

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
1	Efficiency of which pump is the maximum	4	gear pump	lobe pump	vane pump	piston pump
2	Brake shoe applied on rotating train wheel is an example of	1	dry friction	boundary friction	fluid friction	mixed friction
3	Centrifugal compressor does not have advantage over reciprocating	3	considerably high efficiency	large size compressor less floor area	higher pressure increases per stage	Quiet in operation
4	The specific of gases increase with the rise in	2	volume	temperature	volume and pressure	none of this
5	How many models are there in E-Jalsewa	4	31	32	33	34
6	What the full form of MDDL ?	1	Maximum draw down level	Minimum draw down level	Maximum draining in dam level	none of this
7	What cuts down battery life ?	4	Overcharging	Under charging	Leaving battery ideal	all of these
8	Recommended Tyre pressure for 9.00 x 20.00 -- 12 PR is	1	6 kg/cm ²	6.7 kg/cm ²	6.5 kg/cm ²	7 kg/cm ²
9	Preventive maintenance includes	4	schedule lubrication	Frequent cleaning	inspecting	all of these
10	Give Reason for: Diesel Engine consume excessive lubricating oil	4	lack of compression	Wear of lub.ring	excessive leakage from tappet cover, oil filter etc	all of these
11	The main electrical system of Jeep consist of	4	Battery 6 volt of 12 volt	distributor	spark plug	all of these
12	Allowance in limits and fits refers to	2	Maximum clearance between the shaft and hole	Minimum clearance between the shaft and hole	Difference between the maximum and minimum size of hole	Difference between the maximum and minimum size of shaft
13	In welding process penetration is increased by	1	Increasing current and decreasing speed	decreasing both current and speed	increasing both are voltage and speed	increasing voltage and decreasing current
14	The temp of carburizing flame in gas welding ----- that of neutral or oxidizing flame	1	lower than	higher than	equal to	unrelated to

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15	In a four stroke cycle the minimum temperature inside the engine cylinder occurs at the	1	beginning of suction stroke	end of suction stroke	beginning of exhaust stroke	end of exhaust stroke
16	Inventory control is necessary	1	for handling stock	for L.I.Scheme	for motorized scraper	for hydraulic excavator
17	Stationary compressors may be driven by	4	steam	electric motor	internal combustion engine	all of these
18	S.I.unit of absolute (Dynamic) viscosity is	3	N/mm ²	N.mm/s	N.s/m ²	N.mm
19	What is the function of shackle with a leaf spring ?	2	control side ways	allow spring to expand in length	allow pivoting spring end	none of this
20	Flow in the river is measured with ---	3	current meter	by cross sectioning	combination of current meter and cross sectioning	none of this
21	Sp. Gravity of fully charged battery is--	1	1.28- 1.3	1.26-1.3	1.24-1.3	none of this
22	Tubeless tyre before fitting on the disc fitted with --- volume of total core volume of the tyre--	3	1/4th volume	1/3rd volume	1/8th volume	1/10th volume
23	Which of the following gear manufacturing processes is based on generation principle	1	gear hobbing	gear shaping	gear milling	gear shaving
24	In resistance welding heat is generated due to resistance between --	2	electrode and work piece	asperities between touching plate	two dissimilar metals being in contact	inter atomic forces
25	The main purpose of thermostat in an engine cooling is to--	1	allow engine to warmup quickly	prevent the coolant from boiling	pressurize the system	indicate the driver the coolant temperature
26	Principle function of lubricant is--	4	control corrosive	insulate	transmit power (Hydraulic)	all of these
27	Important parts in a compressor unit is--	4	inter cooler	after cooler	safety valve	all of these
28	Flow occurring in a pipe line when a valve is being opened is--	2	steady	unsteady	laminar	rotational
29	The unit of force in SI units is	2	kilogram	newton	watt	joule
30	In automobile the power is transmitted from gear box to differential through--	3	bevel gear	universal joint	hooke's joint	kunuckle joint

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31	The horse power transmitted by belt is depend upon--	4	tension on tight side of belt	tension on slack side of belt	radius of pulley	All of this
32	Purpose of differential gear in automobiles to--	3	control speed	avoid jerks	help in turning	obtain rear movement
33	Gear box of Car utilises --	1	compound train	simple train	epicyclic gears	complex train
34	In V-belt drive belt touches	2	at bottom	at sides only	both at bottom and sides	none of this
35	Whether any core is required in wire ropes	1	yes	no	some times	very often
36	The distance from the centre line of the row of rivet holes nearest the edge of plate to edge of plate should be--	3	d	1d-1.5d	1.5d-2.5d	2.5d-3.0d
37	Factor of safety is the ratio of	1	yeild stress / working stress	tensile stress/working stress	compressive stress / working stress	bearing stress / working stress
38	Which types of gear will be used for non-intersection perpendicular shaft-	1	helical gear	worm gear	hypoid gear	none of this
39	Which is the correct statement ? Fatigue cracks can spread only by--	1	tensile stress (and not by compressive or shear) and in direction perpendicular to tensile stress	tensile stress and in direction along the tensile stress	compressive stress and shear stresses	shear stress
40	A chain drive is used for--	4	short distance	longer distance	medium distance	distance is no criterion for chain drive
41	Outside micrometer is callibrated with the help of--	4	inside micrometer	depth micrometer	ring gauges	slip gauges
42	The following materials give corrosion resistance gear sets	3	hard materials	hardened steel	non-ferrous materials	stainless steel
43	The value of form factor used in design of gear is	4	independe of the size of the tooth	depends on the number of teeth on a gear	depends on the system of the teeth	all of these

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44	Pressure angle in worm gears is the angle between --	3	tangent to the pitch helix and the plane of rotation	tangent to the pitch helix and element of the pitch cylinder	half the angle between to inclined faces in the axial plane	all of these
45	A shaft rotating in anticlockwise direction at the high speed inside a bearing will be--	2	at bottom most of bearing	toward right side of bearing and making no metal to metal contact	toward left side of bearing and making no metal to metal contact	toward right side of bearing and making metal to metal contact
46	The period corresponding no movement of cam follower for cam rotation is known as	4	stationary	fixed	constant	dwell
47	The ability of material to resist softening at high temperature is known as	3	creep	hot tempering	hot hardness	fatigue
48	The percentage of carbon in pig iron varies from --	4	0.1 to 1.2 %	1.5 to 2.5 %	2.5 to 4.0 %	4.0 to 4.5 %
49	Hardness of steel depends on-	2	amount of carbon it contains	the shape and distribution of the carbides in iron	method of fabrication	contents of alloying elements
50	Corrosion resistance of steel is increase by addition of---	1	chromium and nickel	sulphur, phosphorus, lead,	vanadium, aluminium	zinc.
51	Basic constituents of monel metal are --	1	nickel, copper	nickel, molybdenum	zinc,tin, lead	none of this
52	Which is the false statement about tempering. Tempering is done to	1	improve machinability	improve ductility	improve toughness	release stresses
53	Which of the following has better capability to bear sudden and excessive shocks ?	4	cast iron	pig iron	white iron	wrought iron
54	T-joint weld is used-	1	where longitudinal shear is present	where severe loading is encountered and the upper surface of both pieces must be in the same plane	to join two pieces perpendicularly	none of this

