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SEAL

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M.Phil./Ph.D./URS-EE-Nov.-2018

SET-Z

100041

SUBJECT: Mechanical Engineering

Max. Marks: 100

_ Father's Name_

Date of Examination_

(in words)

Sr. No
Total Questions: 100

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- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
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	1.	at rest is subjected to an impulse force of magnitude 5 kN for 10 ⁻⁴ seconds. T amplitude in mm of the resulting free vibration is:	
,		(1) 0.5 (2) 1.0 (3) 5.0 (4) 10.0	•
	2.	A circular solid disc of uniform thickness 20 mm, radius 200 mm and mass 20 kg, used as a flywheel. If it rotates at 600 rpm, the kinetic energy of the flywheel, in Joul is: (1) 395 (2) 790 (3) 1580 (4) 3160	is es
	3.	If two forces each equal to P in magnitude act at right angles, their effect may neutralized by a third force acting along their bisector in opposite direction who magnitude is equal to: (1) $2P$ (2) $P/2$ (3) $\sqrt{2P}$ (4) $P/\sqrt{2}$	be se
	4.	A simple pendulum of length of 5 m, with a bob of mass 1 kg, is in simple harmon motion. As it passes through its mean position, the bob has a speed of 5m/s. The r force on the bob at the mean position is:	nic net
		(1) Zero (2) 2.5 N (3) 5 N (4) 25 N	
,	5.	A bullet of mass 0.03 kg moving with a speed of 400 m/s penetrates 12 cm into a fixe block of wood. The average force exerted by the wood on bullet will be:	ed
	1	(1) 10 kN (2) 20 kN (3) 30 kN (4) 40 kN	,
	6.	Ratio of moment of inertia of a circular body about its x-axis to that about y-axis is:	
		(1) 0.5 (2) 1.0 (3) 1.5 (4) 2.0	
	7.	The members of the truss structure are subjected to:	
		(1) Bending Stress (2) Normal Stress	
• .		(3) Shear Stress (4) Nominal Stress	
	8.	The bodies which rebound after impact are called:	
		(1) Inelastic bodies (2) Elastic bodies	
		(3) Imaginary bodies (4) All of the above	
	9.	If the end portion of a beam is extended beyond the supports, such a beam is called	•
		(1) Cantilever Beam (2) Fixed Beam	
		(3) Overhanging Beam (4) Clamped Beam	
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10.	A cylindrical elastic body subjected to pure torsion about its axis develops:
	(1) tensile stress in a direction 45° to the axis
	(2) no tensile or compressive stress
	(3) maximum shear stress along the axis of the shaft
	(4) maximum shear stress at 45° to the axis
11.	A rod of length L and diameter D is subjected to a tensile load P. Which of the following is sufficient to calculate the resulting change in diameter?
	(1) Young's modulus
	(2) Shear modulus
	(3) Poisson's ratio
	(4) Both Young's modulus and Shear modulus
12.	When two mutually perpendicular principal stresses are unequal but alike, the maximum shear stress is represented by:
,	(1) the diameter of Mohr's circle
•	(2) half the diameter of the Mohr's circle
	(3) there is no longitudinal strain in the material
	(4) none of these
13.	If the value of Poisson's ratio is zero, then it means that:
	(1) the material is rigid
	(2) the material is perfectly plastic
	(3) there is no longitudinal strain in the material
	(4) none of these
	그렇게 살아가 되면 하면 아래를 살아서 살아서 살아왔다. 그는 사람들은 사람들이 살아 없는 것이다.
14.	A long thin walled cylindrical shell, closed at both ends, is subjected to an internal pressure. The ratio of hoop stress (circumferential stress) to longitudinal stress developed in the shell is:
	(1) 0.5 (2) 1.0 (3) 2.0 (4) 4.0
15.	For a simply supported beam on two end supports, the bending moment is maximum:
	(1) Usually on the supports (2) Always at mid span
igili.	(3) Where there is no shear force (4) Where the deflection is maximum
16.	A simply supported beam of length 3 carries a concentrated load of 12 kN at a distance of 1 m from left support. The maximum bending moment in the beam is:
	(1) 12 kNm (2) 24k Nm (3) 8 kNm (4) 16 kNm
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#500 L	맛이 되지 않아 맛있는 것 모든 이 것이 없는 그들이 얼마나 되었다. 그래말이 얼마나 아버지에 어려움이 하지만 그는 그 점에 없어 먹었다.

