

- a Using Leibnitz Rule find $\int_0^1 \frac{x^a - 1}{\log x} dx$
- b Express $f(x) = x$ as a half range sine series in $(0, 2)$
- c Find half range cosine series for $f(x) = \sin x$

Q. 6 *Attempt any two of following*

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- a Find the Fourier series of $f(x) = \frac{a}{2} - x$ $0 < x < a$
- b Find the area of circle $x^2 + y^2 = a^2$ by double integration.
- c Prove that $\beta(x + 1, y) = \frac{x}{x+y} \beta(x, y)$

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