

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|---|-------------------|-----------------|------------------|------------------------------------|----------------------------------|
| 1 | The control Valves on the Delivery pipe of the Pump with duty head of 98 m , shall be of rating. | 2 | PN 1 | PN 1.6 | PN .6 | PN 2.4 |
| 2 | The design criteria for up surge protection is that maximum pressure should not exceedtimes the working pressure or pump head using surge arresting arrangement . | 3 | 1.2 | 2 | 1.5 | 5 |
| 3 | The Induction Motor proposed for the VT pump of Lift irrigation scheme, to operate on 50 Hz, is of the 6 poles then RPM of the pump is | 3 | 750 | 3000 | 1000 | 1500 |
| 4 | For Cavitation free operation of the Centrifugal Pump, NPSHR should be always NPSHA. | 1 | less than | greater than | equal to | None of these |
| 5 | The VT pump of 98 m duty head is in operation at POL . The pressure gauge is provided on delivery pipe with a level difference of 8 m above the POL . To operate the pump at BEP, the Butterfly valve should be adjusted to suit the pressure gauge reading of..... kg/cm2. | 4 | 9.8 | 10.6 | 8 | 9 |
| 6 | The performance guarantee of the VT Pumps at site is conducted in accordance with | 4 | IS 10981 | IS 325 | BS 5115 | IS 9137 |
| 7 | Lift irrigation schemes comprising 6 VT pumps of 120 Kw, the suitable HT Transformer specifications with 20 % auxiliary load will be..... | 1 | 33/0.415 KV | 132/11 Kv, | 132/11 Kv | 132/6.6 KV |
| 8 | For the motor of 1000 kw and 6.6 Kv voltage rating, the Motor Feeder of HT Panel should haveAmp rating VCB. | 4 | 1800 | 3200 | 1240 | 630 |
| 9 | For the Lift Irrigation Scheme comprising 2 nos of pumps of 120 HP, the recommended power supply voltage will be.....V. | 4 | 11 | 11000 | 3300 | 415 |
| 10 | The recommended control system voltage of HT panel for the Lift Irrigation scheme comprising 8 pumps of 1315 kw will be of..... | 1 | 110 v DC | 220 v AC | 110 v AC | 24 v DC |
| 11 | The hoisting capacity required for standard 12 X 8 m Radial Gate in Maharashtra isMT. | 4 | 20 | 36 | 44 | 42 |
| 12 | While designing a power transmitting stem of Screw stem hoist of the .9 X .9 m Sliding gate, against buckling failure, the end conditions for the stem are taken as | 4 | Both ends fixed | Both ends hinged | One end fixed and other end hinged | One end fixed and other end free |
| 13 | In manufacturing of Rope drum hoist of 42 MT, The type of fit between Journal bearing of drum and axle is | 2 | Interference | Clearance | Transit | None of these |
| 14 | The clearance between trunnion bracket and anchor girder of radial gate assembly is filled by to ensure uniform bearing surface | 1 | Zink | Copper | Tin | None of these |
| 15 | Find out the HP required for 20 MT capacity hoist for which lifting speed is 0.45 m/min and overall efficiency of 45% | 2 | 7.5 HP | 5 HP | 20 HP | 15 HP |
| 16 | The sluice gate of major dam are provided with 6 rollers on each side , the designed diameter of the roller pin is 170 mm, the suitable spherical bearing selection from given list will be..... | 4 | 22232 | 22230 | 22228 | 22234 |
| 17 | In rope drum hoist , depth of the groove on the drum is providedtimes of the diameter of wire rope. | 2 | 35 | 0.35 | 25 | 0.25 |
| 18 | Generally Brinell Hardness Number of roller wheels of the hydraulic gates isfor cast steel wheels. | 3 | 180 | 220 | 320 | 420 |
| 19 | Digging reach of 20/22 Ton excavator is- | 2 | 11-12 mt. | 9-10 mt | 8-9 mt | 12-13 mt |
| 20 | A trench is 3 m deep and 1 m wide at the bottom. The slope ratio is 1.5:1. What is the total width of the excavation? | 3 | 5.5 m | 7.0 m | 10.0 m | 11.0 m |
| 21 | A Cut of Trench (COT) to be excavated is 1 Km long, 5 m wide and 4.5 m deep. What is the volume to be removed? | 1 | 22500 cub m | 225 TCM | 22.5 cub m | 2250 cub m |
| 22 | Considering Techno commercial aspect Which of the following machine is most suitable for silt removal from deep Lake? | 3 | Dozer | Loader | Excavator | Backhoe loader |
| 23 | Track tension required in operation of Excavator on a soft ground condition is | 1 | 70-80 mm | 30-40 mm | 90-100 mm | 20-30 mm |
| | One or both side tracks of a machine may become inoperable due to – | 3 | B & C | B,C &D | A,B & D | All of the above. |

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| 24 | A) Damaged centre joint | | | | | |
| | B) Broken travel motor | | | | | |
| | C) Overly tensioned or slackened crawler chain | | | | | |
| | D) Faulty pilot circuit line | | | | | |
| 25 | When the Excavator is continuously used with its rock breaker attachment, then its Hydraulic oil need to be changed after..... hours irrespective of grade of the Hydraulic oil. | 3 | 5000 hours | 1500 hours | 500 hours | 2500 hours |
| 26 | The relief valve pressure required for travel system of mid-sized excavator is..... | 3 | 50 kgf/sq.cm | 280 kgf/sq.cm | 350 kgf/sq.cm | 200 kgf/sq.cm |
| 27 | Dumping height of EX200/220 excavator is- | 3 | 4 mt. | 9 mt. | 6 mt. | 8 mt. |
| 28 | The relief valve pressure required for boom and arm bucket of mid-sized excavator is..... | 4 | 250 kgf/sq.cm | 410 kgf/sq.cm | 300 kgf/sq.cm | 350 kgf/sq.cm |
| 29 | The total weight of Tata Ex 200 excavator is | 1 | 20 MT | 25 MT | 22 MT | 44 MT |
| 30 | Considering techno commercial aspect, the machine suitable for work of land levelling with minor cutting and filling is | 2 | Excavator | Dozer | Loader | Grader |
| 31 | Considering techno commercial aspect, suitable unit | 1 | Excavator and Tipppers | Dozers and Tipppers | Loader and Tipppers | Excavator and Dozer |
| | For desilting of large tank will be | | | | | |
| 32 | In B1 tender of Pumping Machinery pertaining to Lift Irrigation Scheme, the PVC is applicable for | 4 | Pumps | Motor | HT panel | All items given in the options |
| 33 | Under B1 contract, Contractor is binding to execute 25% excess quantity, if demanded for completion of work, in accepted schedule of rate under | 3 | Clause 4 | Clause 13 | Clause 38 | None of these |
| 34 | Form No is used for payment to contractor when intermediate payment (R A Bill) is proposed. | 4 | 101 | 46 | 70 | 47 |
| 35 | For calculating PVC with given formula for Motor, the monthly indices published byare accepted | 2 | IPMA | IEEPMA | BHRA | HIS |
| 36 | The contractors recovery is recorded in of the RA bill form | 2 | Part I | Part IV | Form 35 | Form 34 |
| 37 | As per Govt Notification, % amount is deducted from the bills against Insurance. | 1 | 1 | 4 | 5 | 12.5 |
| 38 | The magnitude of Pressure wave velocity (a) in Rising Main after tripping the pumps is @.....m/sec | 2 | 1.5 | 2.5 | 2 | 1000 |
| 39 | Stand pipes on the Rising Main can take care of | 2 | upsurge | Down surge | Both upsurge and down surge | None of above |
| 40 | The Hydraulic thrust on the Vertical Gate of 15 X 9 m size , when water head is at FRL, is.....KN. | 1 | 5959.575 | 595.95 | 59595.75 | None of above |
| 41 | Which part of the Radial gate listed in option is stress relieved as heavy welding is required during manufacturing. | 3 | End Arm | Horizontal Girder | Trunnion Box | Skin Plate |
| 42 | The but welding joints of Fabricated Horizontal girder is checked by. | 4 | Destructive Testing | Visual Checking | Ultrasonic testing | X ray testing |
| 43 | When some components of Hoisting assembly are checked for Break down torque of the proposed motor, the breakdown torque of the motor is considered as% of rated torque. | 2 | 2.25 | 250 | 2.5 | 150 |
| 44 | During erection of radial gate at site , the skin plates are welded with each other byjoint. | 3 | Square butt | Parallel fillet | Single V butt | Double V butt |
| 45 | Work abstract register keeps the monthly record of | 3 | Expenditure on Deposit work | Expenditure on Inspection Vehicle | Expenditure and earning of Heavy machines | Work done at various projects |
| 46 | Which type of Hydraulic pump is used as main pump in modern excavator | 4 | Gear Pump | Vane Pump | Reciprocating Pump | Variable displacement type axial piston pump |

