

P.R.GOV.T.COLLEGE (AUTONOMOUS), KAKINADA
II B.Sc. /B.A. /B.Com. - Semester IV (w.e.f 2017-2018)
Course: ANALYTICAL SKILLS

Total Hrs. of Teaching-Learning: 30@ 2 hr/Week

Total credits: 03

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Objectives:

- To impart the knowledge of arithmetic and reasoning.
 - To built up confidence for writing competitive examinations.
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UNIT – 1

Data Analysis:-The data given in a Table – Graph - Bar Diagram - Pie Chart - Venn diagram or a passage is to be analyzed and the questions pertaining to the data are to be answered. (6 hrs)

UNIT – 2

Sequence and Series:- Analogies of numbers and alphabets - completion of blank spaces following the pattern in A:b::C: d relationship - odd thing out - Missing number in a sequence or a series. (6 hrs)

UNIT - 3

Arithmetic ability:-Algebraic operations- BODMAS – Fractions - Divisibility rules- LCM&GCD (HCF) - Date, Time and Arrangement Problems; Calendar problems, Clock problems, Blood Relationship. (6 hrs)

UNIT - 4

Quantitative aptitude:- Averages - Ration and proportion - Problems on ages - Time-distance – speed. (6 hrs)

UNIT – 5

Business computations:- Percentages - Profit &loss-Partnership - simple and compound interest.

(6 hrs)

Reference Books:

1. Quantitative Aptitude for Competitive Examination by R S Agrawal, S.Chand publications

BLUE PRINT FOR QUESTION PAPER PATTERN
SEMESTER-IV
ANALYTICAL SKILLS

UNIT	TOPIC	V.S.A.Q Multiple choice (1 Mark)	S.A.Q (3 Marks)	E.Q (5 Marks)	
1	Data Analysis	-	-	2	10
2	Sequence and Series	10	-	-	10
3	Arithmetic ability	-	3	2	19
4	Quantitative aptitude	-	2	2	16
5	Business computations	-	3	2	19
TOTAL MARKS					74

V.S.A.Q = Very short answer questions (1 mark)

S.A.Q = Short answer questions (3 marks)

E.Q = Essay questions (5 marks)

Very short answer questions : 10X 1 = 10

Short answer questions : 05X 3 = 15

Essay questions : 05X 5 = 25

Total Marks = 50

SECTION - B

Answer any FIVE of the following questions. Each question carries 3 marks. 5 x 3 = 15M

11. Find the value of $\frac{(6+6+6+6)\div 6}{4+4+4+4\div 4}$
12. If the number 517*324 is completely divisible by 3, then the smallest whole number in Place of * will be.
13. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then, how is A related to D?
14. If $A : B = 2 : 3$ $B : C = 4 : 7$ then find $A : B : C = ?$
15. The average of four consecutive even numbers is 27. Find the largest of these Numbers.
16. What is 25% of 25% equal to?
17. A man buys a cycle for Rs.1400 and sells it at a loss of 15%. What is the selling price of the cycle?
18. Find the simple interest on Rs 7500 in 4 years at 15%

SECTION - C

Answer any FIVE of the following questions. Each question carries 5 mark 5 x 5 = 25 M

19. DIRECTIONS: Study the table carefully to answer the questions that follow:

Maximum and minimum Temperature(in degree Celsius) recorded on first day of each month for five different cities.

Month	Temperature									
	Bhuj		Sydney		Ontario		Kabul		Beijing	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1 st sep	24	14	12	2	5	1	34	23	12	9
1 st oct	35	21	5	-1	15	6	37	30	9	3
1 st nov	19	8	11	3	4	0	45	36	15	1
1 st dec	9	2	-5	-9	-11	-7	31	23	2	-3
1 st jan	-4	-7	-11	-13	-14	-19	20	11	5	-13

1 .What is the difference between the max temperature of Ontario on 1st Nov and the min temperature of Bhuj on 1st Jan?

- (1) 3 °C (2) 18 °C (3) 15 °C (4) 9 °C (5) 11 °C

2 . In which month respectively the max temperature of Kabul is 2nd highest and min temperature of Sydney is highest ?

- (1) 1stoct& 1stjan (2) 1stoct& 1stnov (3) 1stdec& 1stjan (4) 1stsept& 1stjan
 (5) 1stdec& 1st Sept

3. In which month on 1st day is the difference between the max temperature & min temperature of Bhuj second highest ?

- (1) 1stsept (2) 1stoct (3) 1stnov (4) 1stdec (5) 1stjan

4. What is the averagemaximum temperature of Beijing over all the months together.

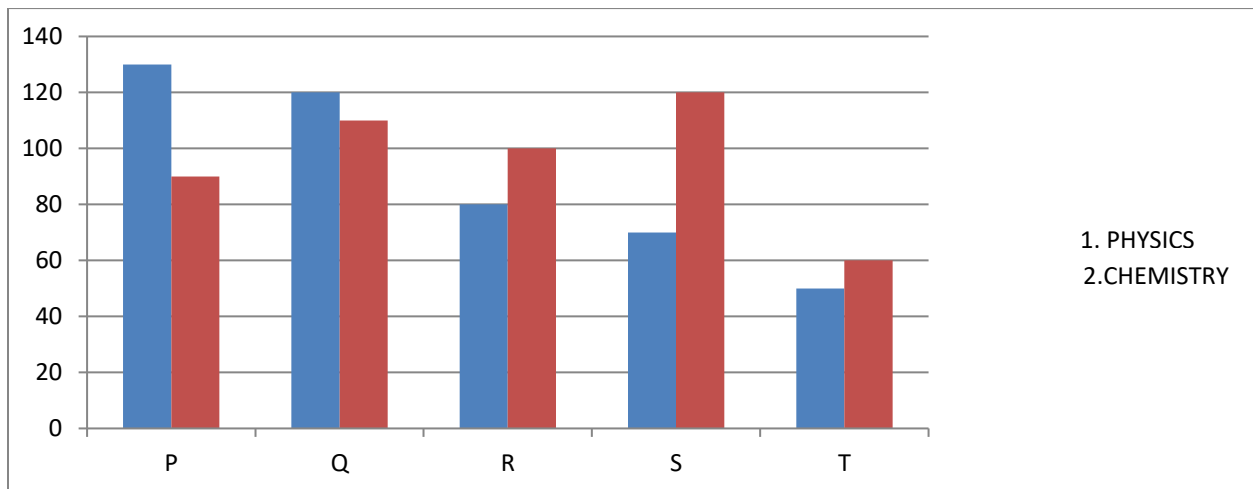
- (1) 8.4°C (2) 9.6°C (3) 7.6°C (4) 9.2°C (5) 8.6°C

