

# MANONMANIAM SUNDARANAR UNIVERSITY

DIRECTORATE OF DISTANCE AND CONTINUING EDUCATION

INTERNAL ASSIGNMENT FOR MAY 2024 EXAMINATIONS

**B.Sc. Physics – Second Semester**

பொதுத் தமிழ் - 1

தமிழ் இலக்கிய வரலாறு

**Subject Code: J1TL21**

1.) (அ) சிற்றிலக்கியம் தோற்றம் வளர்ச்சி குறித்து விளக்குக.

(அல்லது)

(ஆ) புதுக்கவிதை தோற்றம் வளர்ச்சி குறித்து விளக்குக.

2.) (அ) கடிதம் அந்நியர்கள் சிறுகதைகளை ஆராய்க.

(அல்லது)

(ஆ) வேலைக்காரி நாடகம் குறித்து கட்டரை வரைக.

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**B.Sc. Physics – Second Semester**

**General English - II (Part - II English)**

**Subject Code: J2EN21**

1.) (A) Examine the use of imagery and metaphor in the poem “Still Here”.

**(OR)**

(B) Reflect on the enigmatic personality of princess in “The lady, Or the Tiger”.

2.) (A) Elucidate the theme of choice and decision-making in “The Road Not Taken”.

**(OR)**

(B) Write about the narrator’s grandmother’s experiences of Illiteracy and her journey towards self-empowerment in “How I Taught My Grandmother to Read?”

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**B.Sc. Physics – Second Semester**

**Heat, Thermodynamics and Statistical Physics**

**Subject Code: JMPH21**

1.) (A) What is Carnot's engine? Construction and working of Carnot's engine.

**(OR)**

(B) What is Thermal Conductivity? How do you determine Thermal conductivity by Forbes and less disc method?

2.) (A) Derive Maxwell – Boltzmann statistics with distribution function?

**(OR)**

(B) Derive Fermi-Dirac statistics with distribution function?

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**B.Sc. Physics – Second Semester**

**Vector Calculus and Fourier Series**

**Subject Code: JEMA21**

1.) (A) Evaluate  $\iint_D x^2 y^2 dx dy$  where D is the circular disc  $x^2 + y^2 \leq 1$ .

(OR)

(B) Evaluate  $\int_0^{\infty} \int_0^{\infty} \frac{1}{\sqrt{r}} e^{-r^2} r dr d\theta$ .

2.) (A) Evaluate  $\iint_S (\nabla \times \mathbf{f}) \cdot \mathbf{n} ds$  where  $\mathbf{f} = y^2 \mathbf{i} + y \mathbf{j} - xz \mathbf{k}$  and S is the upper half of the sphere  $x^2 + y^2 + z^2 = a^2$  and  $z \geq 0$ .

(OR)

(B) Verify Gauss divergence theorem for the function  $f = a(x + y)^2 + a(y - x)^2 + z^2$  over the hemisphere bounded by the  $xy$  plane and the upper half of the sphere  $x^2 + y^2 + z^2 = a^2$ .

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**B.Sc. Physics – Second Semester**

**Home Electrical Installation**

**Subject Code: JSPH21**

1.) (A) Difference between DC and AC. Explain the Advantage of AC over DC.

**(OR)**

(B) What is Transmission losses? Role of step-up and step-down transformer's in transmission of electricity?

2.) (A) Difference between single and three phase connection. How will you calculate EB bill?

**(OR)**

(B) What is the use of electrical fuse and circuit breakers what are the types of Fuses?

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**B.Sc. Physics – Second Semester**

**Physics of Music**

**Subject Code: JSPH22**

- 1.) (A) How vibrations of atoms of matter occurs. Explain the propagation of sound waves in air, other media, fluids and solids.

**(OR)**

- (B) Simple vibrating systems of a tuning fork. Explain the following parameters amplitude, phase, energy, energy loss, energy damping, energy dissipations.

- 2.) (A) How sine and cosine waves influence in musical tone?

**(OR)**

- (B) How music sound recorded in a digital recording. List out the equipments used for the recording.