

|                                                                                   |                                                             |                                                                      |   |   |   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------|---|---|---|
|  | <b>P.R.Government College<br/>(Autonomous)<br/>KAKINADA</b> | <b>Program&amp;Semester</b><br><br>FOR ALL MAJOR<br>SUBJECTS (I Sem) |   |   |   |
| CourseCode                                                                        | <b>TITLE OF THE COURSE</b><br><br><b>Analytical Skills</b>  |                                                                      |   |   |   |
| Teaching                                                                          | HoursAllocated:30( <b>Theory</b> )                          | L                                                                    | T | P | C |
| Pre-requisites:                                                                   | Basic Mathematics Knowledge                                 | 2                                                                    | - | - | 2 |

### Course Objectives:

Intended to inculcate quantitative analytical skills and reasoning as an inherent ability in students.

### Course Outcomes:

On Completion of the course, the students will be able to-

|     |                                                                                                                                                                               |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Understand the basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated skills. |
| CO2 | Acquire competency in the use of verbal reasoning.                                                                                                                            |
| CO3 | Apply the skills and competencies acquired in the related areas.                                                                                                              |
| CO4 | Solve problems pertaining to quantitative ability, logical reasoning and verbal ability inside and outside the campus.                                                        |

### Course with focus on employability/entrepreneurship /Skill Development modules

|                   |  |               |  |                  |  |
|-------------------|--|---------------|--|------------------|--|
| Skill Development |  | Employability |  | Entrepreneurship |  |
|-------------------|--|---------------|--|------------------|--|

#### UNIT – 1

(10 Hrs)

#### Arithmetic ability:

**Algebraic operations BODMAS, Fractions, Divisibility rules, LCM& GCD(HCF).**

#### Verbal Reasoning:

**Number Series, Coding & Decoding, Blood relationship, Clocks, Calendars.**

#### UNIT – 2:

(10 Hrs)

#### Quantitative aptitude:

**Averages, Ratio and proportion, Problems on ages, Time-distance–speed.**

#### Business computations:

**Percentages, Profit & loss, Partnership, simple compound interest.****UNIT – 3:****(07 Hrs)****Data Interpretation:****Tabulation, Bar Graphs, Pie Charts, line Graphs. Venn diagrams.****Recommended Co-Curricular Activities****(03 Hrs)**

Surprise tests / Viva-Voice / Problem solving/Group discussion.

**Text Book:**

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

**Reference Books:**

1. Analytical skills by Showick Thorpe, published by S Chand And Company Limited, Ramnagar, New Delhi-110055.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw Hill Publication

**CO-PO Mapping:****(1:Slight[Low];****2:Moderate[Medium];****3:Substantial[High],****'-':No Correlation)**

|     | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PS01 | PS02 | PS03 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| C01 | 3   | 3   | 2   | 3   | 3   | 3   | 1   | 2   | 2   | 3    | 2    | 3    | 2    |
| C02 | 3   | 2   | 3   | 3   | 2   | 3   | 3   | 1   | 3   | 3    | 3    | 2    | 1    |
| C03 | 2   | 3   | 2   | 3   | 2   | 3   | 2   | 2   | 2   | 3    | 2    | 2    | 3    |
| C04 | 3   | 2   | 3   | 2   | 2   | 2   | 3   | 3   | 1   | 1    | 3    | 1    | 2    |

**BLUE PRINT FOR QUESTION PAPER PATTERN  
SEMESTER-I**

| Unit | TOPIC                                         | Multiple choice questions<br>( 1 mark ) | S.A.Q | Marks allotted to the Unit |
|------|-----------------------------------------------|-----------------------------------------|-------|----------------------------|
| I    | Arithmetic ability & Verbal reasoning         | 10                                      | 2     | 20                         |
| II   | Quantitative aptitude & Business computations | 10                                      | 2     | 20                         |
| III  | Data interpretation                           | 10                                      | 2     | 20                         |
|      | TOTAL                                         | 30                                      | 6     | 60                         |

**M.C.Q.** = multiple choice questions (1 marks)

**S.A.Q** = Short answer questions ( 5 Marks )

Very Short answer questions : 30 x 1 = 30M

Short answer questions : 4 x 5 = 20 M

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Total Marks = 50M

**P.R. Government College (Autonomous), Kakinada**  
**I year Degree Examinations - I Semester**  
**Foundation course: Analytical Skills**  
**(Model Paper w.e.f. 2023-24)**

**Time: 2 Hrs**

**Total Marks: 50M**

**Section-A**

**Answer the following Questions. Each question carries one mark.**

**30 x 1 = 30 M**

1.  $25 - [18 - \{25 + 3(10 - \overline{7 - 5})\}] = ?$

- a) **86**                      b) 68                      c) 52                      d) None of these

