Magnetic Particle Testing Method Questions & Answers Book fourth edition

Errata – first printing 03/18

The following text correction pertains to the fourth edition of *ASNT Questions & Answers Book: Magnetic Particle Testing Method.* Subsequent printings of the document will incorporate the corrections.

The attached corrected pages apply to the first printing 03/18. In order to verify the print run of your book, refer to the copyright page. Ebooks are updated as corrections are found.

Page	**Correction**
p. 23	In question 18, answer b should be changed to: 1800 A.
p. 28	In the answer Key, 6 should be changed to: 6a.

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17. To examine a part 127 mm (5 in.) long and 51 mm (2 in.) in diameter using a 5-turn coil and headstock magnetic particle machine, what amperage should be used for longitudinal magnetization?

a. 3000 A
b. 3600 A
c. 4500 A
d. 10 000 ampere-turns

D.20; E.19

18. To examine a bar 381 mm (15 in.) long and 51 mm (2 in.) in diameter, what amperage should be used on a stationary magnetic particle machine to create a direct circular magnetic field?

a. 750 A
b. 1800 A
c. 1800 ampere-turns
d. 49 000 ampere-turns

D.19

19. If the same amperage is passed through a 25 mm and 51 mm (1 in. and a 2 in.) diameter bar of the same length and material, the strength of the magnetic field at the surface:

a. will be the same for both bars.
b. of the 25 mm (1 in.) bar will be one-half that of the 51 mm (2 in.) bar.
c. of the 25 mm (1 in.) bar will be approximately twice that of the 51 mm (2 in.) bar.
d. of the 51 mm (2 in.) bar will be approximately four times that of the 25 mm (1 in.) bar.

D.22–23

20. If the same amperage is passed through a 25 mm (1 in.) diameter bar and a 51 mm (2 in.) diameter bar of the same length and material, the strength of the magnetic field at the center of:

a. both bars will be 0.
b. the 25 mm (1 in.) bar will be one-half that of the 51 mm (2 in.) bar.
c. the 51 mm (2 in.) bar will be one-half that of the 25 mm (1 in.) bar.
d. the 25 mm (1 in.) bar will be approximately one-fourth that of the 51 mm (2 in.) bar.

D.22–23

21. When a magnetic field is induced in a part with prods spaced 152 mm (6 in.) apart, the field is a:

a. circular field.
b. residual field.
c. solenoid field.
d. longitudinal field.

A.77; B.53, 112–113; D.29

22. When circular magnetization is used to detect subsurface discontinuities, direct current is used instead of alternating current because:

a. particle mobility is no longer a factor.
b. there is no logical reason to use direct current instead of alternating current.
c. direct current saturates the magnetic particles better than alternating current.
d. the skin effect of alternating current reduces the maximum depth at which discontinuities can be found.

B.57, 116–119; D.13

23. An inspection technique in which an initial magnetizing force is applied to a part and then reduced to a lower continuous value is called the:

a. surge technique.
b. residual technique.
c. multivector technique.
d. continuous technique.

B.32–33

24. Which of the statements below is most appropriate concerning Materials I and II represented by the hysteresis curves shown in Figure 1?

a. Material I has a lower coercivity than Material II.
b. Material I has a lower retentivity than Material II.
c. Material II has a lower retentivity than Material I.
d. Material II has a higher coercivity than Material I.

A.39–42; B.282; D.5–6

25. Considering the curves shown in Figure 1, Material II in comparison to Material I indicates that the material:

a. has a high coercive force.
b. would make an excellent permanent magnet.
c. has a high retentivity.
d. has a high permeability.

A.39–42; B.282; D.5–6

Answers

1b	2b	3c	4d	5b	6a	7d	8b	9b	10a	11c	12a	13c	14a
15c	16b	17b	18b	19c	20a	21a	22d	23a	24c	25d	26c	27b	28a
29c	30b	31c	32a	33a	34c	35b	36d	37b	38c	39b	40b	41c	42a
43d	44d	45b	46d	47b	48a	49d	50d	51b	52b	53d	54c	55d	56a
57b	58d	59d											