5. What is the respective ratio between the min temperature of Beijing on 1stsept& the max temperature of Ontario on 1stoct ?

- (1) 3:4 (2) 3:5 (3) 4:5 (4) 1:5 (5) 1:4

20. Study the following bar graphs carefully to answer these questions

Marks obtained by 5 students in physics & chemistry



1. Marks obtained by S in chemistry is what percent of the total marks obtained by all the students in chemistry ?

- (1)25 (2)28.5 (3)35 (4)31.5 (5)22

2. If the marks obtained by T in physics were increased by 14% of the original marks, what would be his new approximate % in physics if the max marks in physics were 140?

(1)57 (2)32 (3)38 (4)48 (5)41

3. Fill in the blank space in order to make the sentence correct as per the given information. Total marks obtained by T in both the subjects together is more than the marks obtained by
- (1) Q in chemistry (2) R in physics (3) S in chemistry (4) P in physics
(5) R in both the subjects together
4. What is the respective ratio between the total obtained by P in physics & chemistry together to the total marks obtained by T in physics & chemistry together ?
- (1) 3:2 (2) 4:3 (3) 5:3 (4) 2:1 (5) None of these
5. What is the respective ratio between the total marks obtained by Q & S together in chemistry to the total marks obtained by P & R together in physics?
- (1)23:25 (2)23:21 (3)17:19 (4)17:23 (5) none of these
21. The H.C.F. of two numbers is 11 and their L.C.M. is 693. If one of the numbers is 77, then Find the other
22. A clock is set right at 8 a.m. The clock gains 10 minutes in 24 hours will be the true time when the clock indicates 1 p.m. on the following day?
23. If $\frac{1}{5} : \frac{1}{x} :: \frac{1}{x} : \frac{1}{125}$, then the value of x is?
24. How many minutes does Aditya take to cover a distance of 400m, if he runs at a speed of 20 km/hr?
25. Sanjay and Raju started a business and invested Rs.20000 and Rs.25000 respectively. After 4 months Raju left and Naresh joined by investing Rs.15000. At the end of the year there was a profit of Rs.4600. what is the share of Naresh?
26. Meena purchased two fans each at Rs.1200. She sold one fan at the loss of 5% and other at the gain 10%. Find the total gain or loss percent?

P.R.GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA
DEPARTMENT OF MATHEMATICS AND STATISTICS
QUESTION BANK FOR ANALYTICAL SKILLS
UNIT-1 DATA ANALYSIS

TABLE & GRAPHS

1. DIRECTIONS: Study the table carefully to answer the questions that follow:

Maximum and minimum Temperature(in degree Celsius) recorded on first day of each month for five different cities.

Month	Temperature									
	Bhuj		Sydney		Ontario		Kabul		Beijing	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1 st sep	24	14	12	2	5	1	34	23	12	9
1 st oct	35	21	5	-1	15	6	37	30	9	3
1 st nov	19	8	11	3	4	0	45	36	15	1
1 st dec	9	2	-5	-9	-11	-7	31	23	2	-3
1 st jan	-4	-7	-11	-13	-14	-19	20	11	5	-13

Q:1 What is the difference between the max temperature of Ontario on 1stnov and the min temperature of Bhuj on 1stjan?

- (1) 3 °C (2) 18 °C (3) 15 °C (4) 9 °C (5) 11 °C

ANS: (5) Required difference = $4 - (-7) = 4 + 7 = 11$

2: In which month respectively the max temperature of Kabul is 2nd highest and min temperature of Sydney is highest ?

- (2) 1stoct & 1stjan (2) 1stoct & 1stnov (3) 1stdec & 1stjan (4) 1stsept & 1stjan
 (5) 1stdec & 1st Sept

ANS: (1)

3: In which month on 1st day is the difference between the max temperature & min temperature of Bhuj second highest ?

- (1) 1stsept (2) 1stoct (3) 1stnov (4) 1stdec (5) 1stjan

ANS: (3) Temperature difference of Bhuj :

1st Sept 24-14=10°C, 1st Nov 19-8=11°C, 1st Oct 35-21=14°C, 1st Dec 9-2=7°C

1st Jan -4+7=3°C

4. What is the average maximum temperature of Beijing over all the months together.

- (1) 8.4°C (2) 9.6°C (3) 7.6°C (4) 9.2°C (5) 8.6°C

ANS: (5) Max temperature = $\frac{12+9+15+2+5}{5} = 43/5 = 8.6^\circ\text{C}$

5. What is the respective ratio between the min temperature of Beijing on 1stsept & the max temperature of Ontario on 1stoct ?