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| 47 | How excavator is generally specified in market | 2 | Bucket capacity | Weight of machine | Digging Capacity | Engine power |
| 48 | Gear pump is used in Excavator for..... | 3 | Main Hydraulic Circuit | Travel Circuit | Pilot Circuit | Swing Circuit |
| 49 | Most important criteria for selection of Engine for dozer application is..... | 4 | Power | Fuel consumption | Engine rpm | torque |
| 50 | The newly purchased Kobelco 140 sk HD excavator in Mechanical Organisation is equipped withmake engine. | 1 | Mitsubishi | Isuzi | INTAC | Kirloskar |
| 51 | The swing RPM in mid sized excavator is generally..... | 3 | 2 to 3 | 6 to 8 | 11 to 13 | 21 to 24 |
| 52 | The hydraulic gates are generally classified according to following criteria. | 4 | Function in a dam | Location | Shape | All options given in A,B,C |
| 53 | If the head over the spillway is 8 m or more , overall arrangement oftype gate generally proves economical in comparison to other types of gate. | 1 | Radial | Vertical | Bonnet | Fish belly |
| 54 | Which of the following is not a component of Vertical lift gate? | 3 | Skin plate | Horizontal girder | End arm | Vertical stiffeners |
| 55 | The hoist capacity of Radial gate iscompared to fixed wheel gate of same storage capacity and size. | 2 | more | less | Equal | None of these |
| 56 | In radial gate planning , location of trunnion is kept @ 1.5 m above | 4 | Sill beam | Anchor girder bridge | Bottom horizontal girder | Water nappe |
| 57 | According to Indian standard specification , the economic radius of the Radial gate is 1.25 times..... | 1 | height | width | Pier height | Bridge width |
| 58 | Select suitable grade of oil to be used for transmission of Dozer? | 2 | MAK CD10W | MAK CD 30 | Hydrol P46 | HP-90 |
| 59 | Select suitable grade of oil for hydraulic system of Excavator? | 1 | CD10W | Hydrol P46 | Ultra 30 | 20W40 |
| 60 | Tyre inflation pressure for 10 Ton tippers having tyre size 10X20 should be? | 4 | 70 psi | 110 psi | 60 psi | 90 psi |
| 61 | Select suitable tyre for Terex 72-21 wheel loader? | 2 | 9 X 20 | 14 X 25 | 18 X 25 | 10 X 20 |
| 62 | For servicing the track motor of excavator which type of oil is necessary? | 1 | HP 90 | SVP MG 20W40 | CF 40 15W40 | CD 10 W |
| 63 | Engine Horse Power of 20 Ton Hydraulic excavator is | 3 | 70 HP | 100 HP | 125 HP | 175 HP |
| 64 | In case of a Diesel car, the pressure at the end of compression is of the order of | 4 | 15 bar | 25 bar | 35 bar | 45 bar |
| 65 | The pumps used for Lift Irrigation Schemes are of | A | Non Positive Displacement Type | Positive Displacement Type | Screwed Type | Geared Type |
| 66 | The sump of Lift Irrigation Schemes are generally designed and engineered as per recommendations of | 2 | IS 9137 | HIS | Pump Manufacturer | Surge Report |
| 67 | During selection of Vertical Turbine pump with suction head for Lift Irrigation Schemes, required NPSHA can be achieved by modifying the | 1 | Sump Bottom Level | Pump Floor Level | Valve Floor Level | None of Above |
| 68 | The source of supply used for controlling the operations and safety of equipment in Lift Irrigation scheme is | 1 | DC 110/220 | AC 415 V | AC 230 V | AC 6.6 Kv |
| 69 | The suction velocity in the Centrifugal Pump is kept for techno economical purpose | 2 | Less than 2.5 m/s | Less than 2 m/s | Less than 0.5 m/sec | More than 2 m/s |
| 70 | The closing time of the Multi door Check valve is generally up to.....Sec | 1 | 0.5 sec | 14 sec | 3 sec | None of these |
| 71 | For the delivery pipe of 1000 mm , Kinetic Air Valve is provided withmm diameter. | 4 | 40 | 80 | 150 | 200 |
| 72 | The nature of surges(Hydraulic Transients) in Rising main are dependent of.... | 4 | Pump Characteristics | Pump Motor Inertia | Valve Closing Time | All of above three |
| 73 | One way surge can predominantly control the in the pipe line | 2 | Positive surges | Negative surges | Water velocity | Wave velocity |
| 74 | In the Vertical Induction Motor, Driving End of the shaft is provided withbearing. | 1 | Thrust | Bush | Teflon Bush | Ball bearing |
| 75 | For improving power factor of the System Capacitors are used in Lift Irrigation Schemes and its rating is measured in..... | 1 | KVAR | KVA | AMP | Deg |

