

**GOVERNMENT OF ODISHA
HOME DEPARTMENT**

OFFICE ORDER

Bhubaneswar dated the 14th Nov', 2024

No.HOME-OSS-TRS-0008-2023 42456/OSS

Sri Dipti Kanta Parida, Assistant Section Officer, Home (Elections) Department is hereby transferred and posted as such to Health and Family Welfare Department against the existing vacancy with immediate effect.

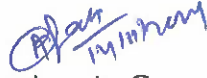
By orders of the Additional Chief Secretary


Deputy Secretary to Government

Memo No. 42457/OSS Dated 14.11.2024

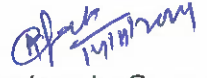
Copy forwarded to Home (Elections) Department / Health and Family Welfare Department for information and necessary action.

The Home (Elections) Department is requested to relieve Sri Parida, ASO immediately to enable him to join in his new place of posting.


Deputy Secretary to Government

Memo No. 42458/OSS Dated 14.11.2024

Copy forwarded to A.G. (A & E), Odisha / Treasury Officer, Special Treasury No. II / G.A and P. G. (Rent) Department / Person concerned / Home (Confidential) Department for information and necessary action.


Deputy Secretary to Government

Memo No. 42459/OSS Dated 14.11.2024

Copy forwarded to Project Leader, OSWAS Centre, IT Centre Secretariat, Bhubaneswar, for information and necessary action.


Deputy Secretary to Government

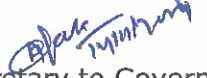
Memo No. 42460/OSS Dated 14.11.2024

Copy forwarded to P.S. to Additional Chief Secretary to Government, Home Department for kind information of Additional Chief Secretary to Government.


Deputy Secretary to Government

Memo No. 42461/OSS Dated 14.11.2024

Copy forwarded to the Nodal Officer Home (IMU) Department for information and necessary action. He is requested to launch the Order on the Department website for information of all concerned.


Deputy Secretary to Government

PROBLEM SET 1

Math 101, Spring 2011

Due: 1/10/11

Problem 1

Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be a function satisfying

$$f(x+y) = f(x) + f(y) \quad \text{for all } x, y \in \mathbb{R}.$$

Suppose that f is continuous at $x=0$. Prove that f is linear.

Hint: First show that $f(x) = cx$ for all $x \in \mathbb{Q}$. Then use the continuity of f at $x=0$ to show that $f(x) = cx$ for all $x \in \mathbb{R}$.

Problem 2

Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be a function satisfying

$$f(x+y) = f(x)f(y) \quad \text{for all } x, y \in \mathbb{R}.$$

Suppose that f is continuous at $x=0$. Prove that $f(x) = e^{cx}$ for some constant c .

$$\text{Hint: First show that } f(x) = e^{cx} \text{ for all } x \in \mathbb{Q}.$$

Then use the continuity of f at $x=0$ to show that $f(x) = e^{cx}$ for all $x \in \mathbb{R}$.

Problem 3

$$f(x) = \begin{cases} x^2 \sin(1/x) & x \neq 0 \\ 0 & x = 0 \end{cases}$$

$$f'(x) = 2x \sin(1/x) - \cos(1/x)$$

$$f'(0) = 0$$

Problem 4

$$f(x) = \begin{cases} x^2 \sin(1/x) & x \neq 0 \\ 0 & x = 0 \end{cases}$$

Problem 5

$$f(x) = \begin{cases} x^2 \sin(1/x) & x \neq 0 \\ 0 & x = 0 \end{cases}$$

Problem 6

$$f(x) = \begin{cases} x^2 \sin(1/x) & x \neq 0 \\ 0 & x = 0 \end{cases}$$

Problem 7

Problem 8

Problem 9

$$f(x) = \begin{cases} x^2 \sin(1/x) & x \neq 0 \\ 0 & x = 0 \end{cases}$$