- (1) 3:4 (2) 3:5 (3) 4:5 (4) 1:5 (5) 1:4

ANS: required ratio = $9:15 = 3:5$

2. Study the following table carefully answer the questions percentage of marks obtained by 6 students in 6 different subjects

Sub/student	History (out of 50)	Geography (out of 50)	Maths(out of 150)	Science(out of 100)	English (out of 75)	Hindi (out of 75)
Amit	76	85	69	73	64	88
Bharat	84	80	85	78	73	92
Umesh	82	67	92	87	69	76
Nikhil	73	72	78	69	58	83
Pratiksha	68	79	64	91	66	65
Ritesh	79	87	88	93	82	72

1. What is the approximately the integral % of marks obtained by umesh in all the subjects ?

- (1) 80% (2) 84% (3) 86% (4) 78% (5) 77%

ANS: (1) total marks obtained by Umesh

$$= 41 + 33.5 + 92/100 * 150 + 87 + 69/100 * 75 + 76/100 * 5$$

$$= 41 + 33.5 + 138 + 87 + 51.75 + 57 = 408.25$$

$$\text{Required \%} = 408/500 * 100 = 80\%$$

2. What is the avg % of marks obtained by all the students in hindi (approximated to two places of decimal)

- (1) 77.45% (2) 79.33% (3) 75.52% (4) 73.52% (5) none of these

ANS: (2) required avg of % in hindi = $\frac{88+92+76+83+65+72}{6} = 476/6 = 79.33\%$

3. What is the avg marks of all the students in Mathematics ?

- (1) 128 (2) 112 (3) 118 (4) 138 (5) 144

ANS: (3) avg mark in mathematics = 118

$$\frac{(69+85+92+78+64+88)}{6} = 118$$

4. What is the avg marks obtained by all the students in geography ?
 (1) 38.26 (2) 37.26 (3) 37.16 (4) 39.16 (5) None of these

ANS: (4) Average marks in geography

$$=50(85+80+67+72+79+87)/6*1/100=50*470/6*1/100=39.16$$

5. What are the total marks obtained by pratiksha in all the subjects taken together ?
 (1) 401.75 (2) 410.75 (3) 402.75 (4) 420.75 (5) none of these

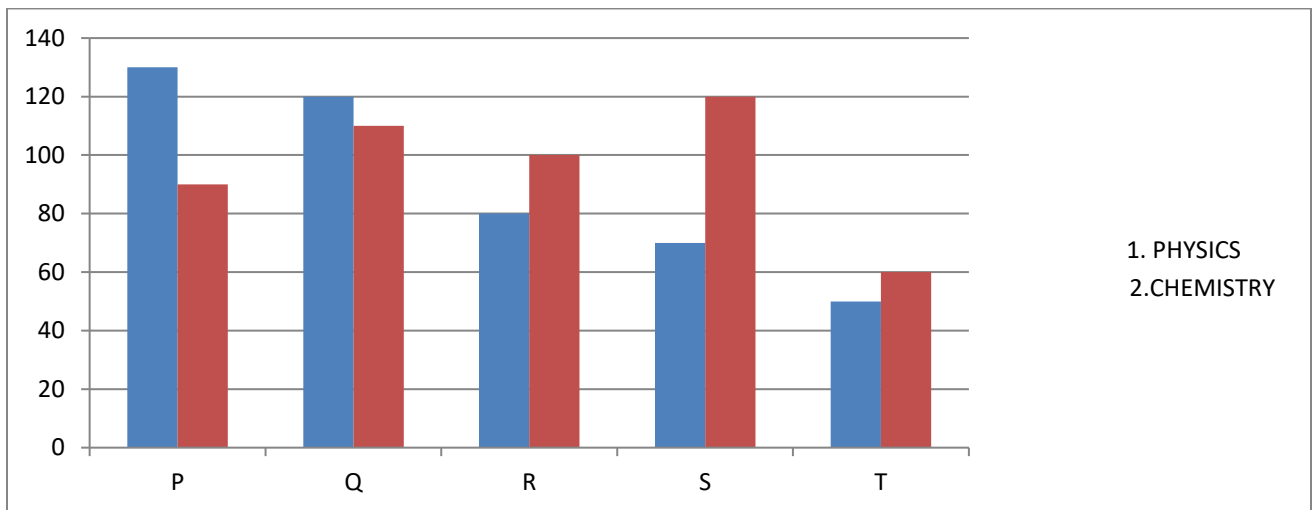
ANS: (5) marks obtained by

$$\begin{aligned} \text{Ritesh} &= 50*68/100 + 50*79/100 + 150*64/100 + 91 + 75*66/100 + 50*86/100 + 75*65/100 \\ &= 34 + 39.5 + 96 + 91 + 49.5 + 48.75 = 358.75 \end{aligned}$$

BAR GRAPHS

1. Study the following bar graphs carefully to answer these questions

Marks obtained by 5 students in physics & chemistry



1. Marks obtained by S in chemistry is what percent of the total marks obtained by all the students in chemistry ?

- (1) 25 (2) 28.5 (3) 35 (4) 31.5 (5) 22

ANS: (1) required % = $\frac{120}{90+110+100+120+60} * 100 = \frac{120}{480} * 100 = 25\%$

2. If the marks obtained by T in physics were increased by 14% of the original marks, what would be his new approximate % in physics if the max marks in physics were 140?

- (1) 57 (2) 32 (3) 38 (4) 48 (5) 41

ANS: (5) increase in marks in physics of $T=50*1.14=57$

Required % = $57/140*100=40.7=41$

3. What is the respective ratio between the total obtained by P in physics & chemistry together to the total marks obtained by T in physics & chemistry together ?