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55	Fluxes are used in welding in order to protect the molten metal and the surfaces to be joined from	1	oxidation	carburizing	dirt	distortion and warping
56	Weld spatter is	3	flux	electrode coating	welding defect	welding test
57	The important mechanical property for a material to be successfully rolled or forged is	2	brittleness	malleability	ductility	elasticity
58	Symmetrical hollow parts of circular cross section are made by	4	forging	extrusion	drawing	spinning
59	External screw threads can be produced by	4	milling	chasing	casting	rolling
60	Gear shaping is related to	3	template	form tooth process	hob	all of these
61	The usual ratio of forward and return stroke in shaper is	2	2:1	3:2	1:2	2:3
62	A good lubricant for thread cutting operation is	3	Graphite	white lead	mineral lard oil	water soluble oil
63	Which of the following properties are essential for a tool material used for high speed machining	1	red hardness wear resistance and toughness	red hardness and impact resistance	red hardness and wear resistance	toughness and impact resistance
64	The following gauge is used for checking of holes	3	ring gauge	snap gauge	plug gauge	dial gauge
65	The cutting tool used in the spark erosion machining process is called	3	arc	capacitor	electrode	dielectric
66	The size of abrasive grain in abrasive grain in abrasive jet machining varies between	2	1 to 10 microns	10 to 50 microns	50 to 100 microns	100 to 500 microns
67	Poor surface finish results due to	4	heavy depth of cut	low cutting speed	high cutting speed	coarse feed
68	Pick up the incorrect statement about plano miller	1	cutting can be done on one side only at a time	feed as given by moving the table	in comparison to planing machine the table movement is slower	used for production of large surface
69	Negative rake is usually provided on	3	H.S.S. tools	high carbon steel tools	cemented carbide tools	all of these

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70	A grinding wheel gets glazed (shining cutting edges)	1	wear of abrasive grains	breaking up of abrasive grains	wear of bond	cracks of grinding wheel
71	A grinding wheel is completely specified by the following elements taken in order	1	type of abrasive, grain size, structure	Grain size, grade, structure, type of abrasive, bond	structure, bond, grain size, type of abrasive. Grade	bond, structure, grain size, type of abrasive
72	Which is correct statement? A twist drill	1	should not be relied on for accurately sized holes	can be relied on for accurately sized holes	capability for production of accurately sized holes depends on its condition	is most commonly used for production accurately sized holes
73	The workpiece is advanced as follows in centreless grinding	4	manually by operator	automatically by machine drive	on its own	force exerted by regulating wheel
74	Optical flats are made of	1	quartz	glass	plastic	stainless steel
75	V block is used in the workshop to check	1	roundness of a cylindrical work	surface roughness	dimensions of oval job	taper on a job
76	Work study is done with the help of	3	process chart	material handling	stop watch	all of these
77	Choose the wrong statement. Motion study is used for	2	improving a work method	reducing inventory costs	improving a work method	designing a work method
78	Inventory management consists of	4	Effective running of stores	state of merchandise method of storing and maintenance etc.	stock control system	all of these
79	Under the apprenticeship Act	4	all industries have to necessarily train the apprentices	industries have to train apprentices according to their requirement	all industries employing more than 100 workers have to recruit apprentices	only industries employing more than 500 workers have to recruit apprentices

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80	Pick up the incorrect statement from the following	4	an activity of the project is denoted by an arrow on the network	the tail of the arrow indicates the start of the activity	the head of the arrow indicates the end of the activity	the arrows are drawn to scale from left to right
81	Salvaging means	4	writing of the assets	adjusting losses against assets	mortgaging property	disposing off property which is no longer useful in present situation
82	Which of the following is the most important characteristic of a measuring instrument in general?	3	precision	accuracy	repeatability	sensitivity
83	Accuracy is	4	the repeatability of a measuring process	error of judgement in recording an observation	the ability of instrument to reproduce same reading under identical situations	agreement of the result of measurement with the true value of the measured quantity
84	Gas laws are applicable to	2	gases as well as vapours	gases alone and not to vapours	gases and steam	gases and vapours under certain condition
85	The ratio of two specific heats of air is equal to	4	0.17	0.24	0.1	1.41
86	Which of the following quantities is not property of the system	4	pressure	temperature	specific volume	heat
87	Mixture of ice and water form a	4	closed system	open system	isolated system	heterogeneous system
88	Which of the following process is irreversible process	3	isothermal	adiabatic	throttling	all of these
89	When a liquid boils at constant pressure the following parameter increases	4	temperature	heat of vaporisation	kinetic energy	entropy

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90	If a system undergoing a series of process returns to the initial state then	4	process is thermodynamically in equilibrium	process is executed in closed system cycle	its entropy will change due to irreversibility	sum of heat and work transfer will be zero
91	The heat addition in dual combustion cycle is done at	3	constant pressure	constant volume	partly at constant pressure and partly at constant volume	constant temperature
92	A steam nozzle converts	2	kinetic energy into heat	heat energy into kinetic energy	heat energy into potential energy	potential energy into heat
93	Pick up the correct sentence from the following	3	all the engines have same efficiency	all the reversible engines have same efficiency	all the reversible engines working between the same temperature limits have same efficiency	in order to obtain high efficiency all engines are designed as reversible
94	The working cycle in case of four stroke engine is completed in following number of revolutions of crankshaft	3	1/2	1	2	4
95	In a diesel engine the fuel is ignited by	3	spark	injected fuel	heat resulting from compressing air that is supplied for combustion	ignitor
96	Scavenging air in diesel engine means	4	air used for combustion sent under pressure	forced air containing	burnt air containing products of combustion	air used for forcing burnt gases out of engines cylinder during the exhaust