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| 76 | The high precision core of the Current Transformer is used forsystem | 1 | Controlling and Protection | Measuring | Charging | None of these |
| 77 | The cost of motor is inversely proportional to the | 2 | Power | Speed | Torque | Inertia |
| 78 | The electric motors used for Pumps of the Lift Irrigation schemes are of.....type | 3 | High torque DC | Captive | Squirrel Cage Induction | None of these |
| 79 | Submersible pumps are always operated with | 1 | Suction Head | Suction Lift | Cavitation Head | None of these |
| 80 | In which Standard Radial Gate , inclined end arms are provided | 3 | 8 x 4 m | 12 x 5 m | 12 x 6.5 m | 12 x 8 m |
| 81 | Hydraulic gates are designed as per IS..... | 3 | 6911 | 2062 | 4622 | 6938 |
| 82 | Total dry film thickness for Hydraulic gates of all the coats of paint including primary coat shall not be less than micron | 1 | 350 | 20 | 1000 | 0.5 |
| 83 | Which type of Non Destructive Test is used for checking a fillet joint | 1 | Ultrasonic Testing | X ray testing | DP Testing | None of these |
| 84 | Usually Service gates are designed and provided with | 2 | Downstream Sealing | Upstream Sealing | Downstream silling | Upstream Silling |
| 85 | Radius of skin plate assembly of Standard 12 x 5 m Radial Gate is | 4 | 5 m | 5.5 m | 6 m | 6.5 m |
| 86 | Maximum reduction is the transmission of power for Radial Gate hoist is achieved in | 3 | 1 st Gear Train | 2 nd Gear Train | Worm type reducer | Wire rope drum |
| 87 | Which core type of wire rope is selected for operation of radial gates | 2 | Steel core | Fibre core | Galvanised steel core | Manila rope |
| 88 | The wire rope diameter for 12 x 8 m radial gate is mm. | 2 | 24 | 36 | 40 | 42 |
| 89 | The total weight of standard 12 x 5 m Radial gate assembly is..... MT | 2 | 25 | 30 | 35 | 42 |
| 90 | Which type of bearings are used to support the gun metal nut in the screw stem hoist | 2 | Taper roller bearing | Thrust bearing | Self Aligning bearing | Ball bearing |
| 91 | The motors used for Hoisting arrangement of Goliath Crane are ofduty. | 4 | S1 | S2 | S3 | S4 |
| 92 | threads are used for power stem rod at worm wheel location. | 1 | 2 TPI squar | 4 TPI squar | 2 TPI V | 4 TPI V |
| 93 | IS..... is used for Design of EOT and Gantry Cranes. | 2 | 11228 | 3177 | 1710 | 327 |
| 94 | The starters used in operation of Rope drum hoist are of..... type | 2 | Star delta | DOL | Soft Starters | ATS |
| 95 | Centrifugal Pumps with Axial flow impeller are started | 3 | With Control valve fully closed | With control valve crack open | Without control valve | None of these |
| 96 | For on line maintenance of Kinetic air valve,is used as isolation valve. | 1 | Sluice valve | Butterfly valve | HOPD Valve | Zero Velocity Valve |
| 97 | Water velocity preferred in the Rising Main is @.....m/sec | 2 | 6 | 2 | 1 | 4 |
| 98 | are used in the construction of Vertical Turbine pumps to avoid the reverse rotation after tripping. | 4 | Screwed coupling | Rubber pin coupling | Muff Coupling | Non reversible ratchet |
| 99 | The structural component of the standard hydraulic gates are designed and manufactured with Mild steel as per | 1 | IS 2062 | IS 2064 | IS 1962 | IS 1920 |
| 100 | The capacity of Hoist of Emergency gates is calculated considering.....condition during operation. | 2 | Static thrust | Balanced | Differential Pressure | None of these |
| 101 | The full form of ROS is | 2 | Rate of Swing | Reservoir operation Schedule | Reserve Oil Source | None of these |
| 102 | The size of Excavator is usually expressed in terms of | 3 | Crowd Motion | Angle of Swing | Cubic meters | Travel in meters |
| 103 | In commercial vehicle layouts, engine is located forward, rear or under floor mainly for | 3 | Better utilization of space | Increasing fuel economy | Better weight distribution | Reducing the weight of chassis |
| 104 | The temperature of the piston will be more at | 2 | The piston walls | The crown of the piston | The skirt of the piston | The piston pin |
| 105 | Connecting rods are generally of the following form | 4 | Forged round section steel | Cast steel triangular section | Forged square section steel | Forged I section steel |
| 106 | For Diesel engine the normal compression ratio is from | 1 | 17 to 21.1 | 7.5 to 8.5 | 30 to 40.1 | 1 to 5.1 |

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| 107 | Engine torque is highest at | 2 | Low speed | Intermediate speed | High speed | A and C |
| 108 | As number of cylinders in multi cylinder engines increases, power to weight ratio | 3 | Remains same | decreases | increases | Becomes zero |
| 109 | The fit of the piston to the cylinder is measured at the | 2 | Piston skirt | Piston head | Point of maximum diameter | Point of minimum diameter |
| 110 | Following is not a classification of maintenance | 2 | Breakdown maintenance | Timely maintenance | Scheduled maintenance | Preventive maintenance |
| 111 | A systematic approach for maintenance is | 1 | Problem-cause -diagnosis -rectification | Problem- diagnosis- cause -rectification | Problem -diagnosis -rectification--cause | Rectification- Problem- cause -diagnosis |
| 112 | What is the bore size of MDI 3200T CA engine fitted on Bollero Camper Jeep? | 2 | 99.8 | 88.9 | 89.9 | 100 |
| 113 | Rated horse power of Komatsu S6D 155 -4D type diesel engine is | 3 | 80 HP | 170 HP | 320 HP | 220 HP |
| 114 | How many track rollers are fitted to each side track chain of CAT D-8-K dozer | 1 | 7 | 16 | 15 | 21 |
| 115 | How many number of links are there to each side track chain of BEML D 155A-1 crawler tractor | 3 | 7 | 18 | 41 | 33 |
| 116 | Operating pressure range of hydraulic cylinders developed for excavator is | 2 | 20 to 250 bar | 150 – 350 bar | 350 -370 bar | 0 – 700 bar |
| 117 | Automatic flood release gates are used atmajor project in Maharashtra | 4 | Koyana | Dudhganga | Gosikhurda | Radhanagari |
| 118 | Radial gates with three end arm construction is used atmajor dam in Maharashtra . | 4 | Koyana | Warana | Vishnupuri | Upper Vardha |
| 119 | gates are used as storage cum flood control gates in Vishnupuri Project. | 1 | Vertical Lift | Radial | Automatic Flood Control | Screw stem type |
| 120 | Tembhu Lift Irrigation scheme is equipped withpump construction. | 2 | Vertical turbine pull out type | Vertical Turbine non pull out type | Vertical turbine with inclined suspension | None of these |
| 121 | Purandar Lift Irrigation scheme is designed withpumping concept. | 1 | On line booster | Dedicated sump | Common sump | None of these |
| 122 |is not treated as surge controlling equipment in Lift Irrigation schemes. | 4 | Air cushion Valve | Kinetic Air Valve | Zero velocity Valve | Sluice Valve |
| 123 | type of crane is proffered for erection of Radial Gates from deck bridge. | 3 | EOT Crane | Pick and carry | Slewing Crane | Tower crane |
| 124 | Radial gate erection activity starts with erection of..... | 1 | JIG for vertical anchorages | Sill beam | A G Bridge | T G boxes |
| 125 | Hooke's law holds good up to | 2 | Yield point | Elastic limit | Plastic limit | Breaking point |
| 126 | The modulus of elasticity for mild steel is approximately equal to | 1 | 210 KN/mm ² | 110 KN/mm ² | 310 KN/mm ² | 410 KN/mm ² |
| 127 | The structural columns are always subjected to stresses | 2 | Tensile | Compressive | temperature | Tensional |
| 128 | The component of the machine is observed to be failed below the yield point then failure is said to be failure. | 1 | Fatigue | Regular | yield | Shear |
| 129 | The design of the Air vessel , used in the Lift Irrigation scheme as Surge arrester , is based on..... | 2 | Longitudinal stress | Hoop stress | Shear stress | None of these |
| 130 | The cross country pipe lines which are buried in the earth should be joined with | 2 | Union joint | Spigot and socket joint | Coupler joint | Flanged joint |
| 131 | To sustain the thermal stress in the MS pipe linesjoints are used. | 1 | Expansion Joint | Dismantle Joint | Flanged Joint | Welded joint |
| 132 | The size of the weld in butt joint is equal to | 3 | 0.5 X Throat of Weld | 2 X Throat of weld | Throat of weld | None of these |
| 133 | The washer is generally specified by its | 4 | Outer diameter | thickness | Mean diameter | Hole diameter |
| 134 | The eye bolts are used for | 4 | Transmission of power | Locking devices | Absorbing Shocks | Lifting the machines |
| 135 | For connecting shafts whose axis are inclined to each otheris used. | 3 | Turn buckle | Knuckle joint | Universal joint | None of these |
| 136 | A connecting rod is a member which is subjected to alternate directforces. | 1 | Compressive and tensile | Only tensile | Only compressive | None of these |