17.	A steel rod of length L and diameter length temperature rise of ΔT . Young's moduling the thermal stress in the rod is:			
	(1) 0 (2) α ΔT	(3)	Εα ΔΤ	(4) Εα ΔT L
18.	A free bar of length L is uniformly he coefficient of linear expansion and E th (1) αtE (2) αtE/2	e mo	I from 0°C to a dulus of elastici zero	temperature t°C, α is the ty. The stress in the bar is: (4) none of these
19.	The factor which affects the critical spe	ed of	the shaft is:	normalismos y
	(1) Diameter of the mounted disc	1	east over Nov.	raion e mora
	(2) Eccentricity on the shaft			
	(3) Span of the shaft			
	(4) All of the above	,		
20.	Torque to weight ratio for a circular sh to the:	aft t	ransmitting pow	ver is directly proportional
	(1) Square root of the diameter	(2)	Diameter	
	(3) Square of the diameter	(4)	Cube of the dia	meter
21.	The fatigue life of a part can be improv	ed b	y:	Samuel Contract
	(1) Electroplating	(2)	Polishing	"Approximitation of the March
	(3) Coating	(4)	Shot peening	
22.	Buttress thread is used where power is	to be	e transmitted in	
	(1) One direction only	(2)	Two directions	
	(3) Both the directions	(4)	None of the ab	ove
23.	For the analysis of older plate clutches,	the	following theory	is applicable :
	(1) Uniform Pressure Theory		Uniform Wear	
• 4	(3) Uniform Shear Theory	(4)	None of the ab	ove was made in a
24.	The ratio of the maximum displaceme to the static force, is known as:	nt of	the forced vibr	ation to the deflection due
	(1) Damping factor	(2)	Logarithmic de	ecrement
	(3) Damping coefficient	(4)	Magnification	factor
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2	25.	Wh bea	nich one of the following is the criterion in the design of hydrodynamic journal arings?
		(1)	Sommerfield numbers (2) Rating life
			Specific dynamic capacity (4) Rotation factor
	26.		oth interference in an external involute spur gear pair can be reduced by:
		(1)	Decreasing center distance between gear pair
		(2)	
		(3)	Decreasing pressure angle
			Increasing number of gear teeth
	27		용하는 그들은 그는 것이 아니는 아이를 하는 것 같아. 그렇게 되었다는 아이를 통해야 하고 아름이 가입니다.
	27.	in (spur gears, the circle on which the involute is generated is called the:
			Pitch circle (2) Clearance angle Base circle (4) Addendum circle
		444	(*) Audendum chele
	28.		static fluid can have :
		10000000000	Non-zero normal and shear stress
		(2)	o stress and zero shear stress
		(3)	of the state of th
•		(4)	Zero normal stress and non-zero shear stress
	29.	For foll	r the stability of a floating body, under the influence of gravity alone, which of the lowing is true?
		(1)	Metacenter should be below centre of gravity
		(2)	Metacenter should be above centre of gravity
		(3)	Metacenter and centre of gravity must lie on the same horizontal line
. 3	e i	(4)	Metacenter and centre of gravity must lie on the same vertical line
3	30.	A f	luid is one which can be defined as a substance that:
		(1)	그들은 그 그는 어느 아는 이는 아이들이 그는 이는 모든 사람들이 아니라 그 아는 아이들이 그 아니는 아이들이 얼마나 아니는 아이들이 아니는
	•	(2)	Can deform indefinitely under the action of the smallest shear force
	N.	(3)	
		2	Is practically incompressible
_	4		시간에 가는 그는 그 이를 안 하면 그렇게 하셨습니다. 그 회에 주면 가게 된다고 있다.
3			e dimension of surface tension is:
		` '	ML^{-1} (2) L^2T^{-1} (3) $ML^{-1}T^{-1}$ (4) MT^{-2}
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32.	A streamlined body is defined as a body		
	(1) The flow is laminar		The flow is along the streamlines
	(3) The flow separation is suppressed	(4)	The drag is zero
33.	A streamline and equi-potential lines in	a flo	ow field:
	(1) Are parallel to each other	(2)	Are perpendicular to each other
	(3) Intersect at an acute angle	(4)	Are identical
34.	Cavitation in a hydraulic reaction turbing	ne is	most likely to occur at the turbine:
• • • • • • • • • • • • • • • • • • • •	(1) Entry (2) Exit		Stator exit (4) Rotor exit
0.5			
35.	each other, is called:	is a	definite path and their paths do not cross
	(1) Steady flow	(2)	Uniform flow
* *	(3) Streamline flow	(4)	Turbulent flow
26	In steady flow of a fluid, the acceleration	n of	any fluid particle is:
36.	(1) Constant		Variable
	(3) Zero	*	Never zero
		who	n the flow is
37.	Bernoulli's equation cannot be applied v	(2)	Turbulent
	(1) Rotational(3) Unsteady	. ,	All of these
38.	A large Reynold's number is indication	: 10	Laminar flow
	(1) Smooth and laminar flow		Highly turbulent flow
	(3) Steady flow		
39.	Pitot tube is used to measure the velocit	y he	ead of :
£ . C.	(1) Still fluid		Laminar flow
	(3) Turbulent flow		Flowing fluid
40.	Head loss in case of hot water flow thr	oug	h a pipe compared to cold water flow will
N D	he.		
<u>.</u>	(2)		Less (4) unpredictable
41.	temperature at the tip will be minimum	wh	c rod protrudes to the ambient air. The en the rod is made of:
	(1) Aluminium (2) Steel	(3)	Copper (4) Silver
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42.	42. What happens when the thickness of insulation of	on a nine exceeds the critical value?
	(1) Heat transfer rate increases	and pipe exceeds the efficient variety
	(2) 11-11	Core-accommon services (1977)
	(3) Heat transfer rate remains constant	
	(4) None of these	the engine of the engine in the A. I. E.C.
43.	43. The process of heat to the	
	43. The process of heat transfer from one particle actual motion of the particle, is known as:	of the body to another without the
	(1) Conduction (2) Con	han danala dan barah ya De A.C.
	(3) Radiation (4) All	
44.		of these
74.	(1) Fourier's least	
	· (2) C1 C 1 1	vton's law
	(3) Stelan's law (4) Firs	t law of thermodynamics
45.	good fieur conductors because:	
	(1) of free electrons present (2) their	r atoms are relatively far apart
	(3) their atoms collide frequently (4) all of	of these
46.	46. 1 micron is equal to :	등에 보는 경우 가장이 되었다.
	(1) 10-4	meters (4) 10^{-12} meters
• • • •	(5) 10	meters (4) 10^{-12} meters
47.	is a strategic from the strain of the strain	
	(1) if a physical body is impermeable to any kind	d of rays
	(2) if the parts of a body are not in motion relative	ve to one another
	(3) if the bodies are kept in vacuum	
	(4) if the temperature of the two bodies are iden	
48.	48. For steady flow and constant value of conductivi plane wall is:	ty, the temperature distribution for a
	(1) Parabolic (2) Linear (3) Log	arithmic (4) Cubic
49.	19. The thermal conductivity in S.I. units is expressed	das:
	(1) J/m^2K (2) W/mK (3) W/m	
50.	0. Fin efficiency deals with:	
	AND THE STATE OF T	nomical material requirement
	(3) Cost of manufacturing (4) All of	of these
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		TANK TO THE RESIDENCE OF THE PARTY OF THE PA

