.49 + 378.352 + x = 9318.678$
(a) 7637.683 (b) 7367.368 (c) 3767.836 (d) 7763.638
11. Which of the following has fractions in ascending order?
(a) $\frac{2}{3}, \frac{3}{5}, \frac{7}{9}, \frac{9}{11}, \frac{8}{9}$ (b) $\frac{3}{5}, \frac{2}{3}, \frac{9}{11}, \frac{7}{9}, \frac{8}{9}$ (c) $\frac{3}{5}, \frac{2}{3}, \frac{7}{9}, \frac{9}{11}, \frac{8}{9}$ (d) $\frac{8}{9}, \frac{9}{11}, \frac{7}{9}, \frac{2}{3}, \frac{3}{5}$
12. Solve $0.014 \times 0.014 = ?$
(a) 0.000196 (b) 0.00196 (c) 19.6 (d) 196
13. 4.036 divided by 0.04 gives :
(a) 1.009 (b) 10.09 (c) 100.9 (d) None of these
14. $\frac{(0.1667)(0.8333)(0.3333)}{(0.2222)(0.6667)(0.1250)}$ is approximately equal to :
(a) 2 (b) 2.40 (c) 2.43 (d) 2.50
15. The value of $\left(\frac{0.051 \times 0.051 \times 0.051 + 0.041 \times 0.041 \times 0.041}{0.051 \times 0.051 - 0.051 \times 0.041 + 0.041 \times 0.041} \right)$ is
(a) 0.00092 (b) 0.0092 (c) 0.092 (d) 0.92

16. Find the least value of * for which $5967 * 13$ is divisible by 3.
 (a) 3 (b) 2 (c) 4 (d) 5
17. Find the least value of * for which $4832 * 18$ is divisible by 11.
 (a) 7 (b) 8 (c) 9 (d) 11
18. How many natural numbers between 17 and 80 are divisible by 6?
 (a) 8 (b) 9 (c) 10 (d) 11
19. The sum of all two digit numbers divisible by 5 is
 (a) 1035 (b) 1245 (c) 1230 (d) 945
20. The largest 4 digit number exactly divisible by 88 is
 (a) 9944 (b) 9768 (c) 9988 (d) 8888
21. Find the H.C.F. of 513, 1134 and 1215.
 (a) 27 (b) 45 (c) 69 (d) 88
22. Find the L.C.M of 16, 24, 36 and 54
 (a) 433 (b) 432 (c) 324 (d) 234
23. Which of the following is a pair of co-primes?
 (a) (16, 62) (b) (18, 25) (c) (21, 35) (d) (23, 92)
24. The L.C.M. of $\frac{1}{3}, \frac{5}{6}, \frac{2}{9}, \frac{4}{27}$ is :
 (a) $\frac{1}{54}$ (b) $\frac{10}{27}$ (c) $\frac{20}{3}$ (d) None of these
25. The ratio of two numbers is 3 : 4 and their H.C.F is 4. Their L.C.M is :
 (a) 12 (b) 16 (c) 24 (d) 48

VERBAL REASONING

1. In 60 minutes, the minute hand gains 55 minutes on the other hand.
2. In every hour, both the hands coincide once.
3. The hands are in the same straight line when they are coincident or opposite to each other.
4. When the two hands are at right angles, they are 15 minute spaces apart.
5. When the hands are in opposite directions, they are 30 minute spaces apart.
6. Angle traced by hour hand in 12 hours = 360° .
7. Angle traced by minute hand in 60 minutes = 360° .
8. In a given period, the number of days more than the complete weeks are called odd days.
9. Every year divisible by 4 is a leap year, if it is not a century. A leap year has 366 days.
10. The year which is not a leap year is called an ordinary year. An ordinary year has 365 days.
11. 1 ordinary year = 365 days = 52 weeks + 1 day
12. 1 leap year = 366 days = 52 weeks + 2 days

26. 1, 9, 25, 49, ?, 121
 (a) 64 (b) 81 (c) 91 (d) 100
27. 5760, 960, ?, 48, 16, 8
 (a) 120 (b) 160 (c) 192 (d) 240
28. $\frac{2}{3}, \frac{4}{7}, ?, \frac{11}{21}, \frac{16}{31}$
 (a) $\frac{5}{9}$ (b) $\frac{6}{11}$ (c) $\frac{7}{13}$ (d) $\frac{9}{17}$
29. 2, 8, 16, 128, ?
 (a) 2042 (b) 2046 (c) 2048 (d) 2056
30. 589654237, 89654237, 8965423, 965423, ?
 (a) 58965 (b) 65423 (c) 89654 (d) 96542