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| 137 | For getting stroke length of 300mm, the radius of crank should be of.....mm. | 2 | 600 | 150 | 75 | 225 |
| 138 | Screws used for power transmission should have | 1 | High efficiency | Less efficiency | V threads | None of these |
| 139 | In a crossed belt drive, the shafts are arranged parallel and rotate in thedirection. | 2 | same | opposite | Same as well opposite | None of these |
| 140 | The centrifugal tension in the belt | 3 | Increases the power transmission | Decreases the power transmission | Has no effect on power transmission | None of these |
| 141 | Which of the following is a positive drive | 4 | V belt drive | Rope drive | Flat belt drive | Chain drive |
| 142 | serves as a reservoir which stores energy as per requirement of the system. | 2 | Governor | Flywheel | Gyroscope | turbocharger |
| 143 | In case of a multiple disc clutch, if n1 and n2 are number of discs on the driving and driven shafts respectively, then the number of pairs of contact surfaces will be | 3 | n1 + n2 | n1-n2 | n1+n2-1 | n1+n2+1 |
| 144 | Teflon is preferred as a bearing on driving shaft of the butterfly valve because of | 1 | Low coefficient of friction | High coefficient of friction | Low cost | Easy heat dissipation |
| 145 | A fluid, which is incompressible and is having no viscosity is known as.....fluid | 2 | Real | Ideal | Idle | Plastic |
| 146 | As per Pascal's law, the pressure or intensity of pressure at a point in a static fluid is equal indirection. | 3 | Only upward | Only forward | all | Only downward |
| 147 |is used for measurement of pressure of the fluid. | 3 | Tachometer | V notch | Piezometer | Anemometer |
| 148 | The standard atmospheric pressure at sea level is..... | 4 | 1 Kg /mm ² | 10 Kg/cm ² | 760 kg/cm ² | 1.033 kg/cm ² |
| 149 | The fluid pressures are directly proportional to theof the liquid. | 1 | Specific Gravity | Turbidity | Velocity | None of these |
| 150 | The pumping system in the Lift Irrigation basically operates on the.....principal. | 2 | Raynould | Bernoullis | Newton | Buckingham |
| 151 | The minimum numbers of teeth are assumed on the pinion while selecting gearing ratio to avoid..... | 1 | Interference | Undercut | Friction | All three options are correct |
| 152 | The power actually developed inside the engine cylinder is called as | 1 | Indicated power | Brake Power | Frictional power | None of these |
| 153 | What is the specific gravity of fully charged lead acidic battery? | 3 | 1.19 | 1.21 | 1.23 | 1.27 |
| 154 | Recently trending Geo scan technology in E-moving machines is useful for which of the following options? | 2 | B & C | B,C & D | C & D | All of the above. |
| | A) To operate machines remotely | | | | | |
| | B) To access machine location & record machine hours | | | | | |
| | C) To record fuel consumption data | | | | | |
| | D) To provide graphical representation of work done | | | | | |
| 155 | A torque converter replaces a conventional _____ system. | 2 | hydraulic control | clutch | electronic control | power brake |
| 156 | Horsepower in a utility tractor usually ranges from about _____ hp. | 2 | 20 to 30 | 40 to 100 | 100 to 300 | 400 to 600 |
| 157 | A consolidated abstract of the receipt, issues and balance of Tools and Plants is maintained in the Sub Division Office in | 2 | Form 33 | Form 35 | Form 34 | Form 30 |
| 158 | What is full form of VIDC | 2 | Valley Irrigation Development Corporation | Vidharbha Irrigation Development Corporation | Vishnupuri Irrigation Development Corporation | None of these |
| 159 | eJalseva system comprises ofnumbers of total modules. | 2 | 30 | 34 | 44 | 40 |
| 160 | The gross water storage capacity in major and minor dams in WRD, Maharashtra is utilized% for Irrigation purpose. | 4 | 100 | 90 | 95 | 80 |
| 161 | The electrode in TIG welding is..... | 2 | Consumable | Non consumable | Both | No electrode |
| 162 | What is HAZ | 1 | Heat affected Zone | High arc zone | Heat available Zone | None of these |

