

Question for Internal exam

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B.Sc. Sem III (2020-2023)

Physics Core paper (5)

Answer any two questions

2x5 = (10)

- ① State and prove Fourier series theorem.
- ② What are the critical constants for gases.
- ③ Deduce Maxwell's velocity distribution law
- ④ obtain Vander waal's equation of state
- ⑤ What are Transport phenomena.

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B.Sc. Sem III phys² (Hons) (2020-2023)

Core paper - (6)

Answer any two questions

2X5 = (10)

- (1) State and explain zeroth law of thermodynamics.
- (2) Derive the four thermodynamical relations of Maxwell from the thermodynamical potential V , F , M and G .
- (3) What is entropy? Show that change of entropy in a reversible cycle is zero but for the irreversible cycle there is an increase in the entropy of the system.
- (4) What is Carnot's cycle. Describe and show ~~that~~ how the work done in each operation is represented on a pressure, volume diagram. Calculate work done per cycle.

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B. sc. Sem III physics (Hons) (2020-2023)

Core paper - (7)

Answer any two questions

2 x 5 = (10)

- (1) What is a P-N Junction diode? Discuss how a potential barrier develops at the junction.
- (2) Define current gain α and β of a transistor. Establish a relation between them.
- (3) Discuss the principle and working of a zener diode.
- (4) Describe the circuit diagram and working of a Full wave rectifier.

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B.Sc. Sem III Physics (Hons) (2020-2023)

Subject - Physics Core practical

Full marks (15)

Answer any one questions

- (1) Determine the thermal conductivity of copper using Searl's apparatus
- (2) Determine the thermal conductivity of a bad conductor by Lee disc method.
- (3) Describe with truth table of OR, AND, NOT, NAND & NOR logic gates.