31. CIRCLE is related to RICELC in the same way as SQUARE is related to
 (a) QSUERA (b) QUSERA (c) UQSAER (d) UQSERA
32. TRADE is related to UQBCF in the same way as PLATE is related to
 (a) QKBSF (b) QKBUF (c) UQSAER (d) UQSERA
33. In a certain code language, BEAT is written as YVZG, then what will be the code of MILD?
 (a) ONRW (b) NOWR (c) ONWR (d) NROW
34. In a certain code, BRAIN is written as * % ÷ # × and TIER is written as \$ # + %. How is RENT written in that code?
 (a) % × # \$ (b) % # × \$ (c) % + × \$ (d) + × % \$
35. In a certain code, EAT is written as 318 and CHAIR is written 24156. What will TEACHER be written as?
 (a) 8312346 (b) 8321436 (c) 8312436 (d) 8313426
36. Pointing towards a person, a man said to a woman, "His mother is the only daughter of your father". How is the woman related to that person?
 (a) Daughter (b) Sister (c) Mother (d) Wife
37. B is the husband of P. Q is the only grandson of E, who is wife of D and mother-in-law of P. How is B related to D ?
 (a) Nephew (b) Cousin (c) Son-in-law (d) Son
38. E is the son of A. D is the son of B. E is married to C. C is B's daughter. How is D related to E?
 (a) Brother (b) Uncle (c) Father-in-law
 (d) Brother –in-law (e) None of these
39. Introducing Reena, Monika said, "She is the only daughter of my father's only daughter". How is Monika related Reena?
 (a) Aunt (b) Niece (c) Cousin (d) Mother (e) Data inadequate.
40. Pointing towards Rita, Nikhil said, "I am the only son of her mother's son ". How is Rita related to Nikhil?
 (a) Aunt (b) Niece (c) Mother (d) Cousin
41. How many times do the hands of a clock coincide in a day?
 (a) 20 (b) 21 (c) 22 (d) 24
42. How many times are the hands of a clock at right angle in a day?
 (a) 22 (b) 24 (c) 44 (d) 48
43. How many times in a day, are the hands of a clock in straight line but opposite in direction?
 (a) 20 (b) 22 (c) 24 (d) 48
44. At what angle the hands of a clock are inclined at 15 minutes past 5?
 (a) $58\frac{1}{2}^{\circ}$ (b) 64° (c) $67\frac{1}{2}^{\circ}$ (d) $72\frac{1}{2}^{\circ}$
45. How many times in a day, the hands of a clock are straight?
 (a) 22 (b) 24 (c) 44 (d) 48
46. What was the day of the week on 16th July, 1776?
 (a) Monday (b) Wednesday (c) Tuesday (d) Saturday
47. On What dates of March 2005 did Friday fall?
 (a) 4th, 12th, 18th and 25th (b) 4th, 11th, 18th and 25th
 (c) 5th, 12th, 19th and 26th (d) 3rd, 10th, 17th and 24th
48. January 1, 2007 was Monday. What day of the week lies on Jan. 1, 2008?
 (a) Monday (b) Tuesday (c) Wednesday (d) Sunday
49. Which of the following is not a leap year?
 (a) 700 (b) 800 (c) 1200 (d) 2000
50. On 6th march, 2005 Monday falls. What was the day of the week on 6th March, 2004.
 (a) Sunday (b) Saturday (c) Tuesday (d) Wednesday

Unit – II
QUANTITATIVE APTITUDE

Formulae

1. $\text{Average} = \left(\frac{\text{Sum of observations}}{\text{Number of observations}} \right)$
2. Suppose a man covers a certain distance at x kmph and an equal distance at y kmph.
Then, the average speed during the whole journey is $\left(\frac{2xy}{x+y} \right)$ kmph.
3. $\text{Speed} = \left(\frac{\text{Distance}}{\text{Time}} \right)$; $\text{Time} = \left(\frac{\text{Distance}}{\text{Speed}} \right)$; $\text{Distance} = \text{Speed} \times \text{Time}$
4. x km per hour $= \left(x \times \frac{5}{18} \right)$ m per sec; x m / sec $= \left(x \times \frac{18}{5} \right)$ km/hr