51	. A closed system is one, which:	Toy I a	d to take you	(+) a _{ri} (, (05))	Walter Breeze	
	(1) Permits the passage of energy and n	natter	across the bou	indaries .		
	(2) Does not permit the passage of ener					
	(3) Permits the passage of energy acrepassage the matter	ross	the boundary	but does	not permit	the
	(4) Permits the passage of matter acr passage of energy	ross t	the boundary	•	not permit	the
52.	. With rise of temperature, the specific he	eat of	water:	d age	Constitution (
	(1) Increases	× .	ands or grater	William Mil	n-Elfatt	
	(2) Decreases				aronio I	20-7
	(3) First decreases to minimum then inc	crease	es S	STATE OF		
	(4) Remains constant		i edin linch i	gette inne		
53.	In an isothermal process, internal energy	y :	ent land	ill direction	mark (i.)	
	(1) Increases	(2) I	Remains consta	int 🥍 🔭	# C 1	
	(3) Decreases	(4) 1	None of the abo	ove	reference	66
54.	In a reversible polytropic process:		var i mulimo i	er, 10		
	(1) Enthalpy remains constant	(2) I	Entropy remain	ns constan	t	
•	(3) Some heat transfer occurs	(4) I	Internal energy	remains o	constant	10
55	i. Isentropic flow is:					
	(1) Reversible adiabatic flow	(2) I	rreversible adi	abatic flov	V	a.
	(3) Frictionless fluid flow	(4)	None of the abo	ove		
56.	In a reversible isothermal process under	rgone	by an ideal gas	3:	B. D. C.	
	(1) Heat transfer is zero		Change in inter		y is zero	
* 1	(3) Work transfer is zero	(4) I	Heat transfer is	equal to	work transfe	rj
57.	In Carnot cycle, heat is rejected at consta	ant:	i i (canalii		Carl 1	
	(1) Volume (2) Pressure	(3)	Temperature	(4) Entre	opy.	10.
58.	. A gas, which obeys kinetic theory perfec	ctly is			n d	
	(1) Pure gas (2) Real gas	(3) I	Perfect gas	(4) All c	of these	271
59.	The absolute zero pressure can be obtain	ned at	a temperature	of:	w Ma	
·	(1) 0°C (2) 273°C	(3)	+273°K	(4) Non	e of these	
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o.	in one ton refrigeration machine, the term one ton implies.
	(1) One ton refrigerant is used
	(2) One ton water can be converted into ice
	(3) One ton ice when melts from and at 0°C in 24 hours, the refrigerating effects is equivalent to 3000 kcal/hour
1.10	(4) None of these
31.	The temperature at which, the volume of a gas becomes zero, is called:
	(1) Absolute temperature (2) Absolute zero temperature
	(3) Absolute scale of temperature (4) None of these
62.	Triple point:
	(1) Occurs in a mixture of two or more gases
	(2) Is a point, where three phases exists together
	(3) Occurs in sublimation
181	(4) None of the above
63.	The property of a working substance, which increases or decreases according to the heat supplied or removed in a reversible manner is called: (1) Enthalpy (2) Entropy (3) Reversibility (4) None of these
64.	For a pure substance at its triple point, the number of degrees of freedom is: (1) 0 (2) 1 (3) 2 (4) None of these
65.	Process of making hollow castings of desired thickness by permanent mould without the use of cores, is called:
	(1) Permanent mould casting (2) Die casting
	(3) Slush casting (4) Centrifugal casting
66.	Investment casting uses pattern made of:
	(1) wax (2) clay (3) metal (4) wood
67.	The addition of coal dust to the green moulding sand is to improve:
	(1) Permeability (2) Surface finish
•	(3) Mouldability (4) Green strength
68.	The purpose of adding wood flour or saw dust to foundry sand is to improve:
	(1) Mouldability (2) Dry strength
	(3) Hot strength (4) Collapsibility
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 (1) Shrinkage allowance (2) Identification number marked on it (3) Taper to facilitate its removal from mould (4) For machining allowance 70. Cores are used to: (1) Make desired recess in castings (2) Strengthen moulding sand (3) Support loose pieces (4) Remove pattern easily 71. The purpose of gate is to: (1) Feed the casting at a rate constant with rate of solidification (2) Act as reservoir for molten metal (3) Help to feed the casting until all solidification takes place (4) Feed molten metal from pouring basin to gate
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 (1) Feed the casting at a rate constant with rate of solidification (2) Act as reservoir for molten metal (3) Help to feed the casting until all solidification takes place (4) Feed molten metal from pouring basin to gate
73. The purpose of chaplets is to:
(1) Provide benting (2) Induce directional solidification
(3) Compensate shrinkage (4) Support the core
'4. Fluidity is greatly influenced by :
(1) Melting temperature (2) Tapping temperature
(3) Pouring temperature (4) Solidification temperature
5. Sweep pattern is used for moulding parts having:
(1) Rectangular shape (2) Elliptical shape
(3) Circular shape (4) Complicated shape
6. Process of increasing the cross-section of a bar and reducing its length is called:
(1) Spinning (2) Upsetting (3) Drawing (4) Reaming
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77.	Cold working of metal increases:
	(1) Tensile strength (2) Hardness
	(3) Yielding strength (4) All of these
78.	Hot forging of steel is done at a temperature of:
	(1) 400°C (2) 600°C (3) 1000°C (4) 1300°C
79.	In drawing operation the metal flows due to:
	(1) Fluidity (2) Work hardening
	(3) Plasticity (4) Shearing
80.	Mass production of gears is done by:
	(1) Turning (2) Hobbing (3) Shaping (4) Forming
81.	
	Blanking and piercing operations can be performed simultaneously in: (1) Simple die (2) Progressive die
	(1) Simple die (2) Progressive die (3) Compound die (4) Combination die
82.	The cutting edge of the tool is perpendicular to the direction of tool travel in:
	(1) Orthogonal cutting (2) Oblique cutting
	(3) Both (1) and (2) (4) None of these
83.	In metal cutting operation discontinuous chips are produced while machining:
	(1) Brittle material (2) Ductile material
	(3) Hard material (4) Soft material
84.	Material having highest cutting speed is:
	(1) Cast iron (2) Bronze
	(3) Aluminium (4) High carbon steel
85.	Negative rake angles are provided to:
1	(1) Give better finish
	(2) Increase strength of cutting tool point
	(3) Decrease temperature rise at tool tip
	(4) All of these
86.	To prevent tool from rubbing the work piece, angle provided on tool is:
00.	(1) Lip angle (2) Rake angle
	(3) Clearance angle (4) Relief angle
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87.	Velocity of tool relative to work piece is called:
	(1) Cutting velocity (2) Chip velocity
	(3) Shear velocity (4) Average velocity
88.	Chip thickness ratio is the ratio of:
	(1) Cutting velocity to chip velocity (2) Depth of cut to chip thickness
	(3) Chip thickness to depth of cut (4) None of these
89.	Tool life is said to be over if:
00.	(1) Poor surface finish is obtained
	(2) Sudden increase in power and cutting force with chattering takes place
	(3) Overheating and fuming due to friction start
	(4) All of these
90.	Flank wear occurs mainly on:
	(1) Nose part, front relief face and side relief face(2) Nose part and top face
	(2) Nose part and top face(3) Cutting edges
	(4) All of these
91.	
	(1) Increasing welding current and welding speed
	(2) Increasing welding current and decreasing welding speed
	(3) Decreasing welding current and welding speed
	(4) Decreasing welding current and increasing welding speed
92.	For resistance spot welding of 1.5 mm thick steel sheets, the current required is of the order:
	(1) 10 Amp (2) 100 Amp
	(3) 1000 Amp (4) 10,000 Amp
93.	Which of the following arc welding processes does not use consumable electrodes:
	(1) GMAW (2) GTAW
	(3) SAW (4) None
94.	Welding process in which flux is used in the form of granules is:
	(1) Gas welding (2) D.C. arc welding
	(3) Submerged arc welding (4) Thermit welding
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95.	. When the work is connected to the negative terminal and the electrode holder to the
	positive terminal, the welding set up is said to have:
	(1) Straight polarity (2) Reversed polarity (3) Both (1) and (2) (4) None of these
96.	그는 그는 그는 그는 그는 그는 그를 가는 사람이 있는 것이 나는 것이다. 그렇게 그 동안 얼굴하는 그릇이 되었다면 그렇게 되었다는 것이다.
	(1) Mean absolute deviation (2) Mean absolute percentage error
97.	
98.	그는 사람들이 살아보고 있다면 그는 사람들이 되었다. 그는 사람들이 살아내려면 살아내려
99.	
100.	In PERT analysis a critical activity has: (1) Maximum Float (2) Zero Float (3) Maximum Cost (4) Minimum Cost
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Total No. of Printed Pages: 13

