

NEET MAGNETISM AND MATTER — MAGNETIC PROPERTIES OF MATERIALS (DIA-, PARA-, FERROMAGNETISM) — PYQS

Max. Marks: 56

Questions: 14

Section A (MCQ) — 14 questions

Q.1 Match **List I** with **List II**

List I (Material)		List II (Susceptibility (χ))	
A.	Diamagnetic	I.	$\chi = 0$
B.	Ferromagnetic	II.	$0 > \chi \geq -1$
C.	Paramagnetic	III.	$\chi \gg 1$
D.	Non-magnetic	IV.	$0 < \chi < \epsilon$ (a small positive number)

Choose the correct answer from the options given below.

[NEET (UG) 2024]

- (1) A-II, B-III, C-IV, D-I (2) A-II, B-I, C-III, D-IV
(3) A-III, B-II, C-I, D-IV (4) A-IV, B-III, C-II, D-I

Scan or tap for the
full solution



Q.2 The incorrect relation for a diamagnetic material (all the symbols carry their usual meaning and ϵ is a small positive number) is

[RE-NEET (UG) 2024]

- (1) $\mu < \mu_0$ (2) $0 \leq \mu_r < 1$
(3) $-1 \leq \chi < 0$ (4) $1 < \mu_r < 1 + \epsilon$

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full solution



Q.3 A thin diamagnetic rod is placed vertically between the poles of an electromagnet. When the current in the electromagnet is switched on, then the diamagnetic rod is pushed up, out of the horizontal magnetic field. Hence the rod gains gravitational potential energy. The work required to do this comes from

[NEET 2018]

- (1) The current source
(2) The magnetic field
(3) The lattice structure of the material of the rod
(4) The induced electric field due to the changing magnetic field

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Q.4 The magnetic susceptibility is negative for

[NEET 2016 (Phase 1)]

- (1) ferromagnetic material only
(2) paramagnetic and ferromagnetic materials
(3) diamagnetic material only
(4) paramagnetic material only

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full solution



Q.5 There are four light-weight-rod samples A, B, C, D separately suspended by threads. A bar magnet is slowly brought near each sample and the following observations are noted

- (i) A is feebly repelled
(ii) B is feebly attracted
(iii) C is strongly attracted
(iv) D remains unaffected

Which one of the following is true ?

[AIPMT 2011 (Prelims)]

- (1) B is of a paramagnetic material
(2) C is of a diamagnetic material
(3) D is of a ferromagnetic material
(4) A is of a non-magnetic material

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full solution



Q.6 The magnetic moment of a diamagnetic atom is

[AIPMT 2010 (Mains)]

- (1) much greater than one
(2) 1
(3) between zero and one
(4) equal to zero

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full solution



Q.7 If a diamagnetic substance is brought near the north or the south pole of a bar magnet, it is

[AIPMT 2009]

- (1) repelled by the north pole and attracted by the south pole
(2) attracted by the north pole and repelled by the south pole
(3) attracted by both the poles
(4) repelled by both the poles

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full solution



Q.8 Curie temperature above which

[AIPMT 2008]

- (1) paramagnetic material becomes ferromagnetic material
- (2) ferromagnetic material becomes diamagnetic material
- (3) ferromagnetic material becomes paramagnetic material
- (4) paramagnetic material becomes diamagnetic material

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Q.9 Nickel shows ferromagnetic property at room temperature. If the temperature is increased beyond Curie temperature, then it will show [AIPMT 2007]

- (1) anti ferromagnetism (2) no magnetic property
- (3) diamagnetism (4) paramagnetism

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Q.10 Curie temperature is the temperature above which

[AIPMT 2006]

- (1) paramagnetic material becomes ferromagnetic material
- (2) ferromagnetic material becomes diamagnetic material
- (3) ferromagnetic material becomes paramagnetic material
- (4) paramagnetic material becomes diamagnetic material

Scan or tap for the full solution



Q.11 If the magnetic dipole moment of an atom of diamagnetic material, paramagnetic material and ferromagnetic material are denoted by μ_d , μ_p and μ_f respectively, then [AIPMT 2005]

- (1) $\mu_d = 0$ and $\mu_p \neq 0$ (2) $\mu_d \neq 0$ and $\mu_p = 0$
- (3) $\mu_p = 0$ and $\mu_f \neq 0$ (4) $\mu_d \neq 0$ and $\mu_f \neq 0$

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Q.12 A diamagnetic material in a magnetic field moves

[AIPMT 2003]

- (1) from stronger to the weaker parts of the field
- (2) from weaker to the stronger parts of the field
- (3) perpendicular to the field
- (4) in none of the above directions

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Q.13 According to Curie's law, the magnetic susceptibility of a substance at an absolute temperature T is proportional to [AIPMT 2003]

- (1) $1/T$ (2) T (3) $1/T^2$ (4) T^2

Scan or tap for the full solution



Q.14 Among which the magnetic susceptibility does not depend on the temperature? [AIPMT 2001]

- (1) diamagnetism (2) paramagnetism
- (3) ferromagnetism (4) ferrite

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	1	4	1	3	1	4	4	3	4	3	1
Ques.	12	13	14								
Ans.	1	1	1								