1. Find the average of all prime numbers between 30 and 50
(a) 40 (b) 41 (c) 55.5 (d) 39.8
2. Find the average of first 40 natural numbers.
(a) 20.5 (b) 60 (c) 55 (d) 35.4
3. David obtained 76, 65, 82, 67 and 85 marks (out of 100) in English, Mathematics, Physics, Chemistry and Biology. What are his average marks?
(a) 65 (b) 69 (c) 72 (d) 76 (e) None of these
4. The average of 2, 7, 6 and x is 5 and the average of 18, 1.6, x and y is 10. What is the value of y ?
(a) 30 (b) 20 (c) 40 (d) 35
5. A batsman makes a score of 87 runs in the 17th innings and thus increases his average by 3. Find his average after 17th inning.
(a) 38 (b) 40 (c) 45 (d) 39
6. If $a : b = 5 : 9$ and $b : c = 4 : 7$, find $a : b : c$
(a) 22 : 63 : 65 (b) 20 : 36 : 63 (c) 15 : 30 : 58 (d) 20 : 60 : 63
7. Divide Rs. 1162 among A, B, C in the ratio 35 : 28 : 20
(a) 940, 293, 802 (b) 904, 329, 208 (c) 490, 392, 280 (d) 409, 208, 923
8. If $2A = 3B = 4C$, then $A : B : C$ is :
(a) 2 : 3 : 4 (b) 4 : 3 : 2 (c) 6 : 4 : 3 (d) 20 : 15 : 2
9. If $0.75 : x :: 5 : 8$, then x is equal to
(a) 1.12 (b) 1.20 (c) 1.25 (d) 1.30
10. The fourth proportional to 5, 8, 15 is :
(a) 18 (b) 24 (c) 19 (d) 20 (e) 21
11. At present, the ratio between the ages of Arun and Deepak is 4 : 3. After 6 years, Arun's age will be 26 years. What is the age of Deepak at present?
(a) 12 years (b) 15 years (c) $19\frac{1}{2}$ years (d) 21 years
12. Present ages of Sammer and Anand are in the ratio of 5: 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?
(a) 24 (b) 27 (c) 40 (d) Cannot be determined (e) None of these
13. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B?
(a) 7 (b) 8 (c) 9 (d) 10 (e) 11
14. Sachin is younger than Rahul by 4 years. If their ages are in the respective ratio of 7 : 9, how old is Sachin?
(a) 16 years (b) 18 years (c) 28 years
(d) cant be determined (e) None of these
15. The total age of A and B is 12 years more than the total age of B and C. C is how many years younger than A ?
(a) 12 (b) 24 (c) C elder than A (d) data inadequate
(e) None of these

16. A cyclist covers a distance of 750m in 2 min 30 sec. What is the speed in km/hr of the cyclist?
 (a) 18 km /hr (b) 20 km /hr (c) 22 km /hr (d) 25 km /hr
17. An athlete runs 200 meters race in 24 seconds. His speed is :
 (a) 20 km /hr (b) 24 km /hr (c) 28.5 km /hr (d) 30 km /hr
18. A car is running at a speed of 108 km /hr. What distance will it cover in 15 seconds?
 (a) 45 meters (b) 55 meters (c) 450 meters
 (d) Cannot be determined (e) None of these
19. A truck covers a distance of 550 meters in 1 minute whereas a bus covers a distance of 33kms in 45 minutes. The ratio of their speeds is :
 (a) 3 : 4 (b) 4 : 3 (c) 3 : 5 (d) 50 : 3
20. A train covers a distance of 10 km in 12 minutes. If its speed is decreased by 5 km / hr the time taken by it to cover the same distance will be :
 (a) 10 min (b) 11 min 20 sec (c) 13 min (d) 13 min 20 sec
21. A man on tour travels first 160 km at 64 km /hr and the next 160 km at 80 km /hr. The average speed for the first 320 km of the tour is :
 (a) 33.55 km /hr (b) 36 km /hr (c) 71.11 km /hr (d) 71 km /hr
22. A train when moves at an average speed of 40 km /hr, reaches its destination on time. When its average speed becomes 35 km /hr, then it reaches its destination 15 minutes late. Find the length of journey.
 (a) 30 km (b) 40 km (c) 70 km (d) 80 km
23. A thief steals a car at 2.30 p.m. and drives it at 60kmph. The theft is discovered at 3 p.m. and the owner sets off in another car at 75kmph. When will he overtake the thief?
 (a) 4.30 p.m. (b) 4.45 p.m. (c) 5 p.m. (d) 5.15p.m.
24. A man can row upstream at 8 Kmph and downstream at 13kmph. The speed of the stream is
 (a) 2.5 kmph (b) 4.2kmph (c) 5kmph (d) 10.5kmph
25. A man's speed with the current is 15kmph and the speed of the current is 2.5kmph. The man's speed against the current is
 (a) 8.5kmph (b) 9kmph (c) 10kmph (d) 12.5kmph

BUSINESS COMPUTATIONS

Important formulae:

1. To express $x\%$ as a fraction, we have $x\% = \frac{x}{100}$
2. To express $\frac{a}{b}$ as a percent : We have $\frac{a}{b} = \left(\frac{a}{b} \times 100\right)\%$
3. If the price of commodity increase by $R\%$, then the reduction in consumption so as not to increase the expenditure is $\left[\frac{R}{100+R} \times 100\right]\%$
4. If the price of commodity decreases by $R\%$, then the increase in consumption so as not to decrease the expenditure is $\left[\frac{R}{100-R} \times 100\right]\%$
5. If the population of a town be P now and suppose it increases at the rate of $R\%$ per annum, then :
 (i) Population after 'n' years $= P \left(1 + \frac{R}{100}\right)^n$
 (ii) Population 'n' years ago $= \frac{P}{\left(1 + \frac{R}{100}\right)^n}$
6. Let the present value of a machine is P . Suppose it depreciates at the rate of $R\%$ per annum. Then :
 (i) Value of the machine after 'n' years $= P \left(1 - \frac{R}{100}\right)^n$

$$(ii) \quad \text{Value of the machine 'n' years ago} = \frac{P}{\left(1 - \frac{R}{100}\right)^n}$$

$$7. \text{ If A is } R\% \text{ more than B, then B is less than A by } \left[\frac{R}{100+R} \times 100\right] \%$$

$$8. \text{ If A is } R\% \text{ less than B, then B is more than A by } \left[\frac{R}{100-R} \times 100\right] \%$$

Cost Price(CP): The price at which an article is purchased, is called its Cost price.

Selling Price(SP) : The price at which an article is sold, is called its Selling Price.

Profit or Gain: If SP is greater than CP., the seller is said to have a profit or gain.

Loss: IF SP is less than CP., the seller is said to have incurred a loss.

$$9. \text{ Gain} = \text{S.P.} - \text{C.P.} \quad \text{and} \quad \text{Loss} = \text{C.P.} - \text{S.P.}$$

$$10. \text{ Gain \%} = \left(\frac{\text{Gain} \times 100}{\text{C.P.}}\right) \quad \text{and} \quad \text{Loss \%} = \left(\frac{\text{Loss} \times 100}{\text{C.P.}}\right)$$

$$11. \text{ S.P.} = \left(\frac{100 + \text{Gain \%}}{100}\right) \times \text{C.P.} \quad \text{and} \quad \text{S.P.} = \left(\frac{100 - \text{Loss \%}}{100}\right) \times \text{C.P.}$$

$$12. \text{ C.P.} = \left(\frac{100}{100 + \text{Gain \%}}\right) \times \text{S.P.} \quad \text{and} \quad \text{C.P.} = \left(\frac{100}{100 - \text{Loss \%}}\right) \times \text{S.P.}$$

Principal: The money borrowed or lent out for a certain period is called the principal or the sum.

Interest : Extra money paid for using other's money is called interest.

Simple Interest (SI): If the interest on a sum borrowed for a certain period is reckoned uniformly, then it is called Simple Interest.

Principal = P , Rate R % per annum (p.a.) and Time = T years.

$$\text{S.I} = \left(\frac{P \times R \times T}{100}\right); P = \left(\frac{100 \times \text{S.I.}}{R \times T}\right); R = \left(\frac{100 \times \text{S.I.}}{P \times T}\right); T = \left(\frac{100 \times \text{S.I.}}{P \times R}\right)$$

$$26. \text{ Express } 0.08\% \text{ as a fraction (a) } \frac{8}{10} \quad (b) \frac{8}{100} \quad (c) \frac{8}{1000} \quad (d) \frac{8}{10000}$$

27. The ratio 5 : 4 expressed as a percent equals :

$$(a) 12.5\% \quad (b) 40\% \quad (c) 80\% \quad (d) 125\%$$

28. What is 15% of Rs.34?

$$(a) \text{Rs. } 3.40 \quad (b) \text{Rs. } 3.75 \quad (c) \text{Rs. } 4.50 \quad (d) \text{Rs. } 5.10$$

29. What percent of Rs.2650 is Rs.1987.50?

$$(a) 60\% \quad (b) 75\% \quad (c) 80\% \quad (d) 90\%$$

30. 65 % of ? = 20% of 422.50

$$(a) 84.5 \quad (b) 130 \quad (c) 139.425 \quad (d) 200$$

31. A person incurs 5% loss by selling a watch for Rs.1140. At what price should the watch be sold to earn 5% profit?

$$(a) \text{Rs. } 1320 \quad (b) \text{Rs. } 1260 \quad (c) \text{Rs. } 1230 \quad (d) \text{Rs. } 1520$$

32. If on selling 12 notebooks, a seller makes a profit equal to the selling price of 4 note Books, what is his percent profit?

$$(a) 16\frac{2}{3} \quad (b) 25 \quad (c) 50 \quad (d) \text{Data inadequate} \quad (e) \text{None of these}$$

33. A sells a bicycle to B at a profit of 20%. B sells it to C at a profit of 25%. If C pays Rs.225 for it, the cost price of the bicycle for A is :

$$(a) \text{Rs. } 110 \quad (b) \text{Rs. } 120 \quad (c) \text{Rs. } 125 \quad (d) \text{Rs. } 150$$