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97	Pick up the wrong statement	2	2-stroke engine can run in any direction	Petrol engines occupy more space than diesel engines for same power output	in 4 stroke engine a power stroke is obtained in 4 strokes	thermal efficiency of 4 stroke engine is more due to positive scavenging
98	The maximum temperature in the I.C. engine cylinder is of the order of	4	500-1000° C	1000-1500° C	1500-2000° C	2000-2500° C
99	If one cylinder of a diesel engine receives more fuel than the others then for that cylinder the	1	Scavenging occurs	exhaust will be smoky	piston rings would stick into piston grooves	exhaust temperature will be high
100	Most high speed compression engines operate on	3	diesel cycle	otto cycle	dual combustion cycle	special type of air cycle
101	The accumulation of carbon in a cylinder results in increase of	4	clearance volume	volumetric efficiency	ignition time	effective compression ratio
102	Diesel fuel compared to petrol is	3	less difficult to ignite	just about the same difficult to ignite	more difficult to ignite	more difficult to ignite
103	A 75 cc engine has following parameter as 75 cc	3	fuel tank capacity	lub oil capacity	swept volume	cylinder volume
104	Which of the following is false statement? Some of the methods used to reduce diesel smoke are as follows	3	using additives in the fuel	engine derating i.e. reducing the maximum flow of fuel	increasing the compression ratio	adherence to proper fuel specification
105	The reason for supercharging in any engine is to	3	increase efficiency	increase power	reduce weight and bulk for a given output	effect fuel economy
106	Installation of supercharger on a four cycle diesel engine can result in the following percentage increase in power	2	upto 25%	upto 100%	upto 75%	upto 35%
107	A diesel engine has	3	1 valve	2 valves	3 valves	4 valve

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108	The knock in diesel engine occurs due to	1	instantaneous and rapid burning of the first part of the charge	instantaneous atuo ignition of last part of charge	delayed burning of the first part of the charge	reduction of delay period
109	Which is more viscous lub oil?	4	SEA 30	SEA 40	SEA 70	SEA 80
110	What type of valve is a foot valve--	3	gate valve	ball valve	non-return or one way type valve	butterfly valve
111	The function of fuel pump in a petrol pump is to	3	inject fuel in cylinder	supply fuel when carburettor fails	pump fuel so that it reaches carburettor	improve thermal efficiency
112	The heat wasted in diesel rings needs about following amount of air	2	80%	65%	50%	35%
113	The ratio of useful power; engine friction; exhaust gas losses; cooling water, air and oil losses for a diesel engine is of the order of	1	25 : 5 : 35 : 35	5 : 25 : 30 : 50	25 : 35 : 5 : 35	25 : 5 : 10 : 60
114	Method of governing used in petrol engine is	1	quantity governing	quality governing	combined governing	partial governing
115	When an engine is idling, it requires	3	no fuel in the air	lean fuel air mixture	rich fuel air mixture	stoichiometric mixture
116	four wheel drive implies	2	vehicle has 4 wheels	all the four wheels cant be steered	all the four wheels can be steered	rear of vehicle has four wheels which are powered
117	Which of the following is a fire tube boiler ?	1	locomotive boiler	cochran boiler	cornish boiler	babcock and wilcox boiler
118	A boiler in India should conform to safety regulations of	4	DIN	BS	ASTM	IBR
119	Which device is used in thermal power plants to reduce level of pollution?	4	induced draft fan	smoke meter	chimney	predcipitator
120	A dense white smoke from a chimney indicates	2	insufficient air	too much air	correct air	less turbulence

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121	The function of a flywheel is to	2	facilitate start of machine	smooth out power impulses	act as pulley for belt drive	to store energy for periods of failure of main supply
122	Which is varied in throttle governing in steam engine?	1	pressure of intake steam	volume of intake steam	temperature of intake steam	dryness fraction
123	If L be the stroke in metres and N its rpm, then piston speed in m/min is given by	3	LN	LN/2	2LN	LN/4
124	Free air is the air at	1	atmospheric conditions at any specific location	20°C and 1 kg/cm ² and relative humidity of 36%	0°C and standard atmospheric conditions	15°C and 1 kg/cm ²
125	The compressor capacity with decrease in suction temperature	1	increases	decreases	remains unaffected	may increase or decrease depending on compressor capacity
126	Inter cooling in compressors	2	cools the delivered air	results in saving of power in compressing a given volume to given pressure	is the standard practice for big compressor	enables compression in two stages
127	separators are generally installed in compressor	1	after the intercooler	before intercooler	before the receiver	after the aftercooler
128	Mining industry usually employs following motive power	2	A.C. electric motor	compressed air	petrol engine	diesel engine
129	An air receiver is to be placed outside. Should it be placed in	2	sun	shade	rain	enclosed room
130	Reciprocating air compressor is best suited for	2	large quantity of air at high pressure	small quantity of air at high pressure	small quantity of air at low pressure	Large quantity of air at low pressure
131	Losses in a centrifugal compressor are due to	4	inlet losses	impeller channel losses	diffuser losses	all of these

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132	For supplying intermittent small quantity of air at high pressure, following compressor is best suited	2	centrifugal	reciprocating	axial	screw
133	Surging is the phenomenon of	3	air stream blocking the passage	motion of air at sonic velocity	unsteady, periodic and reversed flow	air stream not able to follow the blade contour
134	Axial flow compressor resembles	3	centrifugal pump	reciprocating pump	turbine	sliding vane compressor
135	The material commonly used for air craft gas turbine is	4	stainless steel	high alloy steel	duralumin	timken, haste and inconel alloys
136	The maximum combustion pressure in gas turbine as compared to I.C. engine is	2	more	less	same	depends on other factors
137	in jet engines for the efficient production of conservation of	3	Vaccum	atmospheric air	compressed air	oxygen alone
138	Regenerator in gas turbine results in	1	improved thermal efficiency	lower work ratio	higher work ratio	lower thermal efficiency
139	When the fuel is burned and the water appears in the vapour phase, the heating value of fuel is called	2	enthalpy of formation	lower heating value	higher heating value	none of this
140	Modern practice is to use ----- excess air	4	5 to 10 %	15 to 20%	20 to 25 %	25 to 50 %
141	The effect of considering friction losses in steam nozzle for the same pressure ratio leads to	2	increase in exit velocity from the nozzle	decrease in exit velocity from the nozzle	no change in exit velocity from the nozzle	increase or decrease depending upon the exit quality of steam
142	Reheat factor in steam turbines depends on--	4	exit pressure only	stage efficiency only	initial pressure and temperature only	all of these