2. Which of the following fraction is arranged in ascending order of their value ?

- a)  $\frac{1}{4}, \frac{2}{7}, \frac{3}{4}, \frac{4}{7}, \frac{5}{7}, \frac{6}{5}$       b)  $\frac{1}{4}, \frac{2}{7}, \frac{4}{7}, \frac{5}{7}, \frac{3}{4}, \frac{6}{5}$   
c)  $\frac{2}{7}, \frac{1}{4}, \frac{4}{7}, \frac{3}{4}, \frac{5}{7}, \frac{6}{5}$       d)  $\frac{2}{7}, \frac{1}{4}, \frac{4}{7}, \frac{5}{7}, \frac{3}{4}, \frac{6}{5}$

3. If HCF, LCM of two numbers are 16, 240. If one number is 48, find the other ?

- a) 58                      b) **80**                      c) 85                      d) 72

4.  $(x^n - a^n)$  is completely divisible by  $(x - a)$ , when

- a) **n is any natural number**                      b) n is an even natural number  
c) n is an odd natural number                      d) n is prime

5. 11, 13, 17, 19, 23, 25, ?

- a) 26                      b) 27                      c) **29**                      d) 37

6. A and B are young ones of C. If C is the father of A but B is not the son of C. How are B and C related

- a) niece and Uncle      b) **Daughter and Father**      c) Niece and Father      d) Daughter and Mother

7. In certain code 'FROZEN' is written as 'OFAPSG'. How is 'MOLTEN' is written in that code?

- a) OFPOMN                      b) OFSMPN                      c) **OFUMPN**                      d) OFUNPM

8. How many times do the hands of a clock coincide in a day ?

- a) 24                      b) 21                      c) 20                      d) **22**

9. What was the day India attained Independence ?

- a) Wednesday                      b) **Friday**                      c) Monday                      d) Thursday

10. Today is Tuesday. After 62 days it will be

- a) **Monday**                      b) Wednesday                      c) Tuesday                      d) Friday

11. What will be the average of numbers from 1 to 51.

- a) 25                      b) **26**                      c) 27                      d) 28

12. The average age of 14 girls and their teacher's age is 15 yr . If teacher's age is excluded , then the average reduced by 1 . What is the teacher's age ?

- a) **29 yr**                      b) 35 yr                      c) 32 yr                      d) 30 yr

13. The sum of three consecutive odd numbers is 285 . What is the ratio of the smallest and largest numbers respectively ?

- a) 97 : 95                      b) 93 : 95                      c) 95 : 93                      d) **93 : 97**

14. The ages of Surekha and Arunima are in the ratio of 9 : 8 respectively . After 5 yr , the ratio of their ages will be 10 : 9 . what is the difference in years between their ages ?

- a) 4 yr                      b) **5 yr**                      c) 6 yr                      d) 7 yr

15. If a student walks from his house to school at 5 km / h , he is late by 30 min . However , if he walks at 6 km / h , he is late by 5 min only . The distance of his school from his house is

- a) 2.5 km                      b) **12.5 km**                      c) 3.6 km                      d) 5.5 km

16. Raman scored 456 marks in an exam and Sita got 54% marks in the same exam , which is 24 marks less than Raman . If the minimum passing marks in the exam is 34% , then how much more marks did Raman score than the minimum passing marks ?

- a) **184**                      b) 196                      c) 190                      d) 180

17. By selling 18 chocolates , a vendor loses the selling price of 2 chocolates . Find his loss per cent .

- a) 95                      b) **10%**                      c) 11%                      d) 12%

18. A , B and C invested their capitals in the ratio of 5 : 6 : 8 . At the end of the business , they received the profits in the ratio of 5 : 3 : 1 . Find the ratio of time for which they contributed their capitals .

- a) 12 : 9 : 7                      b) 25 : 18 : 8                      c) 5 : 6 : 8                      d) **8 : 4 : 1**

19. The compound interest accrued on an amount at the end of 2 yr at the rate of 12% p.a. is Rs.2862 . What is the amount ?

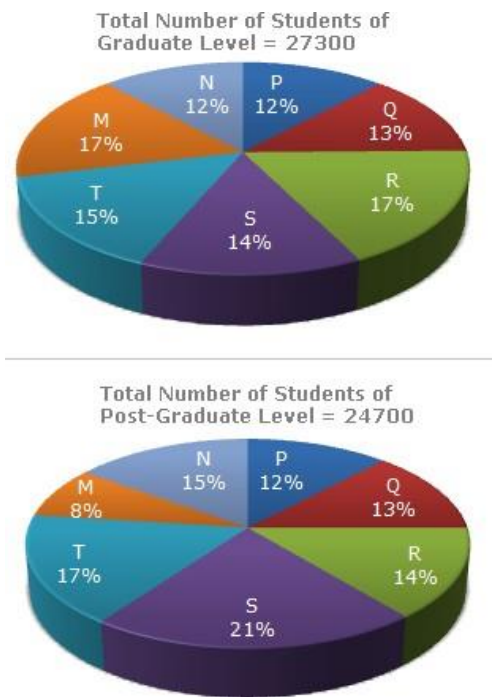
- a) **Rs.11250**                      b) Rs.12200                      c) Rs.13500                      d) Rs. 10000

20. A sum of Rs.3200 becomes Rs.3456 in 2 yr at a certain rate of simple interest . What is the rate of interest per annum ?

