

**NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.**

<b>Course/Branch</b> : BE / EEE	<b>Year / Semester</b> : IV / VII	Format No.	NAC/TLP-07a.13
<b>Subject Code</b> : EI8075	<b>Subject Name</b> : Fibre Optics And Laser Instrumentation	Rev. No.	02
<b>Unit No</b> : 04	<b>Unit Name</b> : Industrial Application of Lasers	Date	30.09.2020

**OBJECTIVE TYPE QUESTION BANK**

<b>S. No.</b>	<b>Objective Questions (MCQ /True or False / Fill up with Choices )</b>	<b>BTL</b>
1	Which of the following material properties should match before joining to components by a transmission welding method?  A) Electrical properties <b>B) Thermal properties</b> C) Weld ability D) Tensile strength	L1
2	Which of the following is not true about metrology lasers used in laser inspection?  A) These are high-power instruments B) Used for rapid non-contact gauging of delicate parts <b>C) Have low optical cross-talk</b> D) Wide dynamic range	L2
3	Which technique is not suitable to measure large diameter parts or large gaps?  <b>A) Diffraction pattern technique</b> B) Scanning laser technique C) Photodiode array imaging D) Laser triangulation sensor	L2
4	What is the accuracy of scanning laser gauge for objects of 10-50 mm diameter?  A) $\pm 0.15 \mu\text{m}$ <b>B) <math>\pm 0.25 \mu\text{m}</math></b> C) $\pm 0.35 \mu\text{m}$ D) $\pm 0.45 \mu\text{m}$	L3
5	Which of the following is true about resolution in two frequency laser interferometer?  A) Straightness resolution – 90 nm B) Angular resolution – 3 arc seconds C) Flatness resolution – 2 nm <b>D) Linear resolution – 1 nm</b>	L2
6	Why is an electrical isolation required between several portions of an electronic circuit?  A) Provision of high voltage protection B) Reduction in noise level <b>C) Both a &amp; b</b>	L2

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	D) None of the above	
7	<p>Laser welds are not influenced by _____</p> <p>A) electric field  <b>B) magnetic field</b>                  C) radio waves                  D) ultraviolet ray</p>	L1
8	<p>Laser is used in LIDAR for what purpose?</p> <p>A) High-Speed Photography  <b>B) Range finder</b>                  C) Optical Carrier signal                  D) Drilling</p>	L1
9	<p>What is Industrial Lasers</p> <p>A) <b>High beam power</b>                  B) Low beam power                  C) Low Bandwidth                  D) High Bandwidth</p>	L2
10	<p>How much accuracy can be achieved by photodiode array imaging?</p> <p>A) <b>±0.05 μm</b>                  B) ±0.15 μm                  C) ±0.5 μm                  D) ±0.25 μm</p>	L2
11	<p>Which application is ideally suited for two frequency laser interferometer?</p> <p>A) <b>Pitch and yaw measurement</b>                  B) Hole diameters                  C) Thickness measurement                  D) Measurement of edge locations</p>	L3
12	<p>Laser beam welding is a _____ joining process.</p> <p>A) Fission  <b>B) Fusion</b>                  C) Coherent</p>	L1

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	D) Plastic	
13	Inert gas shielding is generally employed to protect _____  A) laser beam <b>B) molten puddle of metal</b> C) filler electrode D) lenses	L3
14	The lasing material is a cylinder of a diameter of about _____ mm.  A) 5 <b>B) 9</b> C) 17 D) 20	L2
15	Penetration welding is characterised by _____  A) tapered trail B) irregularities in the weld <b>C) parallel sided fusion zone</b> D) planner welds	L2
16	The joining efficiency and the energy spent during the welding process are directly proportional.  A) <b>True</b> B) False	L2
17	LIDAR stands for  A) <b>Light Detection and Ranging</b> B) Light detected and Ranking C) Losses detected and Ranging D) Losses detected and ranging	L2
18	Which one of the following are the advantages of LIDAR for data collection over most other technique  A) Higher resolution B) Centimeter accuracies C) Ground detection in forested terrain	L1

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	<b>D) All of the above</b>	
19	<p>Airborne platforms are also idea for collecting bathymetric data in relatively clear shallow water. Combined topographic and bathymetric lidar systems on airborne platforms are used to map shoreline and nearshore areas</p> <p>A) 50 B) 100 C) 200 <b>D) 1000</b></p>	L2
20	<p>The heat source intensity for laser beam welding lies in the range _____</p> <p>A) <math>10^5-10^7</math> B) <math>10^5-10^8</math> C) <math>10^{10}-10^{12}</math> <b>D) <math>10^{12}-10^{14}</math></b></p>	L3
21	<p>Laser welding efficiency can be calculated by formula _____</p> <p>A) Velocity*thickness/power <b>B) Velocity*power/thickness</b> C) Power*thickness/velocity D) Velocity*thickness*power</p>	L1
22	<p>Which of the following is a commercially used laser?</p> <p>A) Nd-GAG laser <b>B) 1.06 <math>\mu</math>m wavelength CO2 laser</b> C) 2 <math>\mu</math>m wavelength CO2 laser D) Nd- YAS laser</p>	L2
23	<p>In case of laser welding, heat input is _____ to fuse the weld metal.</p> <p>A) equal to the required amount <b>B) close to the minimum required</b> C) greater by 200 J than required D) approximately higher by atleast 320 J</p>	L1
24	<p>Which of the following holds true about laser welding process?</p>	L2

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	<p>A) Time for welding thick sections is more in case of LBW  <b>B) Shielding gas is used to melt the burr formed during the machining</b>                  C) In LBW, sometimes filler metals are used                  D) In Nd- YAG lasers, crystals of C14 are used as the lasing material</p>	
25	<p>Why is an electrical isolation required between several portions of an electronic circuit?</p> <p>A) Provision of high voltage protection                  B) Reduction in noise level  <b>C) Both a &amp; b</b>                  D) None of the above</p>	L2
26	<p>If the peak transmitted power in a radar system is increased by a factor of 16, the maximum range will be increased by a factor</p> <p>A) <b>2</b>                  B) 4                  C) 8                  D) 16</p>	L1

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