

Vidya Vikas Mandal's

Shree Damodar College of Commerce & Economics, Margao-Goa

FYBBA/FYBBA(FS), Semester- I, Semester End Assessment NOVEMBER 2023

MDC-MAT-131 Mathematical Techniques in Competitive Exams (OA-38, NEP-2020)

Duration: 2 Hrs

Maximum Marks: 60

Instructions: 1) All questions are compulsory.

2) Figures to the right indicate full marks.

3) Use of scientific non programmable calculators is allowed.

Q1. Answer each of the following.**3x4=12Marks**

- i) Find the fourth proportion to 4, 16 and 7.
- ii) Define the following.
 - a) Simple partnership
 - b) Compound partnership
- iii) If A and B take 10 and 15 days to complete a piece of work respectively, then in how many days will the work be completed if they work together?
- iv) What is the angle between the hour hand and minute hand of a clock at 9.50am?

Q2. Answer any four of the following.**3x4=12Marks**

- i) What will be Bhakti's average speed if she goes from point A to B at 10km/hr and returns from B to A at 15km/hr?
- ii) An accurate clock shows 4 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?
- iii) Riya, Saniya and Tina can complete a piece of work in 4, 5 and 6 days respectively. Write the ratio in which they will receive their wages.
- iv) State if the following statement is true or false. Justify your answer.
The relative speed of two trains moving in opposite direction with speeds 4 m/s and 8 m/s is 12 m/s.
- v) Write the duplicate and triplicate ratio of 2:5.
- vi) In what proportion must a grocer mix wheat at Rs.2.04 per kg and wheat at Rs.2.88 per kg so as to make a mixture of worth Rs. 2.52 per kg?

Q3. Answer any three of the following.**4x3=12Marks**

- i) Estimate the true discount for the present worth of Rs 600 for a period of 4 years at 4% per annum rate of interest.
- ii) The ratio between the present ages of Aditya and Vishal is 2:3. Vishal's age 16 years hence will be twice of Aditya's age four years hence. Show that the sum of their present ages is 40.