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(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO) SET-Z

В

M.Phil./Ph.D./URS-EE-Nov.-2018

SUBJECT: Mechanical Engineering

100010

Time: 11/4 Hours		N	lax. Marks	: 100			Total Que	estions: 100
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Name		<u> </u>	Father	's Nam	e			
Mother's Name_	*:		Date o	f Exam	ination_			1.5
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(Signature of	the Candidate)		,			(Signatur	e of the In	vigilator)

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1.	A rod of length L and diameter D is subjected to a tensile load P. Which of the following is sufficient to calculate the resulting change in diameter?
	(1) Young's modulus
	(2) Shear modulus
	(3) Poisson's ratio
	(4) Both Young's modulus and Shear modulus
2.	When two mutually perpendicular principal stresses are unequal but alike, the maximum shear stress is represented by :
	(1) the diameter of Mohr's circle
	(2) half the diameter of the Mohr's circle
	(3) there is no longitudinal strain in the material
	(4) none of these
, 3 .	If the value of Poisson's ratio is zero, then it means that:
	(1) the material is rigid
2	(2) the material is perfectly plastic
	(3) there is no longitudinal strain in the material
	(4) none of these
4.	A long thin walled cylindrical shell, closed at both ends, is subjected to an internal pressure. The ratio of hoop stress (circumferential stress) to longitudinal stress developed in the shell is:
	(1) 0.5 (2) 1.0 (3) 2.0 (4) 4.0
5.	For a simply supported beam on two end supports, the bending moment is maximum:
	(1) Usually on the supports (2) Always at mid span
	(3) Where there is no shear force (4) Where the deflection is maximum
6.	A simply supported beam of length 3 carries a concentrated load of 12 kN at a distance of 1 m from left support. The maximum bending moment in the beam is:
	(1) 12 kNm (2) 24 kNm (3) 8 kNm (4) 16 kNm
7.	A steel rod of length L and diameter D, fixed at both ends, is uniformly heated to a temperature rise of ΔT . Young's modulus is E and coefficient of linear expansion is α . The thermal stress in the rod is :
	(1) 0 (2) $\alpha \Delta T$ (3) $E\alpha \Delta T$ (4) $E\alpha \Delta T L$
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8.	A free bar of licoefficient of lin	ength L is uniform near expansion and	ly heated E the mo	from 0°C	C to a temperature t° C, α is the lasticity. The stress in the bar is:
	(1) αtE	(2) αtE/2		zero	(4) none of these
9.	11.00	shaft	speed of	the shaft	is:
10.	to the:				g power is directly proportional
	(3) Square of t	t of the diameter he diameter		Diameter Cube of t	r the diameter
11.	(2) Increasing(3) Decreasing	increased by: welding current and welding current and welding current ar welding current ar welding current ar	d decreas nd weldin	ng weldir g speed	mu, y
12.	For resistance s	spot welding of 1.5	mm thick	steel shee	ets, the current required is of the
	(1) 10 Amp(3) 1000 Amp			100 Amp	
13.	Which of the fo (1) GMAW (3) SAW	ollowing arc weldin	(2)	es does no GTAW None	ot use consumable electrodes :
14.	Welding proce (1) Gas weldin (3) Submerged	• 5	(2)	form of g D.C. arc Thermit	welding
15.		nal, the welding set	up is said	to have:	and the electrode holder to the
	(3) Both (1) an		(4)	None of	these

