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PHYSICS TEST - CHAPTER 8: MAGNETISM

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. The word "magnet" comes from the region of:	Egypt	Persia	Arabia	Magnesia	○○○●
2. Early magnets were found as natural stones called:	loadstones	diamonds	quartz	marble	●○○○
3. Magnetism arises due to the motion of:	neutral particles	charged particles	photons only	heavy atoms	○●○○
4. An electron orbiting the nucleus behaves as a tiny:	resistor	magnet	battery	lens	○●○○
5. Magnetism in atoms is produced by orbital motion and:	mass of the nucleus	spin motion of electrons	colour of atoms	size of atoms	○●○○
6. Every magnet has:	two poles	one pole	three poles	no pole	●○○○
7. The two poles of a magnet are called:	positive and negative	north and south	east and west	up and down	○●○○
8. Like magnetic poles:	repel each other	attract each other	neutralise each other	have no effect	●○○○
9. Unlike magnetic poles:	repel each other	have no effect	annihilate	attract each other	○○○●
10. Magnets are always:	bipolar	monopolar	non-polar	tripolar	●○○○
11. A magnetic monopole has:	never been found in a magnet	always been observed	two poles	been used in compasses	●○○○
12. If a bar magnet is cut in half, we get:	a monopole	two smaller magnets	an unmagnetised piece	a weaker single pole	○●○○
13. A magnet attracts:	all materials	only plastics	magnetic materials	only wood	○○●○
14. Magnetic materials are always attracted by:	plastic	glass	rubber	magnets	○○○●

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Questions	A	B	C	D	A B C D
15. The space around a magnet in which it exerts force on other magnetic poles is called a:	electric field	gravitational field	force field	magnetic field	○○○●
16. The SI unit of magnetic field strength is:	weber	tesla	henry	farad	○●○○
17. The symbol of the tesla is:	t	Te	T	Ts	○○●○
18. Magnetic field is represented graphically by:	dots	field lines	triangles	squares	○●○○
19. Magnetic field lines outside a magnet go from:	north pole to south pole	south pole to north pole	north to north	south to south	●○○○
20. Inside a magnet the field lines go from:	south pole to north pole	north pole to south pole	east to west	west to east	●○○○
21. Magnetic field lines form:	closed loops	open straight lines	circles only inside	random lines	●○○○
22. Magnetic field lines can be plotted using:	a ruler	a compass or iron filings	a stop watch	a thermometer	○●○○
23. Iron filings sprinkled around a bar magnet:	arrange in the pattern of field lines	fly away	stick randomly	turn into liquid	●○○○
24. The direction of the magnetic field at a point is the direction of force on a:	north pole placed there	south pole placed there	neutral object	charge at rest	●○○○
25. A test north pole near the north pole of a magnet is:	repelled	attracted	unaffected	destroyed	●○○○
26. The magnetic field is stronger where field lines are:	far apart	closer together	absent	parallel only	○●○○
27. The magnetic field is weaker where field lines are:	closer	farther apart	crowded	touching	○●○○
28. Spacing of magnetic field lines shows the relative:	colour of the magnet	strength of the field	mass of the magnet	age of the magnet	○●○○
29. Magnetic field lines never:	cross each other	start at north pole	form loops	exist in air	●○○○
30. Field strength near the poles of a bar magnet is:	least	greatest	zero	equal to that at the centre	○●○○
31. A region where there is no magnetic field is called a:	neutral zone	pole	domain	solenoid	●○○○

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Questions	A	B	C	D	A B C D
32. The phenomenon of making a region free from magnetic field is called:	magnetisation	induction	domain alignment	magnetic shielding	○○○●
33. Materials used for magnetic shielding are:	wood and plastic	glass and rubber	iron, nickel and cobalt	water and air	○○●○
34. Magnetic shields are made with rounded corners because field lines:	cannot turn sharp 90° angles easily	are attracted to corners	are weak at curves	must be straight	●○○○
35. A material that is not a magnet but becomes one in a magnetic field is an:	permanent magnet	induced magnet	natural magnet	neutral magnet	○●○○
36. The phenomenon of making a material a magnet by an external field is called:	shielding	induced magnetism	demagnetisation	repulsion	○●○○
37. Which is a method of magnetising a material?	Cooling in ice	Stroking with a magnet	Dropping in water	Painting	○●○○
38. Which is a method of making a material lose its magnetism?	Stroking in one direction	Placing in a solenoid with DC	Heating	Stroking with a magnet	○○●○
39. Hammering a material in a magnetic field:	removes all domains	cools it	aligns its domains	has no effect	○○●○
40. The quickest method of magnetising a material is:	stroking with a magnet	striking it	hammering it	putting it in a current-carrying coil	○○○●
41. A coil of wire wrapped around a cylinder is called a:	capacitor	resistor	solenoid	transformer	○○●○
42. The magnetic field of a solenoid resembles that of a:	straight wire only	bar magnet	charged plate	battery	○●○○
43. A solenoid behaves as a magnet only:	always	while current flows	when cooled	when it is bent	○●○○
44. Magnetising a material with direct current in a solenoid keeps the polarity:	reversing every cycle	zero	constant	random	○○●○
45. Alternating current in a solenoid:	reverses the polarity every half cycle	keeps the polarity constant	stops the current	increases the poles	●○○○
46. Alternating current in a solenoid can be used to:	magnetise it permanently	cool it	demagnetise a material	make it heavy	○○●○
47. Magnetic field strength inside a solenoid is B =	$\mu_0 NI/L$	$\mu_0 I/2\pi r$	$\mu_0 L/NI$	$NI/\mu_0 L$	●○○○
48. In $B = \mu_0 NI/L$, N is the:	number of poles	length of the wire	resistance	number of turns	○○○●

