

Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: MEDLO5011 and Course Name: PTD

Time: 1 hour

Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

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| Q1.       | Which of the following material can be used for coating on tools?   |
| Option A: | HSS   |
| Option B: | TiCN  |
| Option C: | WC  |
| Option D: | cBN   |
|           |   |
| Q2.       | In drawing operation, increase of die radius.....   |
| Option A: | Has much influence on punch load and it decreases   |
| Option B: | Does not influence the punch load much  |
| Option C: | Punch load increases  |
| Option D: | Punch load depends on other factors   |
|           |   |
| Q3.       | “Springback” Phenomenon is related to which process   |
| Option A: | Slitting  |
| Option B: | Bending   |
| Option C: | Drawing   |
| Option D: | Piercing  |
|           |   |
| Q4.       | Back up plate is usually made from  |
| Option A: | Cu alloy  |
| Option B: | Mo  |
| Option C: | Plain carbon steel  |
| Option D: | Cast iron   |
|           |   |
| Q5.       | Shearing the sheet into two or more pieces is known as?   |
| Option A: | Parting   |
| Option B: | Perforating   |
| Option C: | Notching  |
| Option D: | Lancing   |
|           |   |
| Q6.       | Determine the die and punch sizes for blanking a circular disc of 20mm diameter from a sheet whose thickness is 2mm. ( shear strength =294 MPa) |
| Option A: | 20mm, 19.78mm   |
| Option B: | 20mm, 19.1mm  |
| Option C: | 19.5mm, 20mm  |

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| Option D: | 19.6mm, 20mm  |
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| Q7.       | What is Hardness number of water hardening steel  |
| Option A: | 58-60   |
| Option B: | 60-61   |
| Option C: | 57-60 HRC   |
| Option D: | 62-66 HRC   |
|           |   |
| Q8.       | What is the use of clutch in a power press?   |
| Option A: | To control speed  |
| Option B: | To control force  |
| Option C: | To control Torque   |
| Option D: | To control speed and force both.  |
|           |   |
| Q9.       | Tonnage capacity in Hydraulic press is given by   |
| Option A: | perimeter x piston area   |
| Option B: | Shear stress x oil pressure in cylinder   |
| Option C: | Thickness x shear stress  |
| Option D: | Piston area x oil pressure in cylinder  |
|           |   |
| Q10.      | Number of blanks can be calculated as   |
| Option A: | $N=L-a/s$   |
| Option B: | $N=L-w/b$   |
| Option C: | $N=L-b/s$   |
| Option D: | $N=L-h/b$   |
|           |   |
| Q11.      | Cutting operation is combined with bending/drawing operation in following die   |
| Option A: | Simple die  |
| Option B: | Progressive die   |
| Option C: | Compound die  |
| Option D: | Combination die   |
|           |   |
| Q12.      | Calculate the percentage Utilization for sheet metal(2440 x 45.5) size. Given:-<br>Number of blanks= 22, Area of blank= 950mm. <sup>2</sup>       |
| Option A: | 45  |
| Option B: | 56  |
| Option C: | 73  |
| Option D: | 18.83   |
|           |   |
| Q13.      | A metal disc of 20mm diameter is to be punched from a sheet of 1.5mm thickness. The punch and die clearance is 3%. The required blank diameter is |
| Option A: | 20.09   |
| Option B: | 20.5  |
| Option C: | 20.2  |
| Option D: | 20  |
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| Q14.      | Triple action presses are used for  |
| Option A: | washer  |
| Option B: | Wheel rims  |
| Option C: | Construction girders  |
| Option D: | Motor car body panels   |
|           |   |
| Q15.      | Calculate the press capacity for cutting the blank of diameter 6 mm.(given:-<br>$t=2\text{mm}$ , shear stress= $340\text{N/mm}^2$ ) |
| Option A: | 1.305 Tonne   |
| Option B: | 0.5 Tonne   |
| Option C: | 12 Tonne  |
| Option D: | 50 Tonne  |
|           |   |
| Q16.      | Which techniques use to prevent the springback.   |
| Option A: | Overbending   |
| Option B: | Drilling  |
| Option C: | threading   |
| Option D: | hammering   |
|           |   |
| Q17.      | In piercing and punching operations, the angle of shear is provided .....   |
| Option A: | Die   |
| Option B: | Punch   |
| Option C: | Half on die and half on punch   |
| Option D: | Die or punch depending on material and thickness of sheet   |
|           |   |
| Q18.      | Eccentric type mechanical press is suitable for   |
| Option A: | Blanking  |
| Option B: | Pressing  |
| Option C: | Drawing   |
| Option D: | Bending   |
|           |   |
| Q19.      | What will be the screw diameter for $T>19$ according to empirical rule  |
| Option A: | $t$   |
| Option B: | $0.3 t$   |
| Option C: | $0.5 t$   |
| Option D: | $0.4 t$   |
|           |   |
| Q20.      | U-bending operation which is also called as.....  |
| Option A: | Channel bending   |
| Option B: | V-bending   |
| Option C: | Angel bending   |
| Option D: | Rolling bending   |
|           |   |
| Q21.      | ..... operation there is cutting of sheet metal through a small length and bending this small cut portion downwards.                |
| Option A: | Shaving   |

|           |  |
|-----------|--|
| Option B: | Shearing   |
| Option C: | Slitting   |
| Option D: | Lancing  |
|           |  |
| Q22.      | Which is not metal forming operations  |
| Option A: | Bending  |
| Option B: | Drawing  |
| Option C: | Embossing  |
| Option D: | Drilling   |
|           |  |
| Q23.      | In a compound die  |
| Option A: | Only one operation is performed at each stroke of the ram  |
| Option B: | Two or more operations are performed simultaneously at the single stroke of the ram                          |
| Option C: | Two or more cutting operations are performed at one station of the press in every stroke of the ram          |
| Option D: | Both cutting and non-cutting operations are performed at one station of the press in every stroke of the ram |
|           |  |
| Q24.      | Two or more work pieces can be produced at each stroke of press using  |
| Option A: | Multiple dies  |
| Option B: | Progressive dies   |
| Option C: | Transfer dies  |
| Option D: | Simple dies  |
|           |  |
| Q25.      | Number of strokes available in open frame presses are  |
| Option A: | 90 to 120 per minute   |
| Option B: | 50 to 60 per minute  |
| Option C: | 150 to 180 per minute  |
| Option D: | 40 to 45 per minute  |