- a) 5.5%                      b) 6%                      c) **4%**                      d) 4.5%

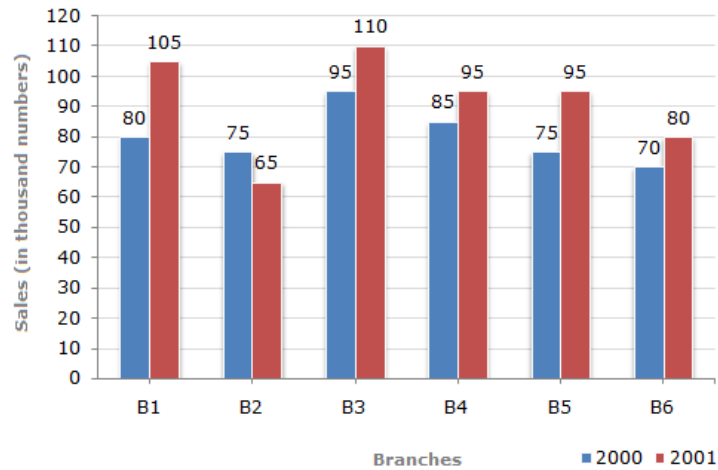
21. The following pie-charts show the distribution of students of graduate and post-graduate levels

in seven different institutes in a town. **Distribution of students at graduate and post-graduate levels in seven institutes:**



1. What is the total number of graduate and post-graduate level students is institute R?  
A. 8320                      B. 7916                      C. 9116                      **D. 8099**
2. 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**
3. How many students of institutes of M and S are studying at graduate level?  
A. 7516                      **B. 8463**                      C. 9127                      D. 9404
4. What is the ratio 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**
5. Total number of students studying at post-graduate level from institutes N and P is  
A. 5601                      B. 5944                      **C. 6669**                      D. 8372

22. The bar graph given below shows the sales of books (in thousand number) from six branches of a publishing company during two consecutive years 2000 and 2001.  
**Sales of Books (in thousand numbers) from Six Branches - B1, B2, B3, B4, B5 and B6 of a publishing Company in 2000 and 2001.**



- What is the ratio of the total sales of branch B2 for both years to the total sales of branch B4 for both years?  
A. 2:3                      B. 3:5                      C. 4:5                      **D. 7:9**
- Total sales of branch B6 for both the years is what percent of the total sales of branches B3 for both the years?  
A. 68.54%                  B. 71.11%                  **C. 73.17%**                  D. 75.55%
- What percent of the average sales of branches B1, B2 and B3 in 2001 is the average sales of branches B1, B3 and B6 in 2000?  
A. 75%                      B. 77.5%                      C. 82.5%                      **D. 87.5%**
- What is the average sales of all the branches (in thousand numbers) for the year 2000?  
A. 73                      **B. 80**                      C. 83                      D. 88
- Total sales of branches B1, B3 and B5 together for both the years (in thousand numbers) is ?  
A. 250                      B. 310                      C. 435                      **D. 560**

### SECTION – B

**Answer any four questions . Each question carries 5 Marks .**

**4 x 5 = 20 M**

- Explain the divisibility rules .
  - Explain the BODMAS rule.
  - Explain the types of Ratio and Proportion .
  - Explain simple and compound interest .
  - Explain the Venn diagrams .
6. *The following pie-charts show the distribution of students of graduate and post graduate levels in seven different institute-M,N,P,Q,R,S and T in a town.*

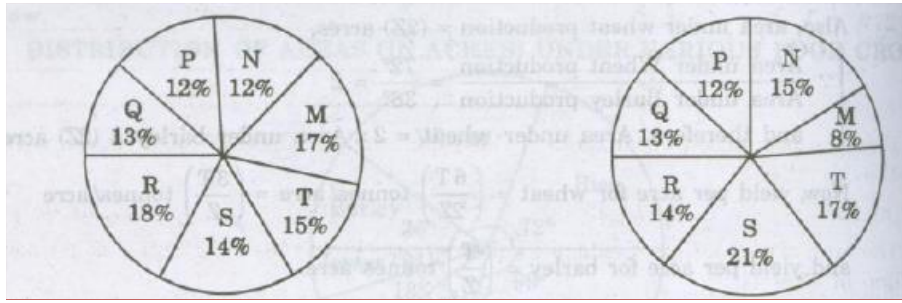
**DISTRIBUTION OF STUDENTS AT GRADUATE AND POST-GRADUATE LEVELS IN SEVEN INSTITUTES-M,N,P,Q,R,S AND T.**

**Total Number of students of**

**Total Number of students of**

**graduate level 27300**

**post graduate level 24700**



1. How many students of institutes M and S are studying at graduate level?
2. Total number of students studying at post -graduate level from institutes N and P is:
3. What is the total number of graduate and post-graduate level students in institute R?
4. What is the ratio between the number of students studying at post graduate and graduate levels respectively from institute S?
5. What is the ratio between the number of students studying post graduate level from institute S and the number of students studying at graduate level from institute Q?