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Questions	A	B	C	D	A B C D
49. In B = μ₀NI/L, L is the:	number of loops	current	permeability	length of the solenoid	○○○●
50. Magnetic field due to a long straight wire at distance r is B =	$\mu_0 NI/L$	$\mu_0 r/2\pi I$	$\mu_0 I/2\pi r$	$2\pi r/\mu_0 I$	○○●○
51. The permeability of free space μ₀ equals:	$4\pi \times 10^{7}$ N A^{-2}	$4\pi \times 10^{-7}$ N A^{-2}	$\pi \times 10^{-7}$ N A^{-2}	4×10^{-7} N A^{-2}	○●○○
52. The magnetic field of a solenoid increases when the:	current decreases	length increases only	current increases	turns are removed	○○●○
53. The magnetic field of a solenoid with 1000 turns, length 0.5 m and current 2 A is about:	5.0×10^{-6} T	1.0×10^{-3} T	2.5×10^{-3} T	5.0×10^{-3} T	○○○●
54. A solenoid has 100 turns per metre and carries 1.2 A. The magnetic field is about:	1.5×10^{-7} T	1.5×10^{-2} T	4×10^{-7} T	1.5×10^{-4} T	○○○●
55. A long straight wire carries 5 A. At 0.1 m, the magnetic field is:	2×10^{-5} T	5×10^{-7} T	1×10^{-5} T	1×10^{-7} T	○○●○
56. Magnetic field of a straight wire decreases as the distance from it:	increases	decreases	is zero	is constant	●○○○
57. Magnets that do not retain their magnetism after the field is removed are called:	permanent magnets	natural magnets	bar magnets	temporary magnets	○○○●
58. Magnets that keep their magnetism for a long time are called:	temporary magnets	induced magnets only	electromagnets	permanent magnets	○○○●
59. An electromagnet is a type of:	permanent magnet	temporary magnet	natural magnet	non-magnet	○●○○
60. In an electromagnet, the magnetic field is produced due to:	electric current	heating	cooling	gravity	●○○○
61. Which is an example of a temporary magnet?	Alnico	Iron nail	Cobalt magnet	Loadstone	○●○○
62. An example of a permanent magnetic material is:	soft iron	nail	Alnico	paper clip	○○●○
63. The strength of an electromagnet can be:	never changed	zero always	varied by changing the current	fixed	○○●○
64. The poles of an electromagnet can be:	never reversed	reversed by reversing the current	fixed	cancelled permanently	○●○○
65. Permanent magnets do not need:	a continuous supply of electricity	iron	air	a solid shape	●○○○