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143	The cooling section in the surface condenser--	2	increase the quantity of vapour extracted along with air	reduce the quantity of vapour extracted along with air	does not affect vapour quantity extracted but reduces pump capacity of air extraction pump	none of this
144	The thermal efficiency of petrol engine as compared to diesel engine is --	1	lower	higher	same for output	same for same speed
145	The fuel-Air ratio for maximum power of S.I.engines should be--	2	lean	rich	may lean or rich	chemically correct
146	In four cylinder petrol engine the standard firing order is--	4	1-2-3-4	1-4-3-2	1-3-2-4	1-3-4-2
147	Desirable characteristics of combustion chamber for S.I.Engines to avoid knock is--	4	small bore	short ratio of flame path to bore	absence of hot surfaces in the end region of gas	all of these
148	For reciprocating air compressor the law of compression desired is isothermal and that may be possible by-	1	very low speed	very high speed	any speed as speed does not affect the compression law	none of this
149	In a centrifugal air compressor the pressure ratio is increased by --	4	increasing the speed of impeller keeping its diameter fixed	increasing the diameter of the impeller keeping its speed constant	reducing inlet temperature keeping impeller diameter and speed fixed	all of these
150	Which of the following is a higher pair ?	1	Belt & pulley	Turning pair	Screw Pair	Sliding pair
151	An Automobile steering gear is a an example of	3	Sliding Pair	Rolling Pair	Lower Pair	Higher Pair
152	The relation between number of pairs forming a kinematic chain & the no. of links is	3	$l = 2p - 2$	$l = 2p - 3$	$l = 2p - 4$	$l = 2p - 5$
153	TOE means--	1	transfer entry order	transition entry order	transfer edit order	none of the above
154	Efficiency of a screw jack is given by	2	$\tan(\alpha + \theta)/\tan \alpha$	$\tan \alpha/\tan(\alpha + \theta)$	$\tan(\alpha - \theta)/\tan \alpha$	$\tan \alpha/\tan(\alpha - \theta)$

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155	In a multiple V belt drive, if one of the belt is broken then we should replace	2	the broken belt only	all the belts	the broken belt & the belt on either side of it	none of the above
156	The gears are termed as medium velocity gears if their peripheral velocity is	2	1 - 3 m/s	3 - 15 m/s	15 - 30 m/s	30 - 50 m/s
157	Which of the following statement is correct for a gears ?	4	The addendum is less than dedendum	The pitch circle diameter is the product of module & no. of teeth	The contact ratio means the no. of pairs of teeth in contact	all of these
158	In a four stroke I C engine the turning moment during the compression stroke is	2	positive throughout	negative throughout	positive during major portion of the stroke	negative during major portion of the stroke
159	Which of the following statement is wrong ?	4	The difference between maximum & minimum energies is called maximum fluctuation of energy.	The coefficient of fluctuation of speed is the ratio of maximum fluctuation of speed to the mean speed.	The variation of energy above & below the mean resisting torque line is known as fluctuation of energy.	none of the above
160	Which of the following material has the maximum ductility	1	Mild steel	copper	zinc Aluminium	none of the above
161	The metal suitable for bearings subjected to heavy loads is	2	silicon bronze	white metal	monel metal	phosphor bronze
162	In order to remove internal stresses produced by hardening the steel, the process usually adopted is	1	tempering	annealing	normalising	spheroidising
163	Stress concentration is caused due to	3	variation in load acting on a member	variation in properties of material in a member	abrupt change of cross section	all of these
164	CPM is the--	3	time oriented technique	event oriented technique	activity oriented technique	target oriented technique

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165	According to I.B.R. the thickness of boiler shell should not be less than	4	4 mm	5 mm	6 mm	7 mm
166	In a transverse fillet welded joint the size of weld is the throat of weld.	3	0.5 times	equal to	$\sqrt{2}$ times	double
167	Which of the following statement is correct ?	4	The distance from a point on one thread to the corresponding point on the next thread is called pitch	The distance which a screw thread advances axially in one rotation of the nut is called lead.	in single start thread lead is equal to pitch	all of these
168	The machine screws are	1	slotted for a screw driver & are generally used with a nut	similar to tap bolts except that they are of small size & a variety of shapes of heads are available	used to prevent relative motion between two parts	none of the above
169	Which of the following statement is wrong ?	2	A key used as a temporary fastening	A key is subjected to tensile stresses	A key is always inserted parallel to the axis of the shaft	A key prevents relative motion between the shaft & boss of the pulley
170	When the pulley or other mating piece is required to slide along the shaft a Sunk key is used.	3	rectangular	square	parallel	none of the above
171	Oldham coupling is used to connect two shafts	3	which are perfectly aligned	which are not in exact aligned	which are have lateral misaligned	whose axes intersect at a small angle
172	A connecting rod should be	3	strong in buckling about X- axis	strong in buckling about Y- axis	equally strong in buckling about X axis & Y- axis	any one of the above

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173	Creep in belt is due to	3	material of the belt	material of the pulley	uneven extension & contraction due to varying tension	all of these
174	when a belt drive is transmitting maximum power	4	effective tension is equal to centrifugal tension	effective tension is half of centrifugal tension	driving tension on slack side is equal to centrifugal tension	driving tension on tight side is twice the centrifugal tension
175	Crowning on pulley helps	3	in decreasing the slip of the belt	in increasing the slip of the belt	to keep the belt in center on a pulley while it is in motion	in increasing pulley life
176	A spring is used to	4	measure forces	apply force	store energy	all of these
177	Which of the following statement is wrong ?	4	The solid length of a spring is the product of total no. of coils & the diameter of the wire	The spring index is the ratio of mean diameter of coils & the diameter of the wire	The spring stiffness is the load required per unit deflection of the spring	The pitch of the coil is the axial distance between adjacent coils in the compressed state
178	The cam follower extensively used in air craft engine is	4	knife edge follower	flat faced follower	spherical faced follower	roller follower
179	The form factor of a helical gear With the increase in helix angle	1	increases	decreases	remain constant	all of these
180	The mass of 2.5 m ³ of a certain liquid is 2 tonnes Its mass density is	4	200 kg/m ³	400 kg/m ³	600 kg/m ³	800 kg/m ³
181	When a body is placed over a liquid it will float if	2	gravitational force is equal to the upthrust of the liquid	gravitational force is less than to the upthrust of the liquid	gravitational force is more than to the upthrust of the liquid	none of the above
182	PERT analysis is based on--	4	optimistic time	pessimistic time	most likely time	all of these