34. The cash difference between the selling prices of an article at a profit of 4% and 6% is Rs.3. The ratio of the two selling prices is :

$$(a) 51 : 52 \quad (b) 52 : 53 \quad (c) 51 : 53 \quad (d) 52 : 55$$

35. By selling 33 meters of cloth, one gains the selling price of 11 meter. Find the gain percent

$$(a) 60\% \quad (b) 65\% \quad (c) 70\% \quad (d) 50\%$$

36. P and Q started a business investing Rs.85,000 and Rs.15,000 respectively. In what ratio the profit earned after 2 years be divided between P and Q respectively?
 (a) 3 : 4 (b) 3 : 5 (c) 15 : 23 (d) 17 : 23 (e) None of these
37. A, B, C subscribe Rs.50,000 for a business. A subscribe Rs.4000 more than B and B Rs. 5000 more than C. Out of a total profit of Rs.35,000, A receives :
 (a) Rs.8400 (b) Rs.11,900 (c) Rs.13,600 (d) Rs.14,700
38. A, B, C hired a car for Rs.520 and used it for 7, 8 and 11 hours respectively. Hire charges paid by B were :
 (a) Rs.140 (b) Rs.160 (c) Rs.180 (d) Rs.220
39. A, B and C enter into a partnership with a capital in which A's contribution is Rs.10,000. If out of a total profit of Rs.1000, A gets Rs.500 and B gets Rs.300, then C's capital is :
 (a) Rs.4000 (b) Rs.5000 (c) Rs.6000 (d) Rs.9000
40. Reena and Shaloo are partners in a business. Reena invests Rs. 35,000 for 8 months and Shaloo invests Rs.42,000 for 10 months. Out of a profit of Rs.31,750, Reena's share is :
 (a) Rs.9471 (b) Rs.12,628 (c) Rs.18,040 (d) Rs.18,942
41. A sum at simple interest at $13\frac{1}{2}\%$ per annum amounts to Rs.2502.50 after 4 years. Find the sum.
 (a) Rs.1365 (b) Rs.1589 (c) Rs.1526 (d) Rs.1625
42. A sum of Rs.12,500 amounts to Rs.15,500 in 4 years at the rate of simple interest. What is the rate of interest?
 (a) 3% (b) 4% (c) 5% (d) 6% (e) None of these
43. At what rate percent per annum will the simple interest on a sum of money be $\frac{2}{5}$ of the amount in 10 years?
 (a) 4% (b) $5\frac{2}{3}\%$ (c) 6% (d) $6\frac{2}{3}\%$
44. The differences between the simple interest received from two different sources on Rs.1500 for 3 years is Rs.13.50. The difference between their rates of interest is :
 (a) 0.1 % (b) 0.2% (c) 0.3% (d) 0.4% (e) None of these
45. A person invested in all Rs.2600 at 4%, 6% and 8% per annum simple interest. At the end of the year, he got the same interest in all the three cases. The money invested at 4% is :
 (a) Rs.200 (b) Rs.600 (c) Rs.800 (d) Rs.1200
46. Rs.800 becomes Rs.956 in 3 years at a certain rate of simple interest. If the rate of interest is increased by 4%, what amount will Rs.800 become in 3 years?
 (a) Rs.1020.80 (b) Rs.1025 (c) Rs.1052
 (d) Data inadequate (e) None of these
47. Find the compound interest on Rs.10,000 in 2 years at 4% per annum, the interest being compounded half-yearly.
 (a) Rs.852.23 (b) Rs.824.32 (c) Rs.258.94 (d) Rs.843.16
48. In what time will Rs.1000 become Rs.1331 at 10% per annum compounded annually?
 (a) 6Years (b) 8 years (c) 3 years (d) 2 years
49. A man serves Rs.200 at the end of each year and lends the money at 5% compound interest. How much will it become at the end of 3 years?
 (a) Rs.565.25 (b) Rs.635 (c) Rs.662.02 (d) Rs.666.50
50. Find the compound interest on Rs.15,625 for 9 months at 16% per annum compounded quarterly.
 (a) Rs.1851 (b) Rs.1941 (c) Rs.1951 (d) Rs.1961

Unit-III

1. The following table gives the sales of batteries manufactured by a company over the years. Study the table and answer the questions that follow.

