

VIVEKANANDA COLLEGE, ALIPURDUAR

B.sc 3rd Semester-2023

PHYSICS DSC-3A

F.M: 10

Time: 30 minutes

Internal assessment

1. (i) Derive the velocity distribution function for a gaseous system that obey the Maxwell-Boltzmann Statistics. (4)
Or
(ii) Calculate the Fermi-Dirac distribution function from the Fermi-Dirac Statistics.
2. Derive the Rayleigh-Jeans law and Wien's displacement law from Plank's law. (4)
3. Explain the ultraviolet catastrophe in Rayleigh-Jeans spectral distribution. (2)

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B.sc 3rd Semester-2023

PHYSICS SEC

F.M: 10

Time: 30 minutes

Internal assessment

1. Draw a diagram of DC generator. Write down its theory and explain construction. (1 + 2 + 2)
2. Draw a diagram of transformer. Write down theory of transformer. Mention different losses of transformer. (1 + 2 + 2)

VIVEKANANDA COLLEGE, ALIPURDUAR

B.sc 5th Semester-2023

PHYSICS DSE-II

Nuclear Physics

Internal assessment

F.M: 10

Time: 30 minutes

1. Write down Geiger-Nuttal rule. (1)
2. (i) Explain the principle of Cyclotron and find the energy of particle. Mention limitation of Cyclotron. (5)

Or

(ii) Define Synchrotron and Synchro-Cyclotron. Explain action and construction of Synchrotron. (5)
3. (i) Describe GM counter and explain its operation. (4)

Or

(ii) Write down principle of Scintillation Counter

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B.sc. 5th Semester-2023

PHYSICS SEC-II

F.M:10

RENEWABLE ENERGY AND ENERGY HARVESTING

Time: 30 minutes

Internal Assessment

1. What are the sources of non-conventional energy ? (2)
2. Discuss the importance of hydroelectricity. (2)
3. What are the characteristics of photovoltaic (PV) systems? (2)
4. Explain mathematical description of piezo-electricity. (2)
5. Write a short note on osmotic power. (2)