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Questions	A	B	C	D	A B C D
66. Permanent magnets are preferred where:	very strong fields are needed always	the pole must be reversed	electricity is not continuously available	the field must be turned off	○○●○
67. Compared with electromagnets, the strength of permanent magnets is generally:	higher	lower	infinite	zero	○●○○
68. Which device uses an electromagnet to hold a door shut?	Compass	Thermometer	Magnetic door lock	Barometer	○○●○
69. A magnetic door lock opens when the current:	is increased	is reversed to AC	flows more strongly	is disconnected	○○○●
70. Magnetic door locks are mainly used for:	emergency exits	windows only	pencil boxes	bicycles	●○○○
71. A group of atoms whose magnetic poles are aligned in the same direction is a:	solenoid	neutral zone	magnetic pole	magnetic domain	○○○●
72. In an unmagnetised iron bar, the domains are:	randomly oriented	all aligned	absent	all pointing north	●○○○
73. In a magnetised iron bar, the domains are:	randomly oriented	destroyed	vertical only	aligned in the same direction	○○○●
74. Heating a magnet makes it lose magnetism because domains become:	more aligned	larger	smaller	misaligned	○○○●
75. Magnetic materials are classified into how many types by their behaviour in an external field?	two	four	three	five	○○●○
76. The three types of magnetic materials are diamagnetic, paramagnetic and:	ferromagnetic	electromagnetic	non-magnetic	plasma magnetic	●○○○
77. Materials with zero net magnetic field at the atomic level are:	paramagnetic	diamagnetic	ferromagnetic	permanent	○●○○
78. Diamagnetic materials are:	strongly attracted	weakly attracted	permanent magnets	weakly repelled by a magnet	○○○●
79. Which of the following is a diamagnetic material?	Aluminium	Iron	Bismuth	Nickel	○○●○
80. Which of the following is a diamagnetic material?	Cobalt	Sodium	Iron	Gold	○○○●
81. Which of the following is a diamagnetic material?	Water	Iron	Lithium	Cobalt	●○○○
82. Which of the following is diamagnetic?	Nickel	Tungsten	Glass	Cobalt	○○●○

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Questions	A	B	C	D	A B C D
83. Materials with atoms having small net magnetism that is randomly oriented are:	diamagnetic	paramagnetic	ferromagnetic	non-polar	○●○○
84. Paramagnetic materials are:	strongly attracted	repelled	weakly attracted by a magnet	permanent magnets	○○●○
85. Which of the following is paramagnetic?	Silver	Iron	Water	Aluminium	○○○●
86. Which of the following is paramagnetic?	Tungsten	Bismuth	Gold	Glass	●○○○
87. Which of the following is paramagnetic?	Copper	Nickel	Marble	Lithium	○○○●
88. Which of the following is paramagnetic?	Wood	Cobalt	Sodium	Gold	○○●○
89. Materials strongly attracted by a magnet are:	ferromagnetic	diamagnetic	paramagnetic	non-magnetic	●○○○
90. Ferromagnetic materials retain their magnetisation:	never	after the external field is removed	only when heated	only in water	○●○○
91. Which of the following is a ferromagnetic material?	Iron	Aluminium	Copper	Bismuth	●○○○
92. Which of the following is a ferromagnetic material?	Nickel	Gold	Silver	Wood	●○○○
93. Which of the following is a ferromagnetic material?	Water	Glass	Lithium	Cobalt	○○○●
94. Which of these is NOT ferromagnetic?	Iron	Aluminium	Cobalt	Nickel	○●○○
95. Which pair of materials are both ferromagnetic?	Gold and iron	Wood and nickel	Iron and cobalt	Glass and cobalt	○○●○
96. Which of these is a non-magnetic material?	Iron	Plastic	Cobalt	Nickel	○●○○
97. Which of these is a non-magnetic material?	Steel	Nickel	Wood	Iron	○○●○
98. Magnetic materials respond to a:	sound only	colour	smell	magnetic field	○○○●
99. Non-magnetic materials:	are strongly attracted	become permanent magnets	always repel	do not respond to a magnetic field	○○○●

Questions	A	B	C	D	A B C D
100. Which material is attracted by a magnet?	Steel	Plastic	Wood	Copper	●○○○
101. Which of the following cannot be magnetised easily?	Iron	Copper	Cobalt	Nickel	○●○○
102. The silver, copper and gold group of materials is:	ferromagnetic	permanent	diamagnetic	electromagnetic	○○●○
103. Which statement is correct about the earth?	It has no magnetic field	It is a monopole	It behaves like a big magnet	It has a field only at the equator	○○●○
104. The earth's magnetic field is produced by:	the moon	rotation of clouds	the atmosphere	electric currents in the molten iron core	○○○●
105. The generation of the earth's magnetic field by moving molten iron is called the:	dynamo effect	photoelectric effect	Doppler effect	greenhouse effect	●○○○
106. The core of the earth consists mainly of:	molten iron	water	sand	ice	●○○○
107. The cause of the earth's magnetic field is:	motion of ions in the core	rotational motion of earth only	pull of the sun	moon's gravity	●○○○
108. The earth's magnetic field resembles that of a:	solenoid only	straight wire	battery	bar magnet	○○○●
109. Charged particles and radiation coming from the Sun are called:	sea breeze	solar wind	cosmic dust	aurora lights	○●○○
110. The solar wind pushes the earth's magnetic field:	outward on the sun side	to zero	inward on the sun side	only at poles	○○●○
111. Away from the Sun, the earth's field extends:	only a few metres	nowhere	to zero immediately	millions of kilometres	○○○●
112. The earth's magnetic field protects life by deflecting:	sound waves	meteorites only	charged particles from the Sun	heat waves only	○○●○
113. Dancing lights at the earth's poles are called:	rainbow	eclipse	aurora	comet	○○●○
114. Auroras form when charged particles strike the:	upper atmosphere	ground	ocean	moon	●○○○
115. The magnetic poles of the earth are inclined to the geographic poles at an angle of:	23.5°	11.3°	45°	90°	○●○○
116. The line joining the earth's geographic poles is its:	magnetic axis	equator	geographical axis	tropic	○○●○