(1) 3:2 (2) 4:3 (3) 5:3 (4) 2:1 (5) None of these

ANS: (4) required ratio = $130+90/60+50=220/110=2:1$

4. What is the respective ratio between the total marks obtained by Q & S together in chemistry to the total marks obtained by P & R together in physics?

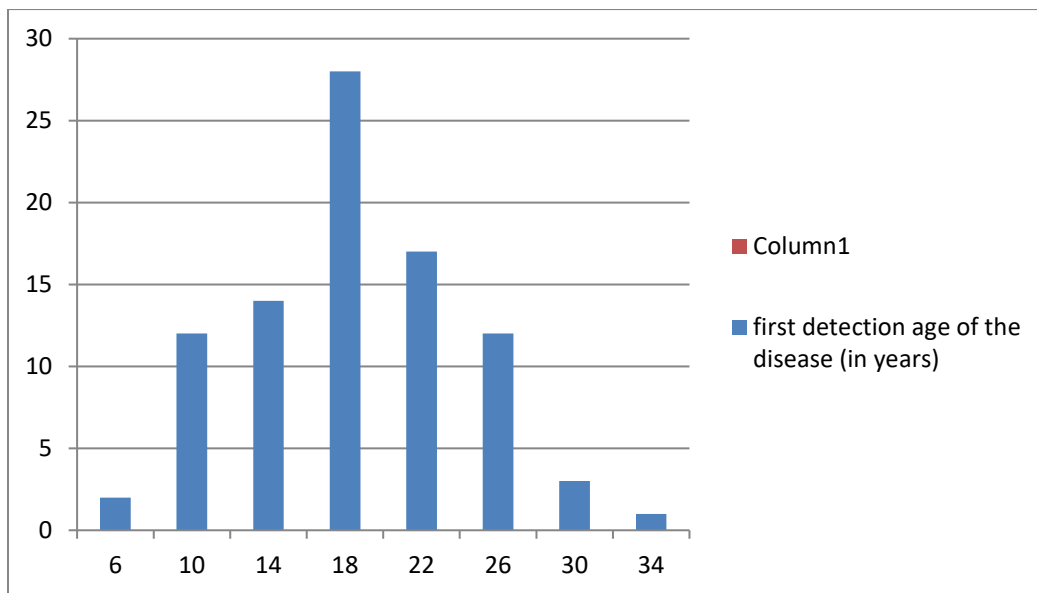
(1) 23:25 (2) 23:21 (3) 17:19 (4) 17:23 (5) none of these

ANS: (2) marks obtained by Q & S in chemistry = $110+120=230$

Marks obtained by P & R in physics = $130+80=210$

Required ratio = $230/210=23:21$

2 Read the following graph and answer the questions.



1. The avg age of first detection of the disease (in years) is

(1) 18.25 (2) 19 (3) 20 (4) 18.45 (5) none of these

ANS: (3)

2. Max number of patients are susceptible to the disease at the age (in years) of

(1) 12 (2) 18.45 (3) 18 (4) 20 (5) none of these

ANS: (3) it is clear from the graph

3. How many patients, below 20 years of age, were suffering from the disease ?

- (1) 54 (2)16 (3)25 (4)72 (5) none of these

ANS: (1) required number of patients= $2+12+15+25=54$

4. The % of patients, suffering from the disease having ages, above 20 years, is approximately

- (1) 67.04 (2)18.18 (3)43.86 (4)38.64 (5) none of these

ANS: (4) required %= $\frac{18+12+3+1}{88} \times 100=38.64\%$

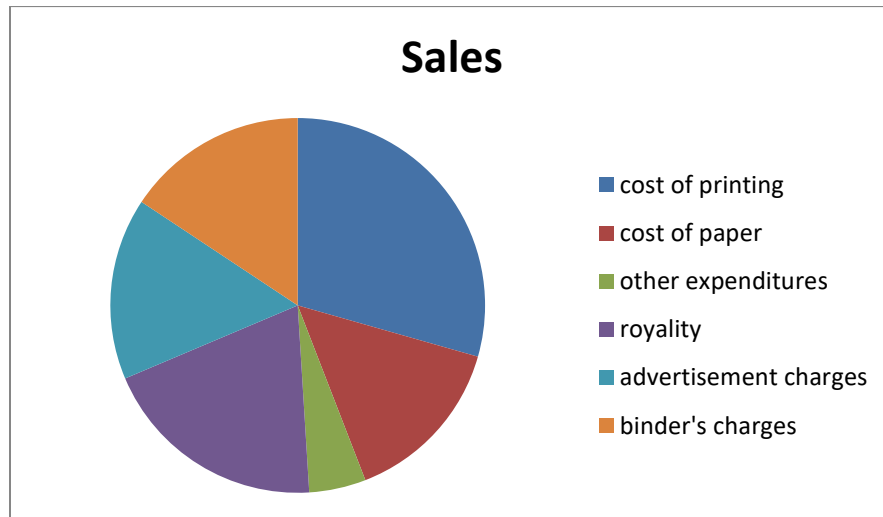
5. The number of patients surveyed was

- (1) 8 (2)1624 (3)25 (4)18 (5) none of these

ANS: (1)

PIE DIAGRAM

1.Directions : the pie-chart given below shows the expenditures incurred in bringing out a book by a publisher. Study the chart & answer the questions.