16	The cost commonly used criteria for measuring forecast error is:
10.	(1) Mean absolute deviation (2) Mean absolute percentage error
	(3) Mean standard error (4) Mean square error
17.	In simple exponential smoothing forecasting, to give higher weightage to recent demand information, the smoothing constant must be close to:
	(1) -1 (2) Zero (3) 0.5 (4) 1.0
18.	Setup costs do not include:
	(1) Labor cost of setting up machines (2) Ordering cost of raw material
	(3) Maintenance cost of the machines (4) Cost of processing the work piece
19.	In the construction of networks, dummy activities are introduced in order to:
	(1) Compute the slack on all events
	(2) Transfer resources, if necessary, during monitoring
	(3) Clearly designate a precedence relationship
	(4) Simplify the crashing plan
20	In PERT analysis a critical activity has:
20.	(1) Maximum Float (2) Zero Float
	(3) Maximum Cost (4) Minimum Cost
21.	The purpose of gate is to:
1/4	(1) Feed the casting at a rate constant with rate of solidification
	(2) Act as reservoir for molten metal
	(3) Help to feed the casting until all solidification takes place
	(4) Feed molten metal from pouring basin to gate
22	The purpose of riser is to:
22.	(1) Feed the casting at a rate constant with rate of solidification
•	(2) Act as reservoir for molten metal
	(3) Help to feed the casting until all solidification takes place
	(4) Feed molten metal from pouring basin to gate
	(4) Teed money metal from pouring such to gate
23.	The purpose of chaplets is to:
	(1) Provide benting (2) Induce directional solidification
	(3) Compensate shrinkage (4) Support the core
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24.	Fluidity is greatly influenced by:
	(1) Melting temperature (2) Tapping temperature
	(3) Pouring temperature (4) Solidification temperature
25.	
-,	Sweep pattern is used for moulding parts having: (1) Rectangular shape (2) Elliptical shape
	(3) Circular change
^	(4) Complicated shape
26.	Process of increasing the cross-section of a bar and reducing its length is called:
	(1) Spinning (2) Upsetting (3) Drawing (4) Reaming
27.	Cold working of metal increases:
	(1) Tensile strongth
	(3) Yielding street 1
28	, (1) Thi of these
20.	Hot forging of steel is done at a temperature of: (1) 400°C (2) 600°C (3) 10000C
	(3) 1000°C (4) 1300°C
29.	de de la lor de
	(1) Fluidity (2) Work hardening
	(3) Plasticity (4) Shearing
30.	Mass production of gears is done by:
	(1) Turning (2) Hobbing (2) Cl
31.	A closed system is one, which:
	(1) Permits the passage of an annual 1
	(1) Permits the passage of energy and matter across the boundaries(2) Does not permit the passage of energy and matter across the boundaries
121	(2) Does not permit the passage of energy and matter across the boundaries (3) Permits the passage of energy across the land of the land
17.	(3) Permits the passage of energy across the boundary but does not permit the passage the matter
	(4) Permits the passage of matter across the boundary but does not permit the
•	passage of energy passage of energy but does not permit the
32.	With rise of temperature, the specific heat of water:
1	(1) Increases
	(2) Decreases
	(3) First decreases to minimum then increases
	(4) Remains constant
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33.	In an isothermal process, internal energy:
	(1) Increases (2) Remains constant
	(3) Decreases (4) None of the above
34.	In a reversible polytropic process:
	(1) Enthalpy remains constant (2) Entropy remains constant
	(3) Some heat transfer occurs (4) Internal energy remains constant
35.	Isentropic flow is:
	(1) Reversible adiabatic flow (2) Irreversible adiabatic flow
	(3) Frictionless fluid flow (4) None of the above
36.	In a reversible isothermal process undergone by an ideal gas:
	(1) Heat transfer is zero (2) Change in internal energy is zero
	(3) Work transfer is zero (4) Heat transfer is equal to work transfer
37.	In Carnot cycle, heat is rejected at constant:
	(1) Volume (2) Pressure (3) Temperature (4) Entropy
38.	A gas, which obeys kinetic theory perfectly is:
	(1) Pure gas (2) Real gas (3) Perfect gas (4) All of these
39.	The absolute zero pressure can be obtained at a temperature of :
	(1) 0°C (2) 273°C (3) +273°K (4) None of these
40.	In one ton refrigeration machine, the term "one ton" implies:
	(1) One ton refrigerant is used
-	(2) One ton water can be converted into ice
	(3) One ton ice when melts from and at 0°C in 24 hours, the refrigerating effects is equivalent to 3000 kcal/hour
	(4) None of these
41.	The dimension of surface tension is:
	(1) ML^{-1} (2) L^2T^{-1} (3) $ML^{-1}T^{-1}$ (4) MT^{-2}
42.	A streamlined body is defined as a body about which:
	(1) The flow is laminar (2) The flow is along the streamlines
	(3) The flow separation is suppressed (4) The drag is zero
M.Phil	/Ph.D./URS-EE-Nov2018/(Mech. Engg.)(SET-Z)/(B)

