



MCQ UNIT II CLASSICAL AND QUANTUM STATISTICS

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- 1 Phase space has
- A) Three dimensions
- B) Two dimensions
- C) Four dimensions
- D) Six dimensions



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2. Combination of position space and momentum space is.
- A) Momentum space
 - B) Position space
 - C) Phase space
 - D) None



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3. For N molecular system, degree of freedom is

- A) Nf
- B) $2Nf$
- C) $3Nf$
- D) f



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4. Fermions are
- A) Photons
 - B) Ideal gas molecules
 - C) electrons
 - D) None



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5. From Fermi-Dirac Statistics $n_i =$

A) $n_i = \frac{g_i}{e^{(\alpha + \beta \epsilon_i)}}$

B) $n_i = \frac{g_i}{[e^{(\alpha + \beta \epsilon_i)} - 1]}$

C) $n_i = \frac{g_i}{[e^{(\alpha + \beta \epsilon_i)} + 1]}$

D) None



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6. Particles obeying Maxwell-Boltzmann statistics are
- A) Identical and indistinguishable
 - B) Identical and distinguishable
 - C) Photons
 - D) None



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7. Particles obeying Bose -Einstein statistics are
- A) Bosons
 - B) Fermions
 - C) electrons
 - D) Ideal gas molecules



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8. According to which statistics, the energy at absolute zero cannot be zero

- A) M-B
- B) F-D
- C) B-E
- D) None of above



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9. Fermions have spin value

- A) $1/2$
- B) 1
- C) zero
- D) Any one



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10. Bosons have spin value

- A) $1/2$
- B) 1
- C) zero
- D) 0 or 1



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11. Photons obey the statistics

- A) M-B
- B) B-E
- C) F-D
- D) None of above



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12. In how many ways two particles can be arranged in three phase cells according to B-E statistics

- A) 6
- B) 9
- C) 3
- D) 27



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13. According to F-D Statistics, 3 particles can be distributed in 4 energy states, in number of ways
- A) 16
 - B) 9
 - C) 4
 - D) None



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14. Pauli's exclusion principle applies to
- A) M-B Statistics
 - B) F-D Statistics
 - C) B-E Statistics
 - D) None



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15. Volume of phase space is

- A) h
- B) h^2
- C) h^3
- D) None