1. If 3,000 copies are published, other expenditures amount to 12,000/- and publisher's profit is 25%, then marked price of each copy is

- (1) 100/- (2) 125/- (3) 80/- (4)95/- (5) none of these

ANS: (1) other expenditure= $5\%=12,000/-$

Total cost= 20×12000

Total selling price= $1.25 \times 20 \times 12000$

Marked price per copy= $1.25 \times 20 \times 12000 / 3000 = 100/-$

2. Advertisement charges are less than royalty by

- (1) 20% (2) 25% (3) 10% (4) 15% (5) none of these

ANS: (1) required % = $20 - 16 / 20 \times 100 = 20\%$

3. If the cost of printing is 19,500/-, the royalty is

- (1) 10,400/- (2) 13,000/- (3) 9,100/- (4) 10,000/- (5) none of these

ANS: (2) cost of royalty = $19500 / 3 \times 2 = 13000/-$

4. The central angle of the sector for the cost of paper is

- (1) 57.6° (2) 72° (3) 50.4° (4) 54° (5) none of these

ANS: (4) required angle = $15 / 100 \times 360^\circ = 54^\circ$

5. If the cost of paper is 5000/-, then total cost excluding advertisement charges and royalty is

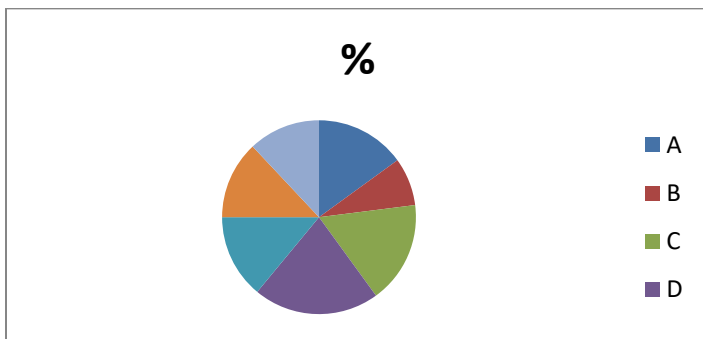
- (1) $24,666 \times 2/3$ /- (2) 36,000/- (3) 12,000/- (4) 16,667/- (5) none of these

ANS: (5) required cost = $5000 / 15 \times 64 = 64000 / 3 = \text{Rs. } 21333 \times 1/3$

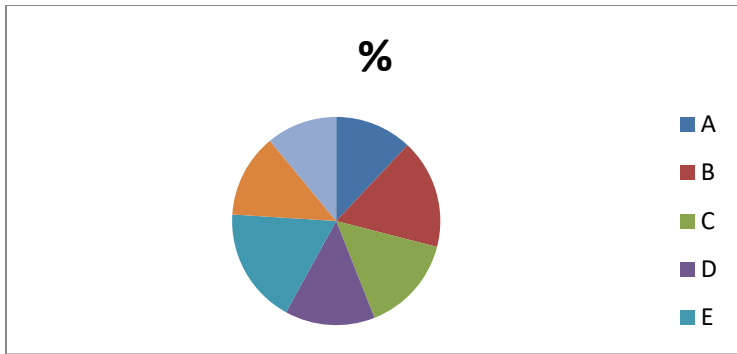
2. Percentage wise distribution of students studying in arts and commerce in 7 different institutions

Different institutions- A, B, C, D, E, F & G

Total number of students studying arts=3800.



Total number of students studying commerce=4200



1. What is the total number of students studying arts in institutes A & G to gether ?

- (1)1026 (2)1126 (3)226 (4)1206 (5)1306

ANS: (1) required answer= $3800 \times 27/100 = 1026$

2. How many students from institute B study arts &commerce ?

- (1)1180 (2)1108 (3)1018 (4)1208 (5)1408

ANS: required answer= $3800 \times 8/100 + 4200 \times 17/100 = 304 + 714 = 1018$

3. The respective ratio between the number of students studying arts & commerce from institute E

- (1)27:14 (2)19:27 (3)19:16 (4)19:28 (5)none of these

ANS: (2) required ratio= $3800 \times 14/100 : 4200 \times 18/100 = 38 \times 14 : 42 \times 18 = 19:27$

4. The ratio between the number of students studying arts from institute E to that of students studying commerce from institute D is

- (1)12:17 (2)12:7 (3)19:21 (4)17:19 (5) none of these

ANS: (3) required ratio= $3800 \times 14/100 : 4200 \times 14/100 = 19:21$

5. How many students from institutions B & D together study commerce ?

- (1) 1320 (2)1302 (3)1202 (4)1220 (5) none of these

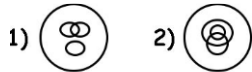
ANS: (2) required answer= $4200 \times 17/100 + 4200 \times 14/100 = 714 + 588 = 1302$

VENN DIAGRAM

1. Which of the following Venn- diagram correctly illustrates the relation ship among the classes : *Tennis fans*, *Cricket players*, *Students*



2. In a dinner party both fish and meat were served. Some took only fish and Some only meat. There were some vegetarians who did not accept either. The rest accepted both fish and meat. Which of the following Venn-diagrams correctly reflects this situation?



UNIT-2

I In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.