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183	Bernoulli's equation is applied to	4	venturimeter	orifice meter	pitot tube	all of these
184	coefficient of contraction is the ratio of	4	actual velocity of jet at vena contracta to the theoretical velocity	loss of head in the orifice to the head of water available at the exit of the orifice	actual discharge through an orifice to the theoretical discharge	area of jet at vena contracta to the area of orifice
185	The frictional resistance of a pipe varies approximately with Of the liquid	3	pressure	velocity	square of velocity	cube of velocity
186	An air vessel is provide at the summit in a syphon to	1	avoid interruption in the flow	increase discharge	increase velocity	maintain pressure difference
187	A nozzle placed at the end of water pipe line discharges water at a	4	low pressure	high pressure	low velocity	high velocity
188	The magnitude of water hammer depends upon the	4	elastic properties of the pipe material	elastic properties of the liquid flowing through pipe	speed at which the valve is closed	all of these
189	The critical depth meter is used to measure	3	velocity of flow in an open channel	depth of flow in an open channel	hydraulic jump	depth of channel
190	stoke is the unit of	1	kinematic vescosity in C.G.S. units	kinematic vescosity in M.K.S. units	dynamic vescosity in M.K.S. units	dynamic vescosity in.S. I. units
191	Works study involues --	3	only method study	only work measurement	method study and work measurement	only motion study
192	A systematic job improvement sequence will consists of---	4	motion study	time study	job enrichment	all of these
193	Half nut is connected with--	4	Milling machine	locking device	jigs and fixtures	thread cutting on lathe
194	Quick return mechanism is used in--	4	Milling machine	braoching machine	grinding machine	slotter

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
195	To clean a file it is-	2	dipped in water	cleaned with a file card	dipped in dilute alcohol	rubbed on stone
196	The characteristics that enables one material to another is it relative--	2	toughness	hardness	resilience	ductility
197	Taper on lathe spindle is--	4	01:10	01:12	01:15	01:20
198	Which machine is used for rock excavation--	4	jack hammer	wagon drill	short diamond drilling	all of these
199	Ultimate tensile strength for rubber seals of gate is min...	2	140 kg/cm ²	145 kg/cm ²	150 kg/cm ²	160 kg/cm ²
200	Tool required for fabricating gate leaf--	4	Elect.welding machine	portable grinder	scale	all of these
201	Which pumps are preferred for the Lift irrigation Schemes.	3	Screw Pumps	Positive Displacement Pump	Non Positive Displacement Pump	Reciprocating Pump
202	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
203	The fluid pressures are directly proportional to the .....of the liquid.	1	Specific Gravity	Turbidity	Velocity	None of these
204	The pressure Gauge attached on the delivery line of pump shows reading of 10 kg/cm ² , i.e. Pressure in terms of meter of water column is.....	1	100 m	10 m	760 mm	100 cm
205	NPSHA is a property of in the Lift Irrigation scheme.	4	Rising Main	Pumps	Valves	Source of Water
206	In Axial flow pump , shut off head is% of duty head.	3	120	160	300	100
207	In sump model study , the model test set up is constructed using Law of Similarity.	1	Froude Model	Reynold's Model	Euler Model	Mach Model
208	The frictional head loss in the Rising Main is directly proportional to almost of the discharge.	1	Square	Cube	Square root	None of these

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
209	The pumping system in the Lift Irrigation basically operates on the.....principal.	2	Raynould	Bernoullis	Newton	Buckinghams
210	The efficiency of Centrifugal pump is predicted from calculation of the .....of the pump.	1	Specific speed	NPHHA	NPSHR	Suction Specific speed
211	To get the incentive in the electric bills , the minimum power factor of the Lift Irrigation scheme should be.....	3	0.9	0.84	0.93	0.87
212	The full form of BHRA is	1	British Hydromechanics Research Association	Bharat Hydraulic Research Academy	British Hydrodynamic Research Association	Bernaullis Hydraulic Research Association
213	In sump model study, as per recommendation of HIS, the swirl angle should be less than or equal to deg. to avoid the submerged vertices.	3	1	7	5	10
214	Calculate the motor KW of the pump designed for 102 m head and 750 lps discharge, if attainable efficiency of the pump is 75% and recommended power margin is 10%.	2	1000 kw	1100 kw	1020	None of these
215	In screw Stem hoist , which of the following thread is adopted for power transmission in either direction.	2	Acme threads	Square threads	Buttress threads	Multiple threads
216	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
217	The prime mover (Motor) of the EOT crane hoisting mechanism should be of .....class duty.	4	S1	S2	S3	S4
218	The instrument used to measure the size of bore of gear or drum in the accuracy of 0.010 mm is.....	1	Bore dial indicator	Vernier calliper	Micrometer	None of these

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
219	In screw stem hoist, bearing is suitable for supporting nut to carry the load in vertical direction	3	Ball	Taper Roller	Thrust	Needle
220	The over load factor considered while selecting the motor for Rope drum hoist is	1	1.2	1.4	1.25	1.5
221	Tolerance used for making bores to wheels such as gears, pulley is	1	H7	H8	K10	None of these
222	To obtain the finish of the diameter of the shaft within 10-20 microns , the process to be used is	3	Honing	Turning	Grinding	Knurling
223	The rubber seal used in the control gates of the dam should have Shore Durometer hardness up to	4	120+/- 5	40+/-5	20+/-5	65+/-5
224	The maximum factor of safety preferred for Wire rope selection is .....under normal operating condition.	1	6	10	2	4
225	Metal cladding of seal will the coefficient of friction between the mating surfaces.	1	Reduce	increase	have no effect on	None of these
226	In Upstream suspended rope drum hoist , gear capacity and reduction ratio required is .....downstream suspended rope drum hoist	2	less than	more than	equal to	half of
227	.....starter are provided for operating and controlling the Hoisting mechanism of Radial gates.	1	Direct on line (DOL)	Star delta	Pneumatic	None of these
228	Wire rope of the rope drum hoist is made up of .....steel.	2	mild	improved plough	Cast	None of these
229	The full form of ICPO is	1	Irrigation cum power outlet	Integrated concrete power outlet	Integrated central power outlet.	None of these