43.	A streamline and equi-potential lines in a flow field:
	(1) Are parallel to each other (2) Are perpendicular to each other
~	(3) Intersect at an acute angle (4) Are identical
44.	Cavitation in a hydraulic reaction turbine is most likely to occur at the turbine:
	(1) Entry (2) Exit (3) Stator exit (4) Rotor exit
45.	A flow in which each liquid particle has a definite path and their paths do not cross each other, is called:
	(1) Steady flow (2) Uniform flow
	(3) Streamline flow (4) Turbulent flow
46.	In steady flow of a fluid, the acceleration of any fluid particle is:
	(1) Constant (2) Variable
	(3) Zero (4) Never zero
47.	Bernoulli's equation cannot be applied when the flow is:
	(1) Rotational (2) Turbulent
	(3) Unsteady (4) All of these
48.	A large Reynold's number is indication of:
	(1) Smooth and laminar flow (2) Laminar flow
	(3) Steady flow (4) Highly turbulent flow
49.	Pitot tube is used to measure the velocity head of:
	(1) Still fluid (2) Laminar flow
	(3) Turbulent flow (4) Flowing fluid
50.	Head loss in case of hot water flow through a pipe compared to cold water flow will be:
	(1) Sama
	(4) unpredictable
51.	The fatigue life of a part can be improved by:
	(1) Electroplating (2) Polishing
	(3) Coating (4) Shot peening
52.	Buttress thread is used where power is to be transmitted in:
•	(1) One direction only (2) Two directions
	(3) Both the directions (4) None of the above
Phil	JPh.D./URS-EE-Nov2018/(Mech. Enga.)(SFT-7)(P)

53.	For the analysis of older plate clutches, the following theory is applicable:
,	(1) Uniform Pressure Theory (2) Uniform Wear Theory
	(3) Uniform Shear Theory (4) None of the above
54.	The ratio of the maximum displacement of the forced vibration to the deflection due to the static force, is known as:
	(1) Damping factor (2) Logarithmic decrement
	(3) Damping coefficient (4) Magnification factor
55.	Which one of the following is the criterion in the design of hydrodynamic journal bearings?
	(1) Sommerfield numbers (2) Rating life
	(3) Specific dynamic capacity (4) Rotation factor
56.	Tooth interference in an external involute spur gear pair can be reduced by:
	(1) Decreasing center distance between gear pair
	(2) Decreasing module
	(3) Decreasing pressure angle
	(4) Increasing number of gear teeth
57.	In spur gears, the circle on which the involute is generated is called the: (1) Pitch circle (2) Clearance angle (3) Base circle (4) Addendum circle
58.	A static fluid can have:
	(1) Non-zero normal and shear stress
	(2) Negative normal stress and zero shear stress
	(3) Positive normal stress and zero shear stress
	(4) Zero normal stress and non-zero shear stress
59.	For the stability of a floating body, under the influence of gravity alone, which of the following is true?
•	(1) Metacenter should be below centre of gravity
	(2) Metacenter should be above centre of gravity
	(3) Metacenter and centre of gravity must lie on the same horizontal line
	(4) Metacenter and centre of gravity must lie on the same vertical line
Phil	/Ph.D./URS-EE-Nov2018/(Mech. Engg.)(SET-Z)/(B)