1. 1,9,25,49,?,121

a)64 b)81 c)91 d)100 ()

2. 11,13,17,19,23,25,?

a)26 b)27 c)29 d)37 ()

3. 6,11,21,36,56,?

a)42 b)51 c)81 d)91 ()

4. 10,18,28,40,54,70,?

a)85 b)86 c)87 d)88 ()

5. 22,24,28,?,52,84

a)36 b)38 c)42 d)46 ()

6. 28,33,31,36,?,39

a)32 b)34 c)38 d)40 ()

7. 6,17,39,72,?

a)83 b)94 c)116 d)127 ()

8. 325,259,204,160,127,105,?

a)94 b)96 c)98 d)100 ()

II In each of the following questions, one term in the number series is wrong. Find out the wrong term

1. 3,10,27,4,16,64,5,25,105

a)3 b)4 c)10 d)27 ()

2. 8,13,21,32,47,63,83

a)13 b)21 c)32 d)47 ()

3. 105,85,60,30,0,-45,-90

a)105 b)60 c)0 d)-45 ()

4. 325,259,202,160,127,105,94

a)94 b)127 c)202 d)259 ()

2. 3F,6G, 11I, 18L, ?

a)21O b)25N c)25P d)27P e) 27Q ()

3. W-144, ?, S-100, Q-81, O-64

a)U-121 b) U-122 c)V-121 d)V-128 ()

4. 2Z5,7Y7,14X9,23W11, 34V13, ?

a)27U24 b)45U15 c)47U15 d)47V14 ()

5. N5V, K7T, ? ,E14P, B19N

a)H9R b)H10Q c)H10R d)I10R ()

6. find the term which does not fit into the series

1CV,5FU,9IT,15LS,17OR

a)5FU b)15LS c)9IT d)17OR ()

7.Q1F, S2E,U6D, W21C, ?

a)Y44B b)Y66B c)Y88B d)Z88B ()

V In each of the following letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.

1. _ _ aba _ _ ba _ ab

a)abbba b)abbab c)baabb d)bbaba ()

2. ab _ _ baa _ _ ab _

a)aaaaa b)aabaa c)aabab d)baabb ()

3. a _ ba _ b _ b _ a _ b

a)abaab b)abbab c)aabba d)bbabb ()

4. _ op _ mo _ n _ _ pnmop _

a)mnpmon b)mpnnop c)mnompn d)mnpomn ()

5. _ nmmn _ mmnn _ mnnm _

a)nmmn b)mnnm c)nnmm d)nmnm ()

6. ba_ cb _ b_ bab _

a)acbb b)back c)bcaa d)cabb ()

7. _ aa _ ba _ bb _ ab _ aab

a)aaabb b)babab c)bbaab d)bbbba ()

8. ab _ d _ aaba _ na _ badna _ b

a)andaa b)babda c)badna d)dbanb ()

VI Find out the relationship between the first two words and choose the word from the given alternatives.

1. Anaemia : Blood :: Anarchy : ?

- a) Lawlessness b) Government c) Monarchy d) Disorder ()

2. Botany : Plants :: Entomology : ?

- a) Snakes b) Insects c) Birds d) Germs ()

3. Menu : Food :: Catalogue :

- a) Rack b) Newspaper c) Library d) Books ()

4. Pulp : Paper :: Hemp : ?

- a) Basket b) Yarn c) Rope d) Cotton ()

5. Moon : Satellite :: Earth : ?

- a) Sun b) Planet c) Solar System d) Asteroid ()

6. Coconut : Shell :: Letter : ?

- a) Letter – Box b) Stamp c) Mail d) Envelope ()

7. Assam : Bihu :: Kerala : ?

- a) Kathakali b) Kuchipudi c) Kathak d) Bharanatyam ()

8. Man : Machine :: Master : ?

- a) Worker b) Manager c) House d) Slave ()

VII 1. Necklace is related to Jewellery in the same way as Shirt is related to ?

- a) Thread b) Cloth c) Cotton d) Apparel ()

2. Needle is related to Thread in the same way as Pen is related to ?

- a) Ink b) Cap c) Paper d) Word e) Stationery ()

3. Drama is related to Director in the same way as Magazine is related to ?

- a) Story b) Editor c) Reader d) Printer ()

4. Wax is related to Grease in the same way as Milk is related to ?

- a) Drink b) Gee c) Curd d) Protein ()

5. Impossible is related to Feasible in the same way as Theoretical is related to ?

- a) Radical b) Usable c) Practical d) Workable ()

6. Cyclone is related to Anticyclone in the same way as Flood is related to ?

- a) Devastation b) Havoc c) River d) Drought ()

7. Earth is related to Axis in the same way as Wheel is related to ?

a) Tyre b) Car c) Road d) Hub ()

8. Income is related to Profit in the same way as Expenditure is related to ?

a) Balance b) Loss c) Sale d) Receipt e) Surplus ()

VII Find out the relationship between the first two numbers and choose the number from the given alternatives.

1. 18 : 30 :: 36 : ?

a) 54 b) 62 c) 64 d) 66 ()

2. 6 : 222 :: 7 : ?

a) 210 b) 336 c) 343 d) 350 ()

3. 14 : 9 :: 26 : ?

a) 12 b) 13 c) 15 d) 31 ()

4. 8 : 28 :: 27 : ?

a) 55 b) 63 c) 64 d) 65 ()

5. 68 : 130 :: ? : 350

a) 210 b) 216 c) 222 d) 240 ()

6. 42 : 56 :: 72 : ?

a) 81 b) 90 c) 92 d) 100 ()

7. 9 : 80 :: 100 : ?

a) 901 b) 1009 c) 9889 d) 9999 ()

8. 149 : 238 :: 159 : ?

a) 169 b) 248 c) 261 d) 268 ()

UNIT- 3

BODMASRULE AND SIMPLIFICATION

1. $12573+43495+23472=?$
2. $(8\div 88)\times 8888088=?$
3. The value of $1001\div 11$ of 13 is?
4. $20\frac{1}{2} + 30\frac{1}{3} - 15\frac{1}{6}=?$
5. Simplify $2-[2 - \{2 - 2(2 + 2)\}]=?$
6. Simplify $18-[5 - \{6 + 2(7 - 8 - 5)\}]$.
7. $(-5)(4)(2)(-\frac{1}{2})(\frac{3}{4})=?$
8. Find the value of $\frac{(6+6+6+6)\div 6}{4+4+4+4\div 4}$
9. What is the value of $\frac{(P+Q)}{(P-Q)}$ if $\frac{P}{Q}=7$?