**Number of different types of Batteries sold by a company over the years
(Numbers in thousands)**

Year	Types of Batteries					
	4AH	7 AH	32 AH	35 AH	55 AH	Total
1992	75	144	114	102	108	543
1993	90	126	102	84	126	528
1994	96	114	75	105	135	525
1995	105	90	150	90	75	510
1996	90	75	135	75	90	465
1997	105	60	165	45	120	495
1998	115	85	160	100	145	605

- The total sales of all the seven years is the maximum for which battery?
(a) 4AH (b) 7AH (c) 32AH (d) 35AH (e) 55AH
 - What is the difference in the number of 35AH batteries sold in 1993 and 1997?
(a) 24000 (b) 28000 (c) 35000 (d) 39000 (e) 42000
 - The percentage of 4AH batteries sold to the total number of batteries sold was maximum in the year:
(a) 1994 (b) 1995 (c) 1996 (d) 1997 (e) 1998
 - In the case of which battery there was a continuous decrease in sales from 1992 to 1997?
(a) 4AH (b) 7AH (c) 32AH (d) 35AH (e) 55AH
 - What was the approximate percentage increase in the sales of 55AH batteries in 1998 compared to that in 1992?
(a) 28% (b) 31% (c) 33% (d) 34% (e) 37%
2. Study the following table carefully and answer these questions:

**Number of candidates appeared and qualified in a competitive examination
from different states over the years**

Year	1997		1998		1999		2000		2001	
State	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.
M	5200	720	8500	980	7400	850	6800	775	9500	1125
N	7500	840	9200	1050	8450	920	9200	980	8800	1020
P	6400	780	8800	1020	7800	890	8750	1010	9750	1250
Q	8100	950	9500	1240	8700	980	9700	1200	8950	995
R	7800	870	7600	940	9800	1350	7600	945	7990	885

- Combining the states P and Q together in 1998, what is the percentage of the candidates qualified to that of the candidates appeared?
(a) 10.87% (b) 11.49% (c) 12.35% (d) 12.54% (e) 13.05%
- The percentage of the total number of qualified candidates to the total number of appeared candidates among all the five states in 1999 is :
(a) 11.49% (b) 11.84% (c) 12.21% (d) 12.57% (e) 12.73%
- What is the percentage of candidates qualified from state N for all the years together, over the candidates appeared from state N during all the years together?
(a) 12.36% (b) 12.16% (c) 11.47% (d) 11.15% (e) None of these.
- What is the average of candidates who appeared from state Q during the given year?
(a) 8700 (b) 8760 (c) 8810 (d) 8920 (e) 8990
- In which of the given years the number of candidates appeared from State P has maximum percentage of qualified candidates?
(a) 1997 (b) 1998 (c) 1999 (d) 2000 (e) 2001

3. The following table gives the percentage of marks obtained by seven students in six different subjects in an examination. Study the table and answer the questions based on it. The numbers in the brackets give the maximum marks in each subject.

Subjects(Max. Marks) Student	Maths (150)	Chemistry (130)	Physics (120)	Geography (100)	History (60)	Computer Science (40)
Ayush	90	50	90	60	70	80
Aman	100	80	80	40	80	70
Sajal	90	60	70	70	90	70
Rohit	80	65	80	80	60	60
Muskan	80	65	85	95	50	90
Tanvi	70	75	65	85	40	60
Tarun	65	35	50	77	80	80

- What was the aggregate of marks obtained by Sajal in all the six subjects?
(a) 409 (b) 419 (c) 429 (d) 439 (e) 449
 - What is the overall percentage of Tarun?
(a) 52.5% (b) 55% (c) 60% (d) 63% (e) 64.5%
 - What are the average marks obtained by all the seven students in Physics?
(a) 77.26 (b) 89.14 (c) 91.37 (d) 96.11 (e) 103.21
 - The number of students who obtained 60% and above marks in all the subjects is:
(a) 1 (b) 2 (c) 3 (d) None (e) None of these
 - In which subject is the overall percentage the best?
(a) History (b) Maths (c) Physics (d) Chemistry (e) Geography
4. Study the following table and answer the questions based on it :

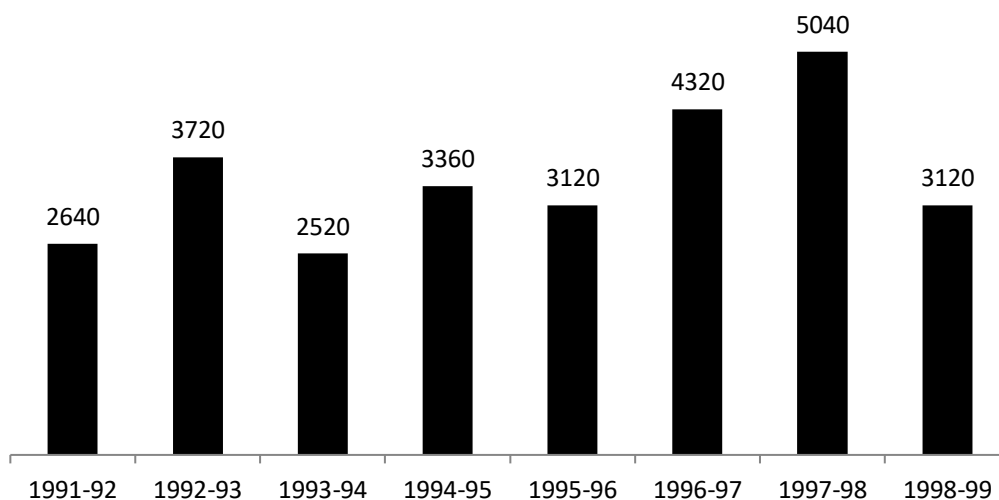
Number of candidates appeared, qualified and selected in a competitive examination from five states Delhi, H.P., U.P., Punjab and Haryana over the years 1997 to 2001