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| 163 | As per affinity law, with impeller diameter held constant and speed changes, then ratio of change in head is ratio of change in speed. | 1 | Directly proportional to the square of | Directly proportional to | Inversely proportional to | None of these |
| 164 | Performance curve of the Centrifugal pump is a graphical representation of Head, efficiency and power against..... | 3 | time | torque | discharge | NPSHA |
| 165 | Pump with Radial impeller is operated against closed valve (at shut off head), then power required will be.....duty power. | 1 | Less than | More than | Equal to | None of these |
| 166 | By increasing number of vanes of the Impeller , Nature of HQ curve will change from | 2 | Flat to steep | Steep to flat | Stable to unstable | None of above |
| 167 | State the techno commercially suitable construction of Centrifugal pump for Lift Irrigation scheme where source of water is available with constant suction head of 5m . | 2 | Vertical turbine | Horizontal split case pump | Submersible pump | None of above |
| 168 | The hydraulic thrust on the Butterfly valve of 400 mm dia in closed position ,when pressure acting on it is 10 kg/cm ² , is kg.(Neglecting thrust due to velocity head) | 4 | 1256 | 125.6 | 1256000 | 12560 |
| 169 | The shaft is designed as 60 H8/f7, then tolerance grade for shaft is | 2 | 8 | 7 | 60 | 56 |
| 170 | The difference between basic dimensions of the mating parts is called as..... | 1 | Tolerance | Limit | Allowance | Deviation |
| 171 | The full form of IEEMA is | 1 | Indian Electrical and Electronics Manufacturers' Association | Industrial Electrical and Electronics Manufacturers' Association | Industrial Electrical and Electronics Manufacturers' Academy | Indian Electrical and Electronics Manufacturers' Academy |
| 172 | Which of the following is not the valley corporation under WRD, Maharashtra | 1 | MIDC | VIDC | MKVDC | TIDC |
| 173 | One effect of detonation is | 2 | Delay in ignition | Loss of power | Overheating of engine | Overcooling of engine |
| 174 | For stress relieving of the metallic components, following process is used | 1 | Annealing | Quenching | Hardening | Carburising |
| 175 | The average density of the Wet soil isKg/m ³ | 3 | 1200 | 1400 | 1700 | 2000 |
| 176 | The volute pumps and vortex volute pumps arepumps withshaft. | 3 | Multistage, Horizontal | Multistage, Vertical | Single stage , horizontal | Single stage, vertical |
| 177 | Which of the following centrifugal pumps has higher specific speed than the others | 1 | Axial Flow | Radial Flow | Mixed Flow | All have same specific speed |
| 178 | The point of contact of two pitch circles of mating gears is called | 2 | Pressure point | Pitch point | Module | Contact point |
| 179 | The gear used to convert rotary motion into translating motion is | 3 | Worm and wheel | Crown gear | Rack and pinion | Bevel gear |
| 180 | Which of the following type of gear has inclined teeth | 2 | Spur gear | Helical gear | Spiral gear | All of the above |
| 181 | The gears are used to connect two parallel shafts except | 3 | Spur gears | Helical gears | Double helical gears | Bevel gears |
| 182 | The voltage used in resistance welding is generally kept between | 1 | 4 – 12 volts | 12-20 volts | 20-28 volts | 28-36 volts |
| 183 | The heat generated in in resistance welding is expressed by | 1 | i^2Rt | IR^2t | IRt^2 | $2IRt$ |
| 184 | Which of the following is not fillet weld | 1 | Butt Joint | Lap joint | T joint | Corner Joint |
| 185 | The metals having good weldability, in descending order are | 2 | Iron,, carbon steel, cast iron, Cast steel | Cast steel, iron,, carbon steel, cast iron | cast iron ,Cast steel, iron,, carbon steel | Carbon steel, cast iron ,Cast steel, iron,, |
| 186 | Double v and double u butt welds are used for plates of thickness | 4 | 1-5 mm | 5-10 mm | 10-15 mm | Over 15 mm |
| 187 | Which of the following joint have high corrosion resistance? | 1 | Welding joint | Riveted joint | Bolted Joint | None of the above |
| 188 | 1. Durometers.....A. Value of modulus of rigidity | 4 | 1-D,2-B,3-A, 4-C | 1-C, 2-D,3-A, 4-B | 1-B, 2-A,3-D,4-C | 1-C,2-D,3-A,4-B |
| | 2. Brinell Hardness test.....B. To verify formability | | | | | |
| | 3. Torsion test.....C. Hardness of non metallic materials | | | | | |
| | 4. Erichsen cupping test...D. Hardness of ductile materials | | | | | |

Use of Machinery

| Questin No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|------------|--|-------------------|-------------|---------------|---|---------------|
| 189 | The working cycle in case of four stroke engine is completed innumber of revolutions of the crank shaft | 2 | 1 | 2 | 4 | 8 |
| 190 | In a diesel engine fuel is ignited by..... | 3 | spark | Injected fuel | Heat resulting from compressing air that is supplied for combustion | ignition |
| 191 | The control Valve on the Delivery pipe of the Pump with duty head of 80 m , shall be of rating. | 2 | PN 1 | PN 1.6 | PN 2 | PN 2.4 |
| 192 | The design criteria for up surge protection is that maximum pressure should not exceedtimes the working pressure or pump head using surge arresting arrangement . | 3 | 1.2 | 2 | 1.5 | 5 |
| 193 | The Induction Motor directly coupled to the VT pump of Lift irrigation scheme, to operate on 50 Hz, is of the 4 poles then RPM of the pump is | 4 | 750 | 600 | 1000 | 1500 |
| 194 | For Cavitation free operation of the Centrifugal Pump, NPSHA should be always | 2 | less than | greater than | equal to | None of these |
| 195 | To tackle the negative surge in the Rising Main, valves are normally used with Zero Velocity Valves. | 1 | Air Cushion | Kinetic Air | Non Return | Butterfly |
| 196 | In the design of Large Diameter steel pipelines, the working stress for combined bending and direct tensile stress shall not exceed ...% of the yield stress of the material making due allowance for efficiency of welded Joint. | 4 | 100 | 120 | 160 | 60 |
| 197 | In the design of the Large Diameter Steel pipe lines, the allowable deflection under external load and partial vacuum is @% of nominal diameter. | 1 | Two | ten | Twenty | None of these |
| 198 | The VT pump of 100 m duty head is in operation at POL . The pressure gauge is provided on delivery pipe with a level difference of 5m above the POL . To operate the pump at BEP, the Butterfly valve should be adjusted to suit the pressure gauge reading of..... kg/cm ² . | 4 | 9 | 105 | 10.5 | 9.5 |
| 199 | The performance gurantee of the VT Pumps at site is conducted in accordance with | 4 | IS 10981 | IS 325 | BS 5115 | IS 9137 |
| 200 | For the motor of 1000 kw and 6.6 Kv voltage rating, the Motor Feeder of HT Panel should haveAmp rating VCB. | 4 | 800 | 3200 | 1240 | 630 |
| 201 | For the Lift Irrigation Scheme comprising 3 nos of pumps of 450 HP, the recommended power supply voltage will be.....V. | 3 | 11 | 11000 | 3300 | 415 |
| 202 | The control system voltage of HT panel for the Lift Irrigation scheme comprising 5 pumps of 1015 kw will be of..... | 1 | 110 v DC | 220 v AC | 110 v AC | 24 v DC |
| 203 | The hoisting capacity required for standard 12 X 8 m Radial Gate in Maharashtra isMT. | 4 | 20 | 36 | 44 | 42 |