DECIMAL FRACTIONS

1. If $204 \div 12.75 = 16$, then $2.04 \div 1.275 = ?$
2. $0.03 \times 0.0124 = ?$
3. $7212 + 15.231 - ? = 6879$
4. $4211.01 + 22.261 - ? = 2645.759$
5. $0.004 \times 0.5 = ?$
6. $24.39 + 562.093 + 35.96 = ?$
7. $926 + 9.026 + 0.926 + 9.0026 = ?$
8. The expression $(12.86 \times 12.86 + 12.86 \times p + 0.14 \times 0.14)$ will be a perfect square for p equal to

DIVISIBILITY RULE

1. If the the number $5*2$ is divisible by 6 then *?
2. If the number $517*324$ is completely divisible by 3 , then the smallest whole number in Place of * will be.
3. If the number $481*673$ is completely divisible by 9, then the smallest whole number in Place of * will be.
4. If the number $97215*6$ is completely divisible by 11, then the smallest whole number in Place of * will be.
5. If the number $91876*2$ is completely divisible by 8, then the smallest whole number in Place of * will be.
7. Find the least value of * for which $7*5462$ is divisible by 9
8. Find the least value of * for which $4832*18$ is divisible by 11.

LCM and HCF:

1. What is the lowest common multiple of 12, 36 and 20?
2. Find the H.C.F of 108,288and 360.
3. Find the greatest common divisor of 24 and 16

4. Two numbers are in the ratio 2 : 3. If their L.C.M. is 48. what is sum of the numbers?
5. The ratio of two numbers is 4 : 5. If the HCF of these numbers is 6, what is their LCM?
6. The H.C.F. of two numbers is 5 and their L.C.M. is 150. If one of the numbers is 25, then the other is:
7. The H.C.F. of two numbers is 11 and their L.C.M. is 693. If one of the numbers is 77, then find the other.
8. Find L.C.M of $\frac{2}{3}$, $\frac{8}{9}$, $\frac{16}{81}$ and $\frac{10}{27}$

BLOOD REALTIONS

1. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then, how is A related to D?
2. P is the brother of Q and R. S is R's mother. T is P's father. Which of the following statements cannot be definitely true?
3. Pointing out to a lady, a girl said, "She is the daughter-in-law of the grandmother of my father's only son." How is the lady related to the girl ?
4. There are six persons A, B, C, D, E and F. C is the sister of F. B is the brother of E's husband. D is the father of A and grandfather of F. There are two fathers, three brothers and a mother in the group. Who is the mother ?
5. Pointing to a person, a man said to a woman, "His mother is the only daughter of your father." How was the woman related to the person ?
6. A girl introduced a boy as the son of the daughter of the father of her uncle. What is the relation between the boy and the girl ?
7. In a family, there are six members A, B, C, D, E and F. A and B are a married couple, A being the male member. D is the only son of C, who is the brother of A. E is the sister of D. B is the daughter-in-law of F, whose husband has died. How is E related to C ?
8. A woman introduces a man as the son of the brother of her mother. How is the man, related to the woman ?

CALENDAR

1. What was the day on 15th august 1947 ?
2. Today is Monday. After 61 days, it will be?
3. The last day of a century cannot be?
4. What was the day of the week on, 16th July, 1776?
5. It was Sunday on Jan 1, 2006. What was the day of the week Jan 1, 2010?
6. What was the day of the week on 28th May, 2006?
7. What will be the day of the week 15th August, 2010?

8. If 6th March, 2005 is Monday, what was the day of the week on 6th March, 2004?

CLOCKS

1. A clock is set right at 8 a.m. The clock gains 10 minutes in 24 hours will be the true time when the clock indicates 1 p.m. on the following day?
2. At what time between 4 and 5 o'clock will the hands of a watch point in opposite directions?
3. An accurate clock shows 8 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?
4. A clock is set right at 5 a.m. The clock loses 16 minutes in 24 hours. What will be the true time when the clock indicates 10 p.m. on 4th day?
5. At what time between 5 and 6 o'clock are the hands of a clock 3 minutes apart ?
6. Find the angle between the hour hand and the minute hand of a clock when the time is 3.25 ?
7. At what angle are the hands of a clock inclined at 15 minutes past 5?
8. At what time between 2 and 3 o'clock will the hands of a clock be together?

Unit -IV

AVERAGE:

1. The average of 5, 10,15,20,25?
2. Find the average of first 40 natural numbers.
3. The average of four consecutive even numbers is 27. Find the largest of these numbers
4. The average of four consecutive odd numbers is 61 what is the difference between the highest and lowest numbers?
5. The average of 5 numbers is 15 and the average of first three numbers is 10. what is the average of last two numbers?
6. The average age of 15 students of a class is 15 years. Out of these , the average age of 5 student is 14 year and that of the other 9students is 16 years. The age of the 15th student is
7. The average of 5 numbers is 15 and the average of first three numbers is 10 and the average of last three numbers is 20. Then find the middle number?
8. The average of five numbers is 27. If one number is excluded, the average becomes 25.the excluded number is:

RATION & PROPORTION:

1. If $A : B = 2 : 3$ $B : C = 4 : 7$ then find $A : B : C = ?$
2. If $A : B = 2 : 3$ $B : C = 3 : 4$ then find $A : B : C = ?$
3. If $a:b=2:3$ and $b:c=3:5$ then find $a:c=?$
4. If $2A=3B$ and $4B=5C$, then $A:C$ is
5. Find the mean proportional of 9 and 25
6. Find the third proportional to 16 and 4
7. If $\frac{A}{3} = \frac{B}{4} = \frac{c}{5}$, then $A:B:C$ is
8. If $\frac{1}{5} : \frac{1}{x} :: \frac{1}{x} : \frac{1}{125}$, then the value of x is