Year	Delhi			HP			UP			Punjab			Haryana		
	App	Qual	Sel	App	Qual	Sel	App	Qual	Sel	App	Qual	Sel	App	Qual	Sel
1997	8000	850	94	7800	810	82	7500	720	78	8200	680	85	6400	700	75
1998	4800	500	48	7500	800	65	5600	620	85	6800	600	70	7100	650	75
1999	7500	640	82	7400	560	70	4800	400	48	6500	525	65	5200	350	75
2000	9500	850	90	8800	920	86	7000	650	70	7800	720	84	6400	540	60
2001	9000	800	70	7200	850	75	8500	950	80	5700	485	60	4500	600	75

- In the year 1997, which state had the lowest % of candidates selected over the candidates appeared?
(a) Delhi (b) HP (c) UP (d) Punjab (e) Haryana
- The percentage of candidates qualified from Punjab over those appeared from Punjab is highest in the year:
(a) 1997 (b) 1998 (c) 1999 (d) 2000 (e) 2001
- The percentage of candidates selected from UP over those qualified from UP is highest in the year :
(a) 1997 (b) 1998 (c) 1999 (d) 2000 (e) 2001
- The number of candidates selected from Haryana during the period under review is approximately what percent of the number selected from Delhi during the period?
(a) 79.5% (b) 81% (c) 84.5% (d) 88.5% (e) 92.5%
- For which state the average number of candidates selected over the years is the maximum?
(a) Delhi (b) HP (c) UP (d) Punjab (e) Haryana

5. The bar graph given below shows the foreign exchange reserves of a country (in million US Dollars) from 1991-92 to 1998-99. Answer the questions based on this graph.

Foreign Exchange Reserves of a country
(in million US Dollars)



- The foreign exchange reserves in 1997-98 was how many times that 1994-95?
(a) 0.7 (b) 1.2 (c) 1.4 (d) 1.5 (e) 1.8
- What was the percentage increase in the foreign exchange reserves in 1997-98 over 1993-94?
(a) 100 (b) 150 (c) 200 (d) 620 (e) 2520
- For which year, the percent increase of foreign exchange reserves over the previous year, is the highest?
(a) 1992-93 (b) 1993-94 (c) 1994-95 (d) 1996-97 (e) 1997-98
- The foreign exchange reserves in 1996-97 were approximately what percent of the average foreign exchange reserves over the period under review?
(a) 95% (b) 110% (c) 115% (d) 125% (e) 140%
- The ratio of the number of years, in which the foreign exchange reserves are above the average reserves, to those in which the reserves are below the average reserves is:
(a) 2 : 6 (b) 3 : 4 (c) 3 : 5 (d) 4 : 4 (e) 5 : 3

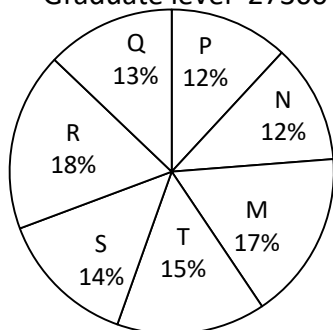
Important formulae for Pie-charts

- The sum of all the central angles is 360°
- Central angle of the component = $\left(\frac{\text{Value of the component}}{\text{Total value}} \times 360 \right)^\circ$

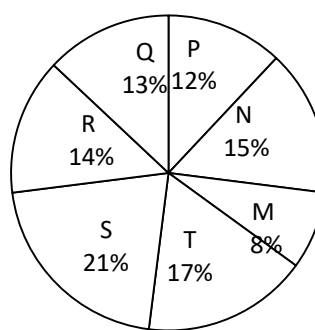
6. The following pie-charts show the distribution of students of graduate and post-graduate levels in seven different institutes – M,N,P,Q,R,S and T in a town.

