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| Question | MCQ- It is multiple choice question. It has only one option as correct.  A linearly elastic and perfectly plastic material is loaded slightly above the proportionality limit. This will lead to \_\_\_\_\_\_\_\_\_ | |
| Type | MCQ | |
| Option | (a) Fracture | correct |
| Option | (b) Small deformation | incorrect |
| Option | (c) Large deformation | incorrect |
| Option | (d) Cracking | incorrect |
| Solution | Explanation coming soon | |
| Marks | 1 | 0 |

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| Question | MCQ- It is multiple choice question. It has only one option as correct. It is also having OMML equations.  The velocity potential function for a source varies with the distance *r* as, | |
| Type | MCQ | |
| Option | (a) | incorrect |
| Option | (b) | incorrect |
| Option | (c) | incorrect |
| Option | (d) | correct |
| Solution | Explanation coming soon | |
| Marks | 1 | 0 |

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| Question | MCQ- It is multiple choice question. It has only one option as correct. It is also having OMML equations and images.  The figure shows arrangements of springs. The*y* have stiffnesses and as marked. Which of the following arrangements offers a stiffness = | |
| Type | MCQ | |
| Option |  | correct |
| Option |  | incorrect |
| Option |  | incorrect |
| Option |  | incorrect |
| Solution | Explanation coming soon | |
| Marks | 1 | 0 |

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| Question | NAT- This is numerical ability type question. It has range of numerical value as correct answers. It is containing OMML type equations.  The surface integral over the surface  of the sphere , where and is the unit outward surface normal, yields \_\_\_\_\_\_\_\_\_\_\_\_\_. | |
| Type | NAT | |
| Option | range(29:31) |  |
| Solution | Explanation coming soon | |
| Marks | 1.67 | 0.33 |

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| Question | MCQ- It is multiple choice question. It has only one option as correct. It is also having ole objects type equations.  If  is a complex analytic function of , where , then | |
| Type | MCQ | |
| Option | (a) | incorrect |
| Option | (b) | incorrect |
| Option | (c) | incorrect |
| Option | (d) | correct |
| Solution | Explanation coming soon | |
| Marks | 1 | 0 |

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| Question | NAT- This is numerical ability type question. It has range of numerical value as correct answers. It is also having ole objects type equations.  Consider the matrix  whose eigenvectors corresponding to eigenvalues  and  are  and . respectively. The value of  is \_\_\_\_\_\_\_\_\_\_ | |
| Type | NAT | |
| Answer | Range(163:163) | |
| Solution | Explanation coming soon | |
| Marks | 1.67 | 0.33 |

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| Question | Match the instruments with the physical quantities they measure:   |  |  | | --- | --- | | **Instrument** | **Measurement** | | A. Pilot tube | 1. r.p.m. of a shaft | | B. McLeod Gauge | 2. Displacement | | C. Planimeter | 3. Flow velocity | | D. LVDT | 4. Vacuum | |  | 5. Surface finish | |  | 6. Area | | |
| Type | MCQ | |
| Option | (a) A-1, B-5, C-4, D-6 | incorrect |
| Option | (b) A-3, B-2, C-6, D-5 | incorrect |
| Option | (c) A-3, B-4, C-5, D-2 | correct |
| Option | (d) A-4, B-3, C-2, D-5 | incorrect |
| Solution | Explanation coming soon | |
| Marks | 2 | 0.66 |

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| Question | NAT- This is numerical ability type question.  A project starts with activity A and ends with activity F. The precedence relation and durations of the activities are as per the following table:   |  |  |  | | --- | --- | --- | | Activity | Immediate Predecessor | Duration  (days) | | A | – | 4 | | B | A | 3 | | C | A | 7 | | D | B | 14 | | E | C | 4 | | F | D,E | 9 |   The minimum project completion time (in days) is \_\_\_\_\_\_\_\_\_ | |
| Type | NAT | |
| Answer | Range(12:15) | |
| Solution | Explanation coming soon | |
| Marks | 1.67 | 0.33 |

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| Question | MSQ-It is multiple section question type. More than one options are correct.  Assuming the material considered in each statement is homogeneous, isotropic, linear elastic, and the deformations are in the elastic range, which one or more of the following statement(s) is/are TRUE? | |
| Type | MSQ | |
| Option | (a) A body subjected to hydrostatic pressure has no shear stress. | correct |
| Option | (b) If a long solid steel rod is subjected to tensile load, then its volume increases. | correct |
| Option | (c) Maximum shear stress theory is suitable for failure analysis of brittle materials. | incorrect |
| Option | (d) If a portion of a beam has zero shear force, then the corresponding portion of the | incorrect |
| Solution | Explanation coming soon | |
| Marks | 2 | 0.66 |

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| Question | MSQ-It is multiple section question type. More than one options are correct.  Which of the following heat treatment processes is/are used for surface hardening of steels? | |
| Type | MSQ | |
| Option | (a) Carburizing | correct |
| Option | (b) Cyaniding | correct |
| Option | (c) Annealing | incorrect |
| Option | (d) Carbonitriding | correct |
| Solution | Explanation coming soon | |
| Marks | 2 | 0.66 |

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| Question | FIB-Fill in the blanks type question.  In ultrasonic machining the tool \_\_\_\_\_\_ (vibrate/cut) at very high frequency with the help of \_\_\_\_\_\_(dielectric/piezoelectric) transducers. | |
| Type | FIB | |
| Option | vibrate |  |
| Option | piezoelectric |  |
| Solution | Explanation coming soon | |
| Marks | 1 | 0 |

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| Question | FIB-Fill in the blanks type question.  In the case of turbulent flow of a fluid through a circular tube ( as compared to the case of laminar flow at the same flow rate) the maximum velocity is\_\_\_\_\_\_\_\_\_ (higher/lower), shear stress at the wall is \_\_\_\_\_\_\_\_\_\_\_\_(higher/lower), and the pressure drop across a given length is \_\_\_\_\_\_\_(higher/lower). The correct words for the blanks are, respectively: | |
| Type | FIB | |
| Option | higher |  |
| Option | lower |  |
| Option | higher |  |
| Solution | Explanation coming soon | |
| Marks | 2 | 0.66 |

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| Question | TF-This is a true False type of question.  Electric discharge machining imposes larger forces on tool than Electrochemical machining. | |
| Type | TF | |
| Answer | false | |
| Solution | Explanation coming soon | |
| Marks | 1 | 0.33 |

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| Question | TF-This is a true False type of question.  Electric discharge machining is more efficient process than Electrochemical machining for producing large non-circular holes. | |
| Type | TF | |
| Answer | true | |
| Solution | Explanation coming soon | |
| Marks | 1 | 0.33 |

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| Question | NAT- This is numerical ability type question. It has range of numerical value as correct answers.  A mass of 2000 kg is currently being lowered at a velocity of 2 m/s from the drum as shown in the figure. The mass moment of inertia of the drum is 150 kg-m2. On applying the brake, the mass is brought to rest in a distance of 0.5 m. The energy absorbed by the brake (in kJ) is \_\_\_\_\_\_\_\_\_\_ | |
| Type | NAT | |
| Option | range(29:31) |  |
| Solution | Explanation coming soon | |
| Marks | 1.67 | 0.33 |