60.	A fluid is one which can be defined as a substance that:						
	(1) Has same shear stress at all points						
•) Can deform indefinitely under the action of the smallest shear force						
	(3) Has the small shear stress in all direction						
	(4) Is practically incompressible						
i i	From a metallic wall at 100°C, a metallic rod protrudes to the ambient air. The temperature at the tip will be minimum when the rod is made of: (1) Aluminium (2) Steel (3) Copper (4) Silver						
62.	What happens when the thickness of insulation on a pipe exceeds the critical value?						
	(1) Heat transfer rate increases						
	(2) Heat transfer rate decreases						
	(3) Heat transfer rate remains constant(4) None of these						
63.	The process of heat transfer from one particle of the body to another without the actual motion of the particle, is known as: (1) Conduction (2) Convection (3) Radiation (4) All of these						
64	Basic law of heat conduction is:						
	(1) Fourier's law (2) Newton's law						
	(3) Stefan's law (4) First law of thermodynamics						
65	. Metals are good heat conductors because :						
	(1) of free electrons present (2) their atoms are relatively far apart						
	(3) 'their atoms collide frequently (4) all of these						
6							
	(1) 10^{-4} meters (2) 10^{-6} meters (3) 10^{-8} meters (4) 10^{-12} meters						
6	7. Heat conduction does not occur:						
	(1) if a physical body is impermeable to any kind of rays						
	(2) if the parts of a body are not in motion relative to one another						
	(3) if the bodies are kept in vacuum						
	(4) if the temperature of the two bodies are identical						
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68.	68. For steady flow and constant value of conductive plane wall is:	vity, the temperature distribution for a
	(1) Parabolic (2) Linear (3) Log	garithmic (4) Cubic
69.	69. The thermal conductivity in S.I. units is expresse	ed as:
		$m ext{ K sec}$ (4) W/m^2
70.	70. Fin efficiency deals with :	s green from a subspiritures in the
		nomical material requirement
	(3) Cost of manufacturing (4) All	of these
71.	71. The temperature at which, the volume of a gas b	ecomes zero, is called :
		solute zero temperature
	(3) Absolute scale of temperature (4) Nor	ne of these
72.	72. Triple point :	
	(1) Occurs in a mixture of two or more gases	วาก แต่ เป็นด้วย
	(2) Is a point, where three phases exists together	mings all the second
	(3) Occurs in sublimation	
	(4) None of the above	
73.	3. The property of a working substance, which incheat supplied or removed in a reversible manner	
	(1) Enthalpy (2) Entropy (3) Rev	ersibility (4) None of these
4.	4. For a pure substance at its triple point, the number	er of degrees of freedom is:
	(1) 0 (2) 1 (3) 2	(4) None of these
'5.	5. Process of making hollow castings of desired this the use of cores, is called:	ckness by permanent mould without
	(1) Permanent mould casting (2) Die	casting
	(3) Slush casting (4) Cent	trifugal casting
6.	6. Investment casting uses pattern made of:	
	(1) wax (2) clay (3) meta	al (4) wood
7.	7. The addition of coal dust to the green moulding s	sand is to improve:
	그 하는 사람들이 함께 하고 있었다. 중요 그는 사람들이 되었다는 사람들이 살아 있다면 하는데 하는데 그렇게 하는데 하는데 함께 되어졌다.	ace finish
		en strength
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78.	The purpose of adding wood flour or saw dust to foundry sand is to improve:
	(1) Mouldability (2) Dry strength
	(3) Hot strength (4) Collapsibility
79.	Draft on pattern for casting is:
	(1) Shrinkage allowance
	(2) Identification number marked on it
	(3) Taper to facilitate its removal from mould
	(4) For machining allowance
80.	Cores are used to:
	(1) Make desired recess in castings (2) Strengthen moulding sand
* .	(3) Support loose pieces (4) Remove pattern easily
81.	A single degree of freedom system having mass 1 kg and stiffness 10 kN/m initially at rest is subjected to an impulse force of magnitude 5 kN for 10^{-4} seconds. The amplitude in mm of the resulting free vibration is :
	(1) 0.5 (2) 1.0 (3) 5.0 (4) 10.0
82	 A circular solid disc of uniform thickness 20 mm, radius 200 mm and mass 20 kg, is used as a flywheel. If it rotates at 600 rpm, the kinetic energy of the flywheel, in Joules is: (1) 395 (2) 790 (3) 1580 (4) 3160
83	If two forces each equal to P in magnitude act at right angles, their effect may be neutralized by a third force acting along their bisector in opposite direction whose magnitude is equal to:
	(1) 2P (2) P/2 (3) $\sqrt{2}$ P (4) P/ $\sqrt{2}$
84	A simple pendulum of length of 5 m, with a bob of mass 1 kg, is in simple harmonic motion. As it passes through its mean position, the bob has a speed of 5m/s. The ne force on the bob at the mean position is:
	(1) Zero (2) 2.5 N (3) 5 N (4) 25 N
85	block of wood. The average force exerted by the wood on bullet will be:
9	(1) 10 kN (2) 20 kN (3) 30 kN (4) 40 kN
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86.	. Ratio of moment of inertia of a circular body	about its x-axis to that about y-axis is:
	(1) 0 5	1.5 (4) 2.0
87.	. The members of the truss structure are subje	octed to
	(1) D 1: 0	Normal Stress
	(0) (1) (2)	Nominal Stress
•		
88.	3. The bodies which rebound after impact are of	called:
	(1) Inelastic bodies (2)	Elastic bodies
	· (3) Imaginary bodies (4)	All of the above
89.	If the end portion of a beam is extended beyon	and the supports, such a beam is called
,		Fixed Beam
		Clamped Beam
90.	A cylindrical elastic body subjected to pure to	torsion about its axis develops :
	(1) tensile stress in a direction 45° to the axis	
	(2) no tensile or compressive stress	CASCAL CALL TO CASCAL
	(3) maximum shear stress along the axis of	the shaft /
	(4) maximum shear stress at 45° to the axis	and places, the same of the Sport was
91.	. Blanking and piercing operations can be per	formed simultaneously in:
		Progressive die
		Combination die
92.	The cutting edge of the tool is perpendicular	to the direction of tool travel in:
	(1) Orthogonal cutting (2)	Oblique cutting
	(3) Both (1) and (2) (4)	None of these
93.	In metal cutting operation discontinuous chi	ps are produced while machining:
	(1) Brittle material (2)	Ductile material
·	(3) Hard material (4)	Soft material
94.	. Material having highest cutting speed is:	
	(1) Cast iron (2)	Bronze
		High carbon steel
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95.	Negative rake angles are provided to:
•	(1) Give better finish
	(2) Increase strength of cutting tool point
	(3) Decrease temperature rise at tool tip
	(4) All of these
96.	To prevent tool from rubbing the work piece, angle provided on tool is:
	(1) Lip angle (2) Rake angle
	(3) Clearance angle (4) Relief angle
97.	(1) There will be a state of the state of th
	Velocity of tool relative to work piece is called: (1) Cutting velocity (2) Chip velocity
	(3) Short value its
	(1) Tivelage velocity
98.	The same is the fallo of :
. 7 .	(1) Cutting velocity to chip velocity (2) Depth of cut to chip thickness
	(3) Chip thickness to depth of cut (4) None of these
99.	Tool life is said to be over if:
	(1) Poor surface finish is obtained
	(2) Sudden increase in power and cutting force with chattering to be
	, (c) o reflecting and running due to friction start
	(4) All of these
100.	Flank wear occurs mainly on:
	(1) Nose part, front relief face and side relief face.
	(2) Nose part and top face
	(3) Cutting edges
	(4) All of these
	그 그렇게 보고 하는 사람들이 되었다. 이번 어린 생각이 바람들이 어떻게 되었다. 그는 사람들이 나를 보고 하는 것이 없다는 것이 없다.

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SET-Z

SUBJECT: Mechanical Engineering

		Sr. No
Time : 1¼ Hours Roll No. (in figures)	Max. Marks : 100 (in words)	Total Questions : 100
Name	Father's Name	
Mother's Name	Date of Examination	<u> Prima y sa</u>
(Signature of the Candidate)	(:	Signature of the Invigilator)

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M.Phil./Ph.D./URS-EE-Nov.-2018/(Mech. Engg.)(SET-Z)/(C)