Distribution of students at graduate and post-graduate levels in seven institutes – M,N,P,Q,R,S and T

Total number of students of Graduate level=27300

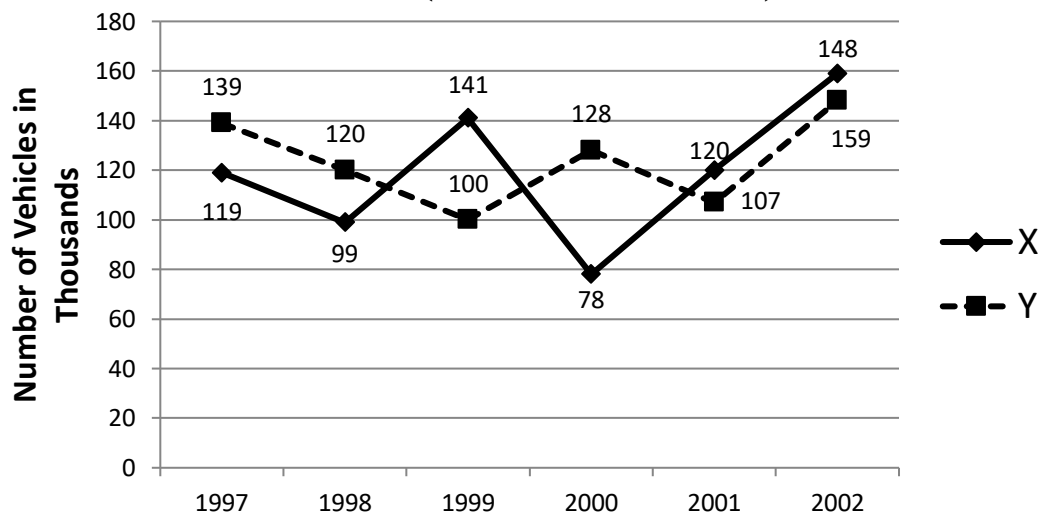


Total number of students of Post - Graduate level= 24700



- How many students of institutes M and S are studying at graduate level?
(a) 7516 (b) 8463 (c) 9127 (d) 9404
 - Total number of students studying at post-graduate level from institutes N and P is :
(a) 5601 (b) 5944 (c) 6669 (d) 7004
 - What is the total number of graduate and Post-graduate level students in institute R?
(a) 8320 (b) 7916 (c) 9116 (d) 8372
 - What is the ratio between the number of students studying at post-graduate and graduate levels respectively from institute S?
(a) 14 : 19 (b) 19 : 21 (c) 17 : 21 (d) 19 : 14
 - What is the difference between the number of students studying at post graduate level from institutes S and the number of students studying at graduate level from institute Q?
(a) 13 : 19 (b) 21 : 13 (c) 13 : 8 (d) 19 : 13
7. Study the following line-graph and answer the questions based on it.

Number of vehicles manufactured by Two Companies over the Years
(Number in Thousands)



- What is the difference between the total productions of the two companies in the given years?
(a) 19000 (b) 22000 (c) 26000 (d) 28000 (e) 29000
- What is the difference between the numbers of vehicles manufactured by Company Y in 2000 and 2001?
(a) 50000 (b) 42000 (c) 33000 (d) 21000 (e) 13000
- What is the average number of vehicles manufactured by Company X over the given period?
(a) 119333 (b) 113666 (c) 112778 (d) 111223 (e) None of these
- In which of the following years, the difference between the productions of Companies X and Y was the maximum among the given years?
(a) 1997 (b) 1998 (c) 1999 (d) 2000 (e) 2001
- The production of company Y in 2000 was approximately what percent of the production of Company X in the same year?
(a) 173 (b) 164 (c) 132 (d) 97 (e) 61

KEY
Unit - I

Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
1	B	2	C	3	D	4	C	5	D
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
6	D	7	D	8	B	9	C	10	C
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
11	C	12	A	13	C	14	D	15	C
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
16	B	17	A	18	D	19	D	20	A
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
21	A	22	B	23	B	24	C	25	D
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
26	B	27	C	28	C	29	C	30	D
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
31	D	32	A	33	D	34	C	35	C
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
36	C	37	D	38	D	39	E	40	A
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
41	C	42	C	43	B	44	D	45	C
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
46	C	47	B	48	B	49	A	50	B

Unit - II

Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
1	D	2	A	3	E	4	C	5	D
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
6	B	7	A	8	C	9	B	10	B
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
11	B	12	A	13	D	14	E	15	A
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
16	A	17	D	18	C	19	A	20	D
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
21	C	22	C	23	C	24	A	25	C
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
26	B	27	D	28	D	29	B	30	B
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
31	B	32	C	33	D	34	B	35	D
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
36	D	37	D	38	B	39	B	40	B
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
41	D	42	D	43	A	44	D	45	D
Q.NO	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans	Q.No	Ans
46	C	47	B	48	C	49	C	50	C

Unit - III

Q.NO	1	2	3	4	5
1	C	D	D	B	D

Q.NO	1	2	3	4	5
2	C	B	D	E	E

Q.NO	1	2	3	4	5
3	E	C	B	B	B

Q.NO	1	2	3	4	5
4	D	D	B	D	A

Q.NO	1	2	3	4	5
5	D	A	A	D	C

Q.NO	1	2	3	4	5
6	B	C	D	D	D

Q.NO	1	2	3	4	5
7	C	D	A	D	B