Roll No.: _____ **Enrolment No._____**

PARUL UNIVERSITY

FACULTY OF PHARMACY

B. PHARM FIRST SEMESTER

FIRSTINTERNAL THEORY EXAMINATION: 2022-23

Subject Name: Remedial Mathematics
Subject Code: BP106RMT **Date: 16/01/2023**
Time: 12:00 pm-01.15pm **Total Marks: 30**

Instructions:

1. **Make suitable assumptions wherever necessary.**
2. **Figures to the right indicate maximum marks.**

Q.1 Attempt any 01 out of 02 questions. **10**

A) Convert the given rational fraction into partial fraction

$$\frac{5x+6}{(x+2)(2x-1)(3x+5)}$$

B) Define the following:

a) Product of logarithm
b) Division of logarithm
c) Power of logarithm
d) Change of base

And find the value of $\log_{3\sqrt{3}} 243$.

Q.2 Attempt any 04 out of 06 questions. **20**

A) If $\log(\frac{a+b}{2}) = \frac{1}{2}(loga + logb)$ then prove that $a = b$.

B) Prove that if $f(x) = \frac{1-x}{1+x}$ then $f(x) - f\left(\frac{1}{x}\right) = 2f(x)$.

C) Evaluate:

a) $\lim_{x\to 3} \frac{x^{\frac{3}{2}} - 3^{\frac{3}{2}}}{x-3}$

b) $\lim_{x\to 0} \frac{sin5x}{2x}$

D) Convert the given rational fraction into partial fraction:

$$\frac{10}{(x-1)(x+1)^2}$$

E) A function $f: R \to R$ is defined by $f(x) = \frac{3x}{2}$ and $g: R \to R$ is defined by $g(x) = 3x - 2$. Find $fog\ and\ gof$, if possible.

F) Evaluate:

$$\lim_{x\to(-1)} \frac{x^2 - x - 2}{2x^2 - x - 3}$$

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