PROBLEM ON AGES:

1. A father said his son , " I was as old as you are at present at the time of your birth. " If the father age is 38 now, the son age 5 years back was :
2. 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 ?
3. In 10 years, A will be twice as old as B was 10 years ago. If A is now 9 years older than B, the present age of B is :
4. The age of a man is 4 times of his son. Five years ago, the man was nine times old as his son was at that time. The present age of man is?
5. The sum of the present ages of a father and his son is 60 years. five years ago, father's age was four times the age of the son. so now the son's age will be:
6. Six years ago Anita was P times as old as Ben was. If Anita is now 17 years old, how old is Ben now in terms of P ?
7. Sachin is younger than Rahul by 7 years. If the ratio of their ages is 7:9. find the age

of Sachin.

8. The ratio of the present ages of P and Q is 3 : 4. Five years ago, the ratio of their ages was 5 : 7. Find their present ages.

TIMES AND DISTANCE-SPEED

1. An athlete runs 200 metres race in 24 seconds. His speed is?
2. How many minutes does Aditya take to cover a distance of 400m, if he runs at a speed of 20 km/hr?
3. A car is running at speed of 108kmph. What distance will it cover in 15 seconds?
4. A cyclist covers a distance of 750 m in 2 min 30 sec. What is the speed in km/hr of the cyclist?
5. Peter can cover a certain distance in 1hr.24min. by covering two third of the distance at 4kmph and the rest at 5kmph. Find the total distance.
6. A and B are two stations 390km apart. A train starts form A at 10 a.m. and travels towards B at 65kmph. Another train starts form B at 11a.m.and travels towards A at 35 kmph. At what time do they meet?

UNIT-V

PERCENTAGES

1. $8\frac{1}{3}\%$ expressed as fraction is ?
2. 2 is what percent of 50?
3. What percent of $\frac{1}{2}$ is $\frac{1}{3}$?
4. X% of Y is Y% of ?
5. What is 25% of 25% equal to?
6. 30% of 140 = ? % of 840
7. 5 % of (50% of Rs 300) is?
8. 270 candidates appeared in an examination, of which 252 passed. The pass percentage is.

PROFIT AND LOSS

1. A man buys a cycle for Rs.1400 and sells it at a loss of 15%. What is the selling price of the cycle?
2. The CP of 21 articles is equal to SP of 18articles. Find the gain (or) loss percent
3. A man buys on article for Rs 27.50 and sells it for Rs 28.60. find his gain percent ?
4. An article is bought for RS. 450 and sold for Rs.400 .what is the loss%?
5. When a commodity is sold for Rs. 34.80 there is a loss of 25%, what is the cost price of commodity?
6. An article is sold at certain price. By selling it at $\frac{2}{3}$ of that price one loses 10%. Find the gain percent at original price..
7. Meena purchased two fans each at Rs.1200. She sold one fan at the loss of 5% and other at the gain 10%.Find the total gain or loss percent?
8. Three partners A, B, C starts a business. Twice the investment of A is equal to thrice the capital of B and the capital of B is four times the capital of C. finds the share of each out of a profit of Rs.297000?

PARTNERSHIP

1. Dhilip and Manohar started a business by investing Rs.100000 and Rs.150000 respectively. Find the share of each out of a profit of Rs.24000?
2. Sanjay and Raju started a business and invested Rs.20000 and Rs.25000 respectively. After 4 months Raju left and Naresh joined by investing Rs.15000.At the end of the year there was a profit of Rs.4600. what is the share of Naresh?
3. Three partners A, B, C starts a business. Twice the investment of A is equal to thrice the capital of B and the capital of B is four times the capital of C. finds the share of each out of a profit of Rs.297000?
4. A, B, C hire meadow for Rs.2934.60. A puts in 10 oxen for 20 days; B 30 oxen for 8 days and C 16 oxen for 9 days. Find the rent paid by each?

5. A and B started a business in partnership by investing Rs.8000 and Rs.7000 respectively. If at the end of a year, a profit of Rs.22, 500 was earned. What is the share of A?
6. In partnership business, A has invested Rs.4200 while B has invested a certain amount. If out of the overall profit of Rs.600, A's share is Rs.320, what is the amount invested by B (in Rs)?
7. Chetan and Suman started a business in partnership by investing Rs.15000 and Rs.18000 respectively. If at the end of the year, Chetan's share in the profit was Rs.1200, what was the amount of total profit?
8. In a partnership business, A has invested 2000 for 5months, while B has invested Rs.3500 for a certain period. If out of the total annual profit of Rs.1440, B's share has been Rs.840. For how many months has he kept his investment in the business?

SIMPLE AND COMPOUND INTEREST

1. Find the simple interest on Rs 7500 in 4 years at 15% .
2. The simple interest on Rs. 6400 at $12\frac{1}{2}$ % per annum is Rs.2000, find the period
3. On what sum of money will the simple interest be Rs.2000 in 5 years 8% per annum?
4. A sum of Rs 1600 gives a simple interest of Rs252 in 2years and 4months. The rate of interest per annum is ?
5. Find the compound interest on Rs 8000 for 3years at 5% per annum
6. A sum of Rs.3000 is lent for 3 years at 10% p.a compound interest. Find the amount
7. Find the amount on Rs 7500 at 4% per annum for 2 years compounded annually.
8. Find the compound interest on Rs.15,625 for 9 months at 16% per annum compounded Quarterly.