1.	From a metallic wall at 100°C, a metallic rod protrudes to the ambient air. The temperature at the tip will be minimum when the rod is made of:
	(1) Aluminium (2) Steel (3) Copper (4) Silver
2.	What happens when the thickness of insulation on a pipe exceeds the critical value? (1) Heat transfer rate increases (2) Heat transfer rate decreases (3) Heat transfer rate remains constant (4) None of these
3.	The process of heat transfer from one particle of the body to another without the actual motion of the particle, is known as:
	(1) Conduction (2) Convection
	(3) Radiation (4) All of these
4.	Basic law of heat conduction is:
	(1) Fourier's law (2) Newton's law
	(3) Stefan's law (4) First law of thermodynamics
5.	Metals are good heat conductors because: (1) of free electrons present (2) their atoms are relatively far apart (3) their atoms collide frequently (4) all of these
6.	1 micron is equal to:
	(1) 10^{-4} meters (2) 10^{-6} meters (3) 10^{-8} meters (4) 10^{-12} meters
7.	Heat conduction does not occur: (1) if a physical body is impermeable to any kind of rays (2) if the parts of a body are not in motion relative to one another (3) if the bodies are kept in vacuum (4) if the temperature of the two bodies are identical
8.	For steady flow and constant value of conductivity, the temperature distribution for a plane wall is:
No.	(1) Parabolic (2) Linear (3) Logarithmic (4) Cubic
9.	The thermal conductivity in S.I. units is expressed as:
	(1) J/m^2K (2) W/mK (3) $W/m K sec$ (4) W/m^2
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10.	Fin efficiency deals with:	- Los torial requirement
	(1) Thermal performance	(2) Economical material requirement
	(3) Cost of manufacturing	(4) All of these
11.	The fatigue life of a part can be improve	d by:
	(1) Electroplating	(2) Polishing
	(3) Coating	(4) Shot peening
12.	Buttress thread is used where power is	to be transmitted in:
	(1) One direction only	(2) Two directions
	(3) Both the directions	(4) None of the above
13.	. For the analysis of older plate clutches,	the following theory is applicable :
	(1) Uniform Pressure Theory	(2) Uniform Wear Theory
	(3) Uniform Shear Theory	(4) None of the above
14.	• The ratio of the maximum displacement to the static force, is known as:	nt of the forced vibration to the deflection du
	(1) Damping factor	(2) Logarithmic decrement
	(3) Damping coefficient	(4) Magnification factor
15.	Which one of the following is the cribearings?	terion in the design of hydrodynamic journ
	(1) Sommerfield numbers	(2) Rating life
	(3) Specific dynamic capacity	(4) Rotation factor
16.	. Tooth interference in an external invol	ute spur gear pair can be reduced by :
	(1) Decreasing center distance between	[Ref.] - Sec. [17] [18] [18] 175 - [1] [18] [17] [18] [17] - Sec. [18] Sec. [18] [18] [18] [18] [18] [18]
	(2) Decreasing module	a de la companya de l
4: 5	(3) Decreasing pressure angle	
	(4) Increasing number of gear teeth	
17.	In spur gears, the circle on which the i	nvolute is generated is called the :
n r	(1) Pitch circle	(2) Clearance angle
	(3) Base circle	(4) Addendum circle
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18.	A static fluid can have:
	(1) Non-zero normal and shear stress
-	(2) Negative normal stress and zero shear stress
	(3) Positive normal stress and zero shear stress
	(4) Zero normal stress and non-zero shear stress
19.	For the stability of a floating body, under the influence of gravity alone, which of the following is true?
	(1) Metacenter should be below centre of gravity
	(2) Metacenter should be above centre of gravity
	(3) Metacenter and centre of gravity must lie on the same horizontal line
	(4) Metacenter and centre of gravity must lie on the same vertical line
20.	A fluid is one which can be defined as a substance that:
	(1) Has same shear stress at all points
- ;	(2) Can deform indefinitely under the action of the smallest shear force
٠.	(3) Has the small shear stress in all direction
	(4) Is practically incompressible
21.	A single degree of freedom system having mass 1 kg and stiffness 10 kN/m initially at rest is subjected to an impulse force of magnitude 5 kN , for 10^{-4} seconds. The amplitude in mm of the resulting free vibration is: (1) 0.5 (2) 1.0 (3) 5.0 (4) 10.0
22.	A circular solid disc of uniform thickness 20 mm, radius 200 mm and mass 20 kg, is used as a flywheel. If it rotates at 600 rpm, the kinetic energy of the flywheel, in Joules is:
	(1) 395 (2) 790 (3) 1580 (4) 3160
23.	If two forces each equal to P in magnitude act at right angles, their effect may be neutralized by a third force acting along their bisector in opposite direction whose magnitude is equal to: (1) $2P$ (2) $P/2$ (3) $\sqrt{2P}$ (4) $P/\sqrt{2}$
	(1) $2P$ (2) $P/2$ (3) $\sqrt{2}P$ (4) $P/\sqrt{2}$
24.	A simple pendulum of length of 5 m, with a bob of mass 1 kg, is in simple harmonic motion. As it passes through its mean position, the bob has a speed of 5m/s. The net force on the bob at the mean position is:
•	(1) Zero (2) 2.5 N (3) 5 N (4) 25 N
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33.	(1) GMAW (2) GTAW
	(3) SAW (4) None
34.	Welding process in which flux is used in the form of granules is: (1) Gas welding (2) D.C. arc welding (3) Submerged arc welding (4) Thermit welding
35.	When the work is connected to the negative terminal and the electrode holder to the positive terminal, the welding set up is said to have: (1) Straight polarity (2) Reversed polarity (3) Both (1) and (2) (4) None of these
36.	The cost commonly used criteria for measuring forecast error is: (1) Mean absolute deviation (2) Mean absolute percentage error (3) Mean standard error (4) Mean square error
37.	In simple exponential smoothing forecasting, to give higher weightage to recent demand information, the smoothing constant must be close to: (1) -1 (2) Zero (3) 0.5 (4) 1.0
38.	Setup costs do not include: (1) Labor cost of setting up machines (2) Ordering cost of raw material (3) Maintenance cost of the machines (4) Cost of processing the work piece
⁻ 39.	In the construction of networks, dummy activities are introduced in order to: (1) Compute the slack on all events (2) Transfer resources, if necessary, during monitoring (3) Clearly designate a precedence relationship (4) Simplify the crashing plan
40.	In PERT analysis a critical activity has: (1) Maximