Unit 3 - Week 2

Assignment 2

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

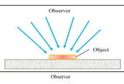
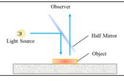
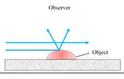
Due on 2020-03-11, 23:59 IST.

1) Which of the following statements is/are correct regarding the non-destructive testing (NDT)? *1 point*

- NDT allows inspection without interfering with a product's final use.
- Non-destructive tests are used in manufacturing, fabrication and in-service inspections to ensure product integrity and reliability, to control manufacturing processes, lower production costs and to maintain a uniform quality level.
- In-service NDT inspections are used to ensure that the products in use continue to have the integrity necessary to ensure their usefulness and the safety of the public.
- All of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
All of these.

2) Match the following illumination techniques used in visual inspection with their appropriate schematic: *1 point*

Column I	Column II
A. Front Illumination	1. 
B. Oblique Illumination	2. 
C. Coaxial Illumination	3. 

- A-1, B-3, C-2
- A-3, B-2, C-1
- A-3, B-1, C-2
- A-1, B-2, C-3

No, the answer is incorrect.
Score: 0
Accepted Answers:
A-1, B-3, C-2

3) Which of the following statements is true regarding specular reflection? *1 point*

- Angle of incident light is greater than angle of reflected light.
- Angle of incident light is equal to angle of reflected light.
- Angle of incident light is less than angle of reflected light.
- None of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Angle of incident light is equal to angle of reflected light.

4) Which of the following non-destructive inspection technique is based on the working principle of capillary action of low surface tension fluids? *1 point*

- Radiography inspection
- Dye penetrant inspection
- Acoustic emission inspection
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
Dye penetrant inspection

5) Which of the following is the correct sequence of operations usually performed during dye penetrant inspection? *1 point*

- Surface preparation--> Developer application --> Penetrant application --> Penetrant Dwell --> Excess penetrant removal --> Indication development --> Inspection --> Post cleaning.
- Surface preparation --> Penetrant application --> Penetrant Dwell --> Excess penetrant removal --> Indication development --> Inspection --> Developer application --> Post cleaning.
- Surface preparation --> Penetrant application --> Penetrant Dwell --> Excess penetrant removal --> Developer application --> Indication development --> Inspection --> Post cleaning.
- Surface preparation --> Penetrant application --> Developer application --> Penetrant Dwell --> Excess penetrant removal --> Indication development --> Inspection --> Post cleaning.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Surface preparation --> Penetrant application --> Penetrant Dwell --> Excess penetrant removal --> Developer application --> Indication development --> Inspection --> Post cleaning.

6) For a penetrant material to be effective, the contact angle should be: *1 point*

- greater than 90 degrees.
- equal to 90 degrees.
- very close to zero degrees.
- greater than 95 degrees.

No, the answer is incorrect.
Score: 0
Accepted Answers:
very close to zero degrees.

7) Which of the following is an example of direct magnetization technique? *1 point*

- Head shot technique
- Using permanent magnets
- Using electromagnet yoke
- All of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Head shot technique

8) Identify the incorrect statement regarding magnetic particle inspection. *1 point*

- Magnetic particle inspection replaced the oil-and-whiting method as the method of choice by the railroad industry in 1930s.
- Magnetic particle inspection uses magnetic fields and small magnetic particles (i.e. iron filings) to detect flaws in components.
- Magnetic particle inspection is suitable for detecting surface and shallow subsurface discontinuities in ferromagnetic materials such as iron, nickel, cobalt, and some of their alloys.
- None of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
None of these.

9) Which of the following is/are the desired characteristics of magnetic particles used in magnetic particle inspection? *1 point*

- High magnetic permeability
- Low retentivity
- High visibility and contrast
- All of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
All of these.

10) Eddy currents are electrical currents induced within a conductor by a _____ magnetic field. *1 point*

- constant
- constant and uniform
- varying
- constant and non-uniform

No, the answer is incorrect.
Score: 0
Accepted Answers:
varying

11) The depth that the eddy currents are about _____ as strong as they are on the surface is known as the standard depth of penetration or skin depth. *1 point*

- 37%
- 85%
- 75%
- 67%

No, the answer is incorrect.
Score: 0
Accepted Answers:
37%

12) The depth of penetration of eddy current in a test object depends upon: *1 point*

- Frequency of the excitation current
- Electrical conductivity of the specimen
- Magnetic permeability of the specimen
- All of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
All of these.

13) When crystals of some materials are subjected to a mechanical pressure in a certain direction, charges of opposite sign develop on their faces, normal to the direction of the applied pressure. This phenomenon is known as the _____. *1 point*

- Piezoelectric effect
- Photoelectric effect
- Raman effect
- Butterfly effect

No, the answer is incorrect.
Score: 0
Accepted Answers:
Piezoelectric effect

14) On the basis of beam orientation, piezoelectric transducers can be classified into: *1 point*

- Contact Transducer, Immersion Transducer, Air-coupled Transducer
- Normal Beam Transducer, Angled Beam Transducer
- Single Element Transducer, Dual Elements Transducer
- None of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Normal Beam Transducer, Angled Beam Transducer

15) Match the different data presentation techniques in ultrasonic inspection with their correct description: *1 point*

Data Presentation Technique	Description
1. A-scan	A. Plan type view of the test specimen and discontinuities by mechanically or electrically scanning an X-Y plane.
2. B-scan	B. Displays the amount of received ultrasonic energy as a function of time.
3. C-scan	C. Profile view (cross-sectional) of a test specimen.

- 1-A, 2-B, 3-C
- 1-A, 2-C, 3-B
- 1-B, 2-C, 3-A
- 1-C, 2-B, 3-A

No, the answer is incorrect.
Score: 0
Accepted Answers:
1-B, 2-C, 3-A