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|--|-------------------|--------------------------------|------------------|------------------------------------|----------------------------------|
| 204 | While designing a power transmitting stem of Screw stem hoist of the .9 X .9 m Sliding gate, against buckling failure, the end conditions for the stem are taken as | 4 | Both ends fixed | Both ends hinged | One end fixed and other end hinged | One end fixed and other end free |
| 205 | In rope drum hoisting mechanism, the maximum speed reduction is achieved throughgearing. | 3 | Spur | Helical | Worm and worm | Bevel |
| 206 | In manufacturing of Rope drum hoist of 42 MT, The type of fit between Journal bearing of drum and axle is | 2 | Interference | Clearance | Transit | None of these |
| 207 | Straight End arms are provided for Standard Radial Gate size ofm in WRD, Maharashtra | 3 | 12 x 5 | 12 x 8 | 12 x 6.5 | None of these |
| 208 | The clearance between trunnion bracket and anchor girder of radial gate assembly is filled by zink to | 1 | ensure uniform bearing surface | Avoid corrosion | Increase strength | None of these |
| 209 | Find out the HP required for 20 MT capacity hoist for which lifting speed is 0.45 m/min and overall efficiency of 45% | 2 | 7.5 HP | 5 HP | 20 HP | 710 HP |
| 210 | The sluice gate of major dam are provided with 6 rollers on each side , the designed diameter of the roller pin is 160 mm, the suitable spherical bearing selection from given list will be..... | 1 | 22232 | 22230 | 22228 | 22234 |
| 211 | The recommended tolerance for centre to centre distance between side seal seat for 2.5 X 4.5 m sluice gate with 55 m head is | 4 | +/- 5 mm | +/- 0.5 mm | +/- 0.05 mm | +/- 2 mm |
| 212 | In rope drum hoist , depth of the groove on the drum is providedtimes of the diameter of wire rope. | 2 | 35 | 0.35 | 25 | 0.25 |
| 213 | Vertical lift gates of Barrages are provided withsealing arrangement with wire rope drum hoist | 4 | downstream | L type | downstream or upstream | upstream |
| 214 | Digging reach of 20/22 Ton excavator is- | 2 | 11-12 mt. | 9-10 mt | 8-9 mt | 12-13 mt |
| 215 | A trench is 3 m deep and 1 m wide at the bottom. The slope ratio is 1.5:1. What is the top width of the excavation? | 3 | 5.5 m | 7.0 m | 10.0 m | 11.0 m |
| 216 | A Cut of Trench (COT) to be excavated is 140 m long, 5 m wide and 4.5 m deep. What is the volume to be removed? | 3 | 3000 cub m | 3200 cum m | 3150 cub m | 3200 cub m |
| 217 | Considering Techno commercial aspect Which of the following machine is most suitable for silt removal from deep Lake? | 3 | Dozer | Loader | Excavator | Backhoe loader |
| 218 | Track tension required in operation of Excavator on a soft ground condition is | 1 | 70-80 mm | 30-40 mm | 90-100 mm | 20-30 mm |
| 219 | One or both side tracks of a machine may become inoperable due to – A) Damaged centre joint B) Broken travel motor C) Overly tensioned or slackened crawler chain D) Faulty pilot circuit line | 3 | B & C | B,C &D | A,B & D | All of the above. |
| 220 | When the Excavator is continuously used with its rock breaker attachment, then its Hydraulic oil need to be changed after..... hours irrespective of grade of the Hydraulic oil. | 3 | 5000 hours | 1500 hours | 500 hours | 2500 hours |
| 221 | Dumping height of EX200/220 excavator is- | 3 | 4 mt. | 9 mt. | 6 mt. | 8 mt. |

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|---|-------------------|------------------------|---------------------|-----------------------------|--------------------------------|
| 222 | The relief valve pressure required for boom and arm bucket of mid-sized excavator is..... | 4 | 250 kgf/sq.cm | 410 kgf/sq.cm | 300 kgf/sq.cm | 350 kgf/sq.cm |
| 223 | The total weight of Tata Ex 220 excavator is | 3 | 20 MT | 25 MT | 22 MT | 44 MT |
| 224 | Considering techno commercial aspect, the machine suitable for work of deep CCT is | 1 | Excavator | Dozer | Loader | Grader |
| 225 | Considering techno commercial aspect, suitable unit For desilting of large tank will be | 1 | Excavator and Tipppers | Dozers and Tipppers | Loader and Tipppers | Excavator and Dozer |
| 226 | In B1 tender of Pumping Machinery pertaining to Lift Irrigation Scheme, the PVC is applicable for | 4 | Pumps | Motor | HT panel | All items given in the options |
| 227 | Under B1 contract, Contractor is binding to execute 25% excess quantity, if demanded for completion of work, in accepted schedule of rate under | 3 | Clause 4 | Clause 13 | Clause 38 | None of these |
| 228 | Form No is used for payment to contractor when intermediate payment (R A Bill) is proposed. | 4 | 101 | 46 | 70 | 47 |
| 229 | For calculating PVC with given formula for pump, the monthly indices published byare accepted | 1 | IPMA | IEPMA | BHRA | HIS |
| 230 | The contractors recovery is recorded in of the R A bill form | 2 | Part I | Part IV | Form 35 | Form 34 |
| 231 | As per Govt Notification, Contractor having VAT registration , % amount is deducted from the bills. | 1 | 2 | 4 | 5 | 12.5 |
| 232 | The cost of Tender paper set for the work up to 15 lacs is Rs. | 1 | 500 | 1000 | 5000 | 10000 |
| 233 | The period for the publication of eTender notice (Period from uploading to submission of tender) for the work costing more than 50 lacs in first call isdays. | 3 | 15 | 8 | 25 | 30 |
| 234 | The EMD for the work costing more than 2 Crs is% of estimated cost. | 3 | 2 | 1.5 | 0.5 | 1 |
| 235 | The magnitude of Pressure wave velocity (a) in Rising Main after tripping the pumps is @m/sec | 4 | 1.5 | 2.5 | 2 | 1000 |
| 236 | Stand pipes on the Rising Main can take care of | 2 | Upsurge | Down surge | Both upsurge and down surge | None of above |
| 237 | The Hydraulic thrust on the Vertical Gate of 15 X 9 m size , when water head is at FRL, is.....KN. | 1 | 5959.575 | 595.95 | 59595.75 | None of above |
| 238 | Which part of the Radial gate listed in option is stress relieved as heavy welding is required during manufacturing. | 3 | End Arm | Horizontal Girder | Trunnion Box/Girder | Skin Plate |
| 239 | The welding joints of Fabricated Horizontal girder is checked by. | 4 | Destructive Testing | Visual Checking | Ultrasonic testing | X ray testing |
| 240 | When some components of Hoisting assembly are checked for Break down torque of the proposed motor, the breakdown torque of the motor is considered as% of rated torque. | 2 | 2.25 | 250 | 225 | 150 |
| 241 | During erection of radial gate at site , the skin plates are welded with each other byjoint. | 3 | Square butt | Parallel fillet | Single V butt | Double V butt |
| 242 | The allowable velocity in the suction piping ism/s as per HIS | 1 | 1.2 to 1.7 | 3 to 3.5 | 0.1 to 0.2 | 4 to 5 |