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
230	While unloading an excavator from a transporter, it is best to _____	1	Have the bucket in front of machine's direction of travel and close to ground	Have the bucket in back of the machine's direction of travel	It doesn't matter	None of the above
231	The joystick controls on an excavator should always return to a _____ position once they are released.	3	Forward	Back	Neutral	Rollover
232	The relief valve pressure required for swing circuit of mid-sized excavator (0.6 m3 capacity) is.....	2	150 kgf/sq.cm	285 kgf/sq.cm	340 kgf/sq.cm	120 kgf/sq.cm
233	The temperature indicating instrument in vehicles indicates the temperature of	4	Engine piston	Engine cylinder	Lubricating oil	Jacket cooling water
234	The function of oil control rings is that it	3	Lubricates the cylinder wall by releasing oil from its hole	Keeps the cylinder wall lubricated by holding oil in its channel	Prevents engine oil from going into the combustion chamber and returns excess lubricating oil off the cylinder wall through the return holes in the piston to the oil pan	Maintains a seal and prevents escape of burned gases and oil leakage

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
235	The power actually developed inside the engine cylinder is called as	1	Indicated power	Brake Power	Frictional power	None of these
236	A diesel engine has excessive black smoke when started in the morning. Which of these could be the cause ?	1	A bad fuel injector nozzle	A restricted fuel filter	A blocked fuel tank vent	A leaking fuel return line
237	What is the specific gravity of fully charged lead acidic battery?	3	1.19	1.21	1.23	1.27
238	Noise heard from hydraulic pumps may be due to which of the following reasons? A) Lack of hydraulic oil B) Faulty hydraulic pump C) Broken suction hose D) Faulty pressure sensor	2	A & B	A,B &C	B & C	All of the above
239	Recently trending Geo scan technology in E-moving machines is useful for which of the following options? 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	2	B & C	B,C & D	C &D	All of the above.
240	In the cooling system of excavator the coolant must be changed after....	4	After 6 months or 2000 hours whichever is earlier	After 1 year or 1000 hours whichever is earlier	After 6 months or 1000 hours whichever is earlier	After 1 year or 2000 hours whichever is earlier
241	If an excavator is to be parked overnight, make sure that the fuel tank is full to prevent _____.	1	water condensation	damage to the engine	loss of oil pressure	fuel leaks
242	Sheeps-foot rollers are best used on _____ soils.	4	sandy	gravelly	rocky	fine-grained
243	A torque converter replaces a conventional _____ system.	2	hydraulic control	clutch	electronic control	power brake
244	Horsepower in a utility tractor usually ranges from about _____ hp.	2	20 to 30	40 to 100	100 to 300	400 to 600

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
245	.....Committee deals with the reports of the Controller Auditor General of India (CAG), presented to the Government, regarding the appropriation accounts of the State and allied matters noticed regarding Expenditure and Revenue.	3	Expenditure Priority	Purchase Advisory	Public Account	State Principal
246	The receipt from the treasury and disbursement of pay and allowance , payment of TA bills , reimbursement of medial bills are to be accounted for in	2	Work Cash Book	Petty Cash Book	Work Abstract register	Register of Work
247	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
248	The grants for the operation, maintenance and repairs of heavy machinery under Mechanical Organisation is made available under head.....	1	053 (47018966)	052(47017282)	2701-04	2701-05
249	Monthly account of division offices under WRD, Govt of Maharashtra is uploaded in eJALSEVA system under .....module.	4	M9	M14	M12	M24
250	How many Mechanical Division offices are there in WRD, Maharashtra	1	31	35	40	44
251	What is full form of GMIDC	4	Gujrat Medium Irrigation Development Corporation	Godawari Medium Irrigation Development Corporation	Godawari Maharashtra Irrigation Development Corporation	None of these
252	eJalseva system comprises of .....numbers of total modules.	2	30	34	44	40

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
253	The gross water storage capacity in major and minor dams in WRD, Maharashtra is utilized% for Irrigation purpose.	4	100	90	95	80
254	The electrode in TIG welding is.....	2	Consumable	Non consumable	Both	No electrode
255	The TIG welding is possible in	4	Vertical position	Horizontal position	overhead	All position
256	Which of the following is not a shielding gas	3	argon	helium	oxygen	Carbon dioxide
257	What is HAZ	1	Heat affected Zone	High arc zone	Heat available Zone	None of these
258	Surges in the pipeline are triggered due to	4	Valve closing	Pump tripping	Power failure	All of above
259	Power margin on the prime mover of centrifugal pump is required to take care of	3	Auxiliary load	Light load	Power requirement in operating zone	All of above
260	The head developed by the impeller with 300 mm diameter running at 1500 rpm is.....m. (Consider constant for impeller as 1)	1	28.3	29.3	31.3	27.3
261	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
262	Performance curve of the Centrifugal pump is a graphical representation of Head, efficiency and power against.....	3	time	torque	discharge	NPSHA
263	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
264	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

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
265	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
266	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.	4	1256	125.6	1256000	12560
267	The shaft is designed as 60 H8/f7, then tolerance grade for shaft is	2	8	7	60	56
268	The modulus of elasticity for Mild Steel is approximately equal to .....KN/mm ²	4	2.7	270	2700	210
269	The difference between basic dimensions of the mating parts is called as.....	1	Tolerance	Limit	Allowance	Deviation
270	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
271	The full form of NPSHA is	1	Net positive suction head available	Net Pressure suction head achieved	Net pressure suction head available	None of these
272	For investigating the various fluid parameters like pressure, velocity, forces , flow pattern etc,.....is the advanced tool widely used today.	2	ANSYS	CFD	CAD	LIMICS
273	Which of the following is not the valley corporation under WRD, Maharashtra	1	MIDC	VIDC	MKVDC	TIDC
274	For stress relieving of the metallic components, following process is used	1	Annealing	Quenching	Hardening	Carburising
275	The average density of the Wet soil is .....Kg/m ³	3	1200	1400	1700	2000