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Questions	A	B	C	D	A B C D
117. A compass needle points towards:	earth's magnetic pole	the moon	the sun	the equator	●○○○
118. Geographic north of the earth is near the earth's magnetic:	north pole	equator	south pole	centre	○○●○
119. The strength of the earth's magnetic field:	is constant everywhere	is highest at the equator	varies from place to place	is zero at the poles	○○●○
120. Which instrument shows the direction of the earth's magnetic field?	Thermometer	Barometer	Ammeter	Compass	○○○●
121. A freely suspended bar magnet comes to rest along the:	east-west direction	vertical	north-south direction	random direction	○○●○
122. The north pole of a freely suspended magnet points towards the earth's:	geographic south	east	west	geographic north	○○○●
123. Permanent magnets are used in:	ordinary candles	MRI machines	bricks	plain paper	○●○○
124. Permanent magnets are used in:	ice cream	textbooks	particle accelerators	fabric	○○●○
125. Magnetic tape recording uses materials such as:	wood	iron oxide	glass	rubber	○●○○
126. Which material is used for magnetic recording?	Paper	Wax	Plastic only	Chromium oxide	○○○●
127. Magnetic recording media include magnetic tape and:	photographs	pencils	mirrors	disks	○○○●
128. A speaker uses a permanent magnet and a:	thermometer	lens	electromagnet	prism	○○●○
129. In a speaker, the cone vibrates because of the interaction between:	two plastic parts	the fields of permanent magnet and electromagnet	air and water	heat and light	○●○○
130. In a speaker, the sound signal flows as an electric current through the coil of the:	permanent magnet	electromagnet	cone	glass	○●○○
131. The cone (diaphragm) of a speaker is made of:	iron only	glass	solid rock	flexible material	○○○●
132. Electromagnets are used in:	only compasses	none	only toys	home appliances	○○○●
133. Electromagnets are used in:	plain stones	electric bells	ice	mirrors	○●○○

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Questions	A	B	C	D	A B C D
134. Electromagnets can be switched off by:	heating	stroking	stopping the current	cooling	○○●○
135. A magnetic crane uses an electromagnet to:	cut wood	measure time	lift and drop iron objects	cool metals	○○●○
136. Domain theory explains magnetisation by:	loss of electrons	change of colour	alignment of domains	change of mass	○○●○
137. Which statement about a bar magnet and a solenoid is correct?	Their fields are opposite	They have the same pattern of magnetic field	A bar magnet has no field	A solenoid has no poles	○●○○
138. Bio-magnetism deals with the magnetic fields in:	rocks	metals	plastics	living organisms	○○○●
139. The magnetic field strength of a solenoid is zero when the current is:	zero	maximum	doubled	reversed	●○○○
140. Iron is magnetised when its domains:	vanish	become random	become empty	align with the field	○○○●
141. Magnetic field due to a current-carrying wire shows that currents produce:	sound	colours	mass	magnetism	○○○●
142. Magnetic force between two like poles is:	attractive	zero	gravitational	repulsive	○○○●
143. The N-pole of one magnet near the S-pole of another produces:	attraction	repulsion	no force	heat	●○○○
144. Magnetism that is induced in a material only while it is in an external field is found in:	permanent magnets	neutral zones	loadstones	temporary magnets	○○○●
145. The SI unit tesla is a unit of:	electric current	magnetic field strength	force	energy	○●○○
146. The spinning motion of an electron produces:	an electric current only	a tiny magnetic field	heat	sound	○●○○
147. A magnet cut into three pieces gives:	three magnets each with N and S poles	three monopoles	one magnet and two blanks	no magnets	●○○○
148. Which of these best shows the field of a bar magnet?	Iron filings pattern	A thermometer	A voltmeter	A stop watch	●○○○
149. The magnetic field around a current-carrying wire is produced by:	moving charges	stationary charges	heat	light	●○○○
150. The magnetic field of the earth is called:	solar field	lunar field	geomagnetic field	atomic field	○○●○

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