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|--|-------------------|------------------------------|---|--|--|
| 243 | Work abstract register keeps the monthly record of | 3 | Expenditure on Deposit work | Expenditure on Inspection Vehicle | Expenditure and earning of Heavy machines | Work done at various projects |
| 244 | Which type of Hydraulic pump is used as main pump in modern excavator | 4 | Gear Pump | Vane Pump | Reciprocating Pump | Variable displacement type axial piston pump |
| 245 | How excavator is generally specified in market | 2 | Bucket capacity | Weight of machine | Digging Capacity | Engine power |
| 246 | Gear pump is used in Excavator for..... | 3 | Main Hydraulic Circuit | Travel Circuit | Pilot Circuit | Swing Circuit |
| 247 | Most important criteria for selection of Engine for dozer application is..... | 4 | Power | Fuel consumption | Engine rpm | Torque |
| 248 | The newly purchased Kobelco 140 sk HD excavator in Mechanical Organisation is equipped withmake engine. | 1 | Mitsubishi | Isuzi | INTAC | Kirloskar |
| 249 | The swing RPM in mid sized excavator is generally..... | 3 | 2 to 3 | 6 to 8 | 11 to 13 | 21 to 24 |
| 250 | The hydraulic gates are generally classified according to following criteria. | 4 | Function in a dam | Location | Shape | All options given in A,B,C |
| 251 | If the head over the spillway is 8 m or more , overall arrangement oftype gate generally proves economical in comparison to other types of gate. | 1 | Radial | Vertical | Bonnet | Fish belly |
| 252 | Which of the following is not a component of Vertical lift gate? | 3 | Skin plate | Horizontal girder | End arm | Vertical stiffeners |
| 253 | The hoist capacity of Radial gate iscompared to fixed wheel gate | 2 | More | less | Equal | None of these |
| 254 | In radial gate planning , location of trunnion is kept @ 1.5 m above | 4 | Sill beam | Anchor girder bridge | Bottom horizontal girder | Water nappe |
| 255 | According to Indian standard specification , the economic radius of the Radial gate is 1.25 times..... | 1 | Height | width | Pier height | Bridge width |
| 256 | Select suitable grade of oil to be used for transmission of Dozer? | 2 | MAK CD10W | MAK CD 30 | Hydrol P46 | HP-90 |
| 257 | Select suitable grade of oil for hydraulic system of Excavator? | 1 | CD10W | Hydrol P46 | Ultra 30 | 20W40 |
| 258 | Tyre inflation pressure for 10 Ton tippers having tyre size 10X20 should be? | 4 | 70 psi | 110 psi | 60 psi | 90 psi |
| 259 | Select suitable tyre for Terex 72-21 wheel loader? | 2 | 9 X 20 | 14 X 25 | 18 X 25 | 10 X 20 |
| 260 | For servicing the track motor of excavator which type of oil is necessary? | 1 | HP 90 | SVP MG 20W40 | CF 40 15W40 | CD 10 W'''' |
| 261 | Engine Horse Power of 20 Ton Hydraulic excavator is | 3 | 70 HP | 100 HP | 125 HP | 175 HP |
| 262 | In case of a Diesel car, the pressure at the end of compression is of the order of | 4 | 15 bar | 25 bar | 35 bar | 45 bar |
| 263 | Before lifting Emergency Gate , how balanced condition is achieved. | 2 | By increasing hoist capacity | Opening bypass arrangement valve to fill water in conduit | Feeding water by means of pumping in conduit | None of the above |
| 264 | A quantity indicating ignition properties of the Diesel fuel is.... | 3 | Froud No | Octane | Cetane | Compression Ratio |
| 265 | For the administrative approval of work proposed under Jalyukta Shivar Abhiyan, the member secretary of the District Level committee is | 3 | Collector | District Planning Officer | District Agriculture Officer | Guardian Minister of District |

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|---|-------------------|---|--|--|--|
| 266 | Which machine is used for rock excavation? | 4 | Jack hammer | wagon drill | short diamond drilling | All of these |
| 267 | In loader ,engine can not reach governed rpm due to | 3 | Air leaks between cleaner and engine | Internal leakage from radiator | incorrect injector flow | Engine exterior |
| 268 | What is the reason for a break down of truck or a tractor. | 4 | may be due to normal wear & tear | rough use and erratic operation | careless operation | All of these |
| 269 | The rubber compound shall not absorb more than ----- percent by weight of water in a 7 day test. | 3 | 2% | 5% | 10% | 20% |
| 270 | Rough lever shifting in power shift transmission of a loader due to | 4 | Oil leakage at output shaft hub | Broken seal ring on centre support hub | Dirty oil filter | Control and modulator valve sticking |
| 271 | In heavy earth moving equipment,steering shimmying due to | 1 | Loose steering cylinder mounting pins | Parking brakes on | Lack of lubricant in steering linkage | Low oil level in accumulator |
| 272 | The working pressure and temperature inside the cylinder of an internal combustion engine isas compared to a steam engine | 4 | low | very low | high | very high |
| 273 | In a petrol engine , if diesel is used , then the engine will | 1 | not run | run more efficiently | run at high speed | explode |
| 274 | A supercharged engine as compared to an ordinary engine | 4 | requires smaller foundation | is lighter | consumes less lubricating oil | All of these |
| 275 | The knocking in diesel engines may be prevented by | 4 | reducing the delay period | raising the compression ratio | increasing the inlet pressure of air | All of these |
| 276 | Select suitable remedy for the following:Track chain of a crawler tractor getting loose | 4 | Adjusting screw of idler yoke | track idler flange wearing unevenly | seal of hyd.jack idler yoke leaking | All of these |
| 277 | Auto engine not taking load | 1 | Incorrect tappet adjustment | crank breather cap holes choked | too much wear of valve guides | oil leaking from engine crankcase |
| 278 | Which one of the following is not an application of a dozer? | 2 | Pushing over trees | drilling holes | stripping top soil | laying pipes |
| 279 | Hydraulic ripper is used for | 4 | shifting low specific gravity materials | pushing scrapper from rear | digging up roots | cutting hard packed earth |
| 280 | Which statement is correct? | 4 | Rake dozer is used for pushing the earth with maximum efficiency of the tractor | Straight dozer is used for digging roots | dozer ripper is used for uprooting large trees | Rake dozer is used for digging up roots and boulders |

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|--|-------------------|--|--|--|--|
| 281 | Select the correct statement | 1 | Start switch of the engine of dozer is located on dash board | Suction type cooling fan is used to provide cool air in the operator's compartment | Start switch has different position i.e.OFF/ON/Start /Heart/Cool | Key is to be brought to "Cool" position for cooling the engine running |
| 282 | Coeffient of traction for concrete surface for crawler tractor is | 1 | 0.45 | 0.7 | 0.55 | 0.6 |
| 283 | The chain pully block are usally of ----types | 1 | Three | four | two | None of these |
| 284 | Example of destructive method of testing weldments is | 1 | Hardness test | chemical method | radiography methoc | All of these |
| 285 | One sq.ft equal to how many sq.meter | 1 | 0.929 | 0.829 | 0.1 | None of these |
| 286 | Depreciation of machine per hour means | 1 | cost of equipment/life of machine in hours | life of machine in hours/cost of equipment | cost of equipment X life of machine in hours | None of these |
| 287 | Rope drum hoist is used on | 3 | service gate | radial gate | emergency gate | None of these |
| 288 | Annealing furnace is used for----purpose. | 3 | Killing | Normalising | Stress relieving | None of these |
| 289 | Diesel engine is normally a ----burning engine | 2 | smoky | clean | less | None of these |
| 290 | For checking RPM of engine ----is used. | 2 | Hydrometer | Tachometer | Durometer | Dynamometer |
| 291 | A machine used to raise the pressure of air is called | 3 | Gas turbine | I.C.Engine | compressure | air motor |
| 292 | What is meant by coefficient of traction | 1 | pull / weight on driver | weight on driver / pull | pull X weight on driver | None of these |
| 293 | What is the use of dozer? | 4 | Excavating | stripping | rough grading | All of these |
| 294 | For crawler tractor dozer maximum economic length of haul is | 3 | 120 meter | 60 meter | 91 meter | 100 meter |
| 295 | On which factor cycle time depends? | 4 | time taken to load | time taken to discharge | time taken for hauling load to discharge site | All of these |
| 296 | Which is the important part of water pump? | 4 | impeller | water pump bearing | carbon gland | All of these |
| 297 | Wheel tractors are normally used for | 1 | agricultural work | earth work | dam construction | None of these |
| 298 | Oxygen gas cylinder commonest size contains----cu.meter when fully charged | 2 | 2.7 cu.mtr | 2.81 cu.mtr | 2.5 cu.mtr | 2.9 cu.mtr |
| 299 | Acetylene gas cylinder commonest size contains---cu.meter when fully charged | 1 | 3.4 cu.mtr | 3.0 cu.mtr | 3.5 cu.mtr | None of these |
| 300 | After some use machinery gets deteriorated due to | 4 | wear and tear | inefficiency | accident | All of these |
| 301 | Size of vertical anchorages of 12 X 8 mtr Radial gate is | 1 | 40 mm dia X 4200 mm long | 30mm dia X 2580 mm long | 40mm dia X 4500 mm long | None of these |
| 302 | Weight of each vertical Anchor bar of 12 X 5 mtr radial gate is | 3 | 38 kg | 17 kg | 8 kg | 10 kg |
| 303 | Trunion bracket assembly of radial gate is made from | 1 | cast steel | mild steel | cast iron | HSS |
| 304 | Weight of Horizontal girder of 12 X 6.5 mtr radial gate is | 2 | 4.3 MT | 6.7 MT | 4.5 MT | 6.5 MT |
| 305 | Height (curved) of skin plate assembly of 12 X 6.5 mtr radial gate is | 3 | 6500 mm | 6800 mm | 7333 mm | 6300 mm |
| 306 | Main component of hoisting mechanism is | 4 | hoist bridge | drive unit | gear train frame | All of these |
| 307 | Horse power required for 12 X 5 mtr. gate is | 4 | 10 | 8 | 6.5 | 5 |

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|--|-------------------|--|------------------------|--|-----------------------------|
| 308 | Hoist capacity of 12 X 6.5 mtr radial gate is | 2 | 42 ton | 36 ton | 20 ton | 45 ton |
| 309 | Lifting parts of gate are consists of | 4 | wire rope | equilizer plate | wire rope socket | All of these |
| 310 | Length of wire rope required for 12 X 5 mtr radial gate is | 3 | 90 mtr | 85 mtr | 65 mtr | 55 mtr |
| 311 | The hoist capacity depends upon----- | 4 | weight of (moving parts) | All frictional forces | Any hydrodynamic load like down pull force | All of these |
| 312 | Before operating the gates it should be ensured theal the ----- is working properly | 1 | Brake | electrical motor | switches | All of these |
| 313 | Write down reason for:Gate does not raise | 4 | No supply | fault in wiring | blown out fuse | All of these |
| 314 | Write down reason for:Gate vibrates | 1 | Lack of lubricants in trunion and guide roller | starter not in order | obstruction in guide roller | wire rope broken |
| 315 | As regards maintenance of radial gate ,particular attention may be paid to the | 4 | lubrication as per schedule | wire rope | painting | All of these |
| 316 | maintenance of wire rope means applying----- every year prior to mansoon | 1 | cardium compound | grease | oil | All of these |
| 317 | Tractor and radiometry are cateories of | 2 | eddy current testing | isotope techniqyws | ferrography | laser distance measurement |
| 318 | operation of making ridge of uniform cross section in the form of a helix formed on the inside or outside of a cylinder is known as | 3 | spinning | knurling | threading | trepanning |
| 319 | Heating to beyond critical temperature and maintaining this temperature for a definite period to allow complete transformation into austenite thereafter cooling slowly in the furnace is known as | 4 | normalising | stress relieving | spheroidising | full annealing |
| 320 | Life of JCB JS 140 in hours is | 1 | 15000 hrs | 17500 hrs | 12000 hrs | 10000 hrs |
| 321 | Life of Tata Hitachi EX350 in years is | 2 | 10 | 12 | 15 | 17 |
| 322 | Fuel consumption of BEML BL 9 H with Backhoe in Ltrs/Hrs is | 3 | 12 | 14 | 10 | 18 |
| 323 | Tyre size of Tata Tipper SK 1613/36 Scoop type is | 1 | 10.00 X 12.16 PR | 9.00 X 20.00 | 11.00 X 20 (16PR) | 10.5 -16 , 12 PR |
| 324 | HP of Shantui SD -16 is | 2 | 76 | 16 | 43.6 | 180 |
| 325 | Which of the following is not earth moving equipment | 4 | Dozer | wheel loader | vibratory compactor | tipper |
| 326 | Vibratory roller is used for the construction of | 4 | railway tracks | residential buildings | industrial buildings | pavements |
| 327 | Minimum capacity of road roller used for construction work is | 3 | 4 T | 6T | 8T | 10T |
| 328 | Rubber -tired mountings are not useful where | 4 | onsite and job to job mobility is important | rocky and hard surface | speed of movement is important | high moisture / wet surface |
| 329 | Crushers are type of | 2 | concrete equipment | quarry equipment | road making equipment | marine equipment |
| 330 | Scrapers are not utilized for the purpose of | 3 | earthmoving to self load | haulage | land filling | dumping |

Use of Machinery

| Question No | Question text | Correct option no | Option 1 | Option 2 | Option 3 | Option 4 |
|-------------|---|-------------------|---|--|-----------------------------------|----------------------------|
| 331 | For small lift irrigation schemes type of pump used is | 1 | centrifugal pump | rotary pump | dynamic pump | reciprocating pump |
| 332 | Motor Graders family machines are not used for the purpose of | 3 | ditching and banksloping | leveling and crowning roads or parking lots | compacting the loose soil | snow removal |
| 333 | Backhoe is a general purpose machine can used for trench making | 4 | not so deep trenches but wide trenches | trenches only in soft soils | trenches in rocky and not so deep | deep and any kind of soils |
| 334 | A casting defect which occurs due to improper venting of sand is known as | 2 | cold shuts | blow holes | shift | swell |
| 335 | For arc welding | 3 | alternating current with high frequency is used | alternating current with low frequency is used | direct current is used | Any one of these |
| 336 | The consumable electrode is used in | 4 | carbon arc welding | submerged arc welding | TIG arc welding | MIG arc welding |
| 337 | Cutting fluids are used to | 4 | cool the tool | improve surface finish | cool the workpiece | All of these |
| 338 | A heat engine receives heat at the rate of 2000kj/min and does a work output of 8.5 kw.what will be the rate of heat rejection? | 3 | 25.5kw | 1991.5kw | 24.83 kw | 26.83kw |
| 339 | Micro structure of a material is , generally examined by | 4 | naked eye | optical microscope | X-ray techniques | None of these |
| 340 | The size of a gear is usually specified by | 2 | pressure angle | pitch circle diameter | circular pitch | diametral pitch |