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
276	The steering and braking systems of automobile are parts of	3	power plant of engine	basic structure of vehicle	control system of vehicle	accessories of vehicle
277	.....are used to connect leaf spring with the chassis frame	1	spring shackles	torsion bars	helper springs	rubber torsion nuts
278	The function of the propeller shaft is...	4	to connect the engine to the drive wheels	to permit variation in speed	to permit sharp turns smoothly	a driving shaft for connecting the transmission of the main shaft to the differential at the rear axles
279	Pressure relief valve is used in case of	4	gear pump	vane pump	piston pump	All of the these
280	Efficiency of which pump is the maximum	4	gear pump	lobe pump	vane pump	piston pump
281	What is the slip of a pump ?	2	the difference between the actual discharge and theoretical discharge of the pump	the difference between theoretical discharge and actual discharge of the pump	the difference between net positive head and negative net head	the ratio of ideal head to the actual head
282	Noise level of which pump is the maximum	1	gear pump	vane pump	piston pump	screw pump
283	what type of valve is a foot valve ?	3	gate valve	ball valve	non return or one way type of valve	butterfly valve
284	Hydraulic motors are rated according to their	4	displacement	torque capacity	maximum pressure limitation	All of the these
285	S.I. Unit of absolute (dynamic) viscosity is	3	N/mm ²	N.mm/s	N.s/m ²	N.mm
286	Complete the following with the correct alternative:Rolling contact bearing as compared to sliding contact bearing	1	has lower starting torque	requires considerable axial space	generates less noise	are costly
287	Brake shoe applied on rotating train wheel is an example o	1	dry friction	boundary friction	fluid friction	mixed friction
288	The torque developed by hydraulic motor is a function of	4	displacement of hydraulic fluid	velocity of hydraulic fluid	acceleration of hydraulic fluid	pressure of hydraulic fluid
289	What are the advantages of hydraulic motors?	4	compactness	wide range of speed	explosion proof in nature	All of the these

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
290	The rotary compressors are used for delivering	4	small quantities of air at high pressure	large quantities of air to high pressure	small quantities of air at low pressure	large quantities of air at low pressure
291	Centrifugal compressor does not have advantage over reciprocating compressor for/in	3	considerably high efficiency	large size compressor needs less floor area	higher pressure increases per stage	quiet in operation
292	What is the function of a shackle with a leaf spring?	2	control sideways	allow spring to expand in length	allow pivoting of spring end	none of the these
293	The volumetric efficiency of an air cooled engine is lower due to	3	Simple engine design	use of fins on cylinder	higher cylinder head temperature	higher specific output from engine
294	For compression ignition engines minimum compression ratio is	3	7	9	12	10
295	The specific heats of gases increase with the rise in	2	volume	temperature	volume and pressure	none of these
296	Which of the following statement is correct?	4	FRL is below MWL	TBL is above FRL	MDDL is below FRL	All of these
297	Flow in the river is measured with...	3	current meter	by cross sectioning	combination of current meter & cross sectioning	none of these
298	How many modules are there in e-jalseva?	4	31	32	33	34
299	What is the full form of MDDL?	1	Maximum draw down level	minimum draw down level	maximum draining in dam level	none of the these
300	For the same maximum pressure and temperature of a cycle which one is more efficient?	2	otto cycle	diesel cycle	dual combustion cycle	none of the these
301	The injector of fuel directly into the combustion chamber without primary atomisation is known as..	2	liquid injection	solid injection	air injection	common rail injection
302	The gear pump is of which type?	2	rotodynamic	positive displacement	negative displacement	hydrodynamic
303	For only hydraulic pump , delivery of a pump reduces with..	1	increase in pressure at constant speed	increase in speed at constant pressure	reduction in pressure	none of the above

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
304	In a centrifugal pump , the liquid enters the impeller	4	at the top	at the bottom	from sides	at its center
305	What cuts down battery life?	4	Over charging	undercharging	leaving battery idle	All of these
306	Sp.gravity of fully charged battery is	1	1.280 - 1.3	1.260 - 1.3	1.240 - 1.3	None of these
307	How many cells are in 12 Volts battery?	1	6 cells	3 cells	12 cells	9 cells
308	Tyre are made up of	4	Good quality rubber	cotton thread	steel thread	All of these
309	Recommended tyre pressure for 9.00 X 20.00----- 12 PR is	1	6 kg/cm2	6.7 kg/cm2	6.5 kg/cm2	7 kg/cm2
310	Tubless tyre before fitting on the disc fitted with ----- volume of total core volume of the tyre	3	1/4 th volume	1/3 rd volume	1/8 th volume	1/10 th volume
311	Generally to irrigate one Acre of land for one inch depth requires	1	22630 gallons of water	22640 gallons of water	30630 gallons of water	None of these
312	Preventive maintenance includes	4	Schedule lubrication	Frequent cleaning	inspecting	All of these
313	At what time do you check the air pressure in tyres	1	When tyre are cool	When tyre are hot	When tyre get punctured	None of these
314	Details required while ordering spare parts for equipment	4	Make	Model and engine	Part no	All of these
315	State the machine you will use for stripping a large dam seat involving shrubs?	1	Dozer	Dumper & tippers	Tractors	Vibratory roller
316	Give reason for : Diesel engine consumes excessive lubricating oil.	4	lack of compression	Wear of lub. Oil ring	excessive leakage from tappet cover ,oil filter etc	All of these
317	Give reason for : A jeep engine consumes excessive petrol	1	Over load	speed too low	wrong direction of rotation	All of these
318	The main electrical system of jeep consists of	4	Battery 6 volt or 12 volt	distributor	spark plug	All of these
319	Ultimate tensile strength for rubber seals of gate is min.....	2	140 kg/cm2	145 kg/cm2	150 kg/cm2	160 kg/cm2

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
320	The most favorable conditions for preserving tyres includes temp.between	1	40 and 60 degrees fahrenheit	50 and 70 degrees fahrenheit	30 and 40 degrees fahrenheit	45 and 60 degrees fahrenheit
321	Water coming out from an exhaust of a diesel engine due to	1	cylinder head has cracked	low crank case compression	wet cables	unsuitable seal size
322	Tool required for fabricating gate leaf	4	Elect.welding plant	portable grinders	scale	All of these
323	Write down the name of equipment where material to be dug is firm or hard	4	Back hoe	clamsheel (Bucket elevator)	Stone crusher	Shovel
324	Write down detailed specifiaction of wire rope size 6 X 19	1	six strands of nineteen wires each	nineteen strande of six wires each	six strands of six wires each	none of these
325	The C.I. engine uses a much higher compression ratio i.e	1	14:1 to 18:1	14:1 to 16:1	14:1 to 19:1	None of these
326	Most of the metal cutting heat goes into the	1	moving chip	cutting tool	work material	machine tool
327	Cutting speed in grinding is set to a high value to	4	reduce the cutting time	increase the bond strenght	improve cooling of job and wheel	reduce the wheel wear
328	Which of the following gear manufacturing processes is based on generation priciple.	1	gear hobbing	gear shaping	gear milling	gear shaving
329	For wire drawing operation ,the work material should essentially be	3	ductile	tough	hard	malleable
330	Allowance in limits and fits refers to	2	maximum clearance between the shaft and hole	minimum clearance between the shaft and hole	difference between the maximum and minimum size of hole	difference between the maximum and minimum size of shaft
331	Outside micrometer is callibrated with the help of	4	inside micrometer	depth micrometer	ring gauges	slip gauges
332	Which one of the Instrument is a comparator	4	tool makers microscope	Go/NOGO gauge	optical interferometer	dial gauge

