RAMAKRISHNA MISSION VIDYAMANDIRA

Belur Math, Howrah – 711 202

UG ADMISSION TEST – 2024

ECONOMICS

Date : 20-06-2024 **Full Marks : 50** Time: 3·00 p.m. – 4·00 p.m.

[Use a separate Answer Book for <u>each group</u>]

Group – A

Answer all the following questions : [6×5=30]

1. Draw the graph of the function $y = |x| + |x-1|$. Show that the function is continuous everywhere. [4+2]

2. Find the value of k if $\lim_{x\to 1}\frac{x^4-1}{x-1} = \lim_{x\to k}\frac{x^3-k^3}{x^2-k^2}$. [6]

3. If $y = \sqrt{3x} - \sqrt{\frac{3}{x}} + \frac{x+6}{6-x}$, find the value of $\frac{dy}{dx}$ at $x = 3$. [6]

4. Find the value of : $\int \sqrt{(x-\alpha)(\beta-x)}\,dx \qquad (\alpha < x < \beta)$ [6]

5. In an assembly of 10 players, 3 are footballers, 3 are cricketers. Remaining players are both footballers and cricketers. There are two rows containing 5 chairs and it is intended that all footballers are to be seated in one row and the cricketers in the other. The remaining players are to the seated in either row in the vacant positions left. In how many ways can all the players be seated? [6]

Group – B

[Essay Writing]

6. Write an essay in English within 300 words on the topic:
"India's Journey to the World's Third-Largest Economy: Challenges and Opportunities." [20]

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