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
333	For gas welding a particular job using a neutral oxy-acetylene flame the acetylene consumption was 10 ltrs.The oxygen consumption from the cylinder in litres will be	2	5	10	15	20
334	In resistance welding ,heat is generated due to the resistance between	2	electrode and work piece	asperities between touching plates	two dissimilar metals being in contact	inter atomic forces
335	In welding process,penetration is increased by	1	increasing current and decreasing speed	decreasing both current and speed	increasing both arc voltage and speed	increasing arc voltage and decreasing current
336	Two plates of the same metal having equal thickness are to be butt welded with electric arc:When the plate thickness changes,welding is achieved by	1	adjusting the current	adjusting the duration of the current	changing the electrode size	changing the electrode coating
337	The temp of a carburizing flame in gas welding..... That of a neutral or an oxidizing flame	1	lower than	higher than	equal to	unrelated to
338	The metal powder used in Thermit welding of steel is	1	Al	cutting tool	Pb	w
339	If a fluid expands suddenly into vacuum through an orific of large dimension , then such a process is called	1	free expansion	hyperbolic expansion	parabolic expansion	throttling
340	when low carbon steel is heated upto lower critical temperature	1	there is no change in grain size	the average grain size is a minimum	the grain size increases very rapidly	the grain size first increases and then decreases very rapidly
341	The cam follower generally used in automobile engine is	3	knife follower	flat faced follower spherical faced follower	spherical faced follower	roller follower
342	In a four stroke cycle,the minimum temperature inside the engine cylinder occurs at the	1	beginning of suction stroke	end of suction stroke	beginning of exhaust stroke	end of exhaust stroke

General mechanical engineering

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
343	The main purpose of thermostat in an engine cooling system is to	1	allow engine to warm up quickly	prevent the coolant from boiling	pressurize the system	indicate the driver the coolant temperature
344	The specific speed of a hydraulic turbine depends upon	4	speed and power developed	discharge and power developed	speed and head of water	speed, power developed and head of water
345	Principle function of lubricant is	4	control corrosive	insulate	transmit power (Hydraulic)	All of these
346	The capacity of battery is measured in	2	Watt	watt.hours	ampere	none of these
347	Important part in a compressor unit is	4	inter cooler	after cooler	safety valves	All of these
348	Injectors are provided on	2	air compressors	C.I. engines	on hot mix plant	mobile crane
349	Inventory control is necessary	1	for handling stock	for L.I. scheme	for motorised scraper	for hydraulic excavators
350	Stationery compressors may be driven by	4	steam	electric motor	internal combustion engines	All of these

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 exceed .....times 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 have .....Amp 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 is .....MT.	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 provided .....times 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 is .....for 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.
	A) Damaged centre joint					

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
24	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 by .....are accepted	2	IPMA	IEEPMA	BHRA	HIS
36	The contractors recovery is recorded in of the R A 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 by .....joint.	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
47	How excavator is generally specified in market	2	Bucket capacity	Weight of machine	Digging Capacity	Engine power

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 with .....make engine.	1	Mitsubishi	Isuzi	INTAC	Kirloskar
51	The swing RPM is 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 of .....type 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 is .....compared 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 with .....mm 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 with .....bearing.	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
76	The high precision core of the Current Transformer is used for .....system	1	Controlling and Protection	Measuring	Charging	None of these
77	The cost of motor is inversely proportional to the	2	Power	Speed	Torque	Inertia

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 of .....duty.	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
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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 at .....major project in Maharashtra	4	Koyana	Dudhganga	Gosikhurda	Radhanagari
118	Radial gates with three end arm construction is used at .....major 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 with .....pump 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 with .....pumping 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 arrestor , 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 lines .....joints 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 other .....is used.	3	Turn buckle	Knuckle joint	Universal joint	None of these
136	A connecting rod is a member which is subjected to alternate direct .....forces.	1	Compressive and tensile	Only tensile	Only compressive	None of these
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 the .....direction.	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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 in .....direction.	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 /mm2	10 Kg/cm2	760 kg/cm2	1.033 kg/cm2
149	The fluid pressures are directly proportional to the .....of 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 of .....numbers 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
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 time	Directly proportional to torque	Inversely proportional to discharge	None of these
164	Performance curve of the Centrifugal pump is a graphical representation of Head, efficiency and power against.....	3				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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 is .....Kg/m ³	3	1200	1400	1700	2000
176	The volute pumps and vortex volute pumps are .....pumps with .....shaft.	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					
189	The working cycle in case of four stroke engine is completed in .....number 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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 exceed .....times 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 guarantee 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 have .....Amp 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 is .....MT.	4	20	36	44	42
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 through .....gearing.	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 of .....m in WRD, Maharashtra	3	12 x 5	12 x 8	12 x 6.5	None of these

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
208	The clearance between trunnion bracket and anchor girder of radial gate assembly is filled by zinc 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 provided .....times of the diameter of wire rope.	2	35	0.35	25	0.25
213	Vertical lift gates of Barrages are provided with .....sealing 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.
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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 by .....are 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 is .....days.	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 by .....joint.	3	Square butt	Parallel fillet	Single V butt	Double V butt
242	The allowable velocity in the suction piping is .....m/s as per HIS	1	1.2 to 1.7	3 to 3.5	0.1 to 0.2	4 to 5
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 with .....make 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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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 of .....type 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 is .....compared 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
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 absorbs 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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
272	The working pressure and temperature inside the cylinder of an internal combustion engine is .....as 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
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	Coefficient 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 method	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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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
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 techniqws	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

Use of Machinery

Question No	Question text	Correct option no	Option 1	Option 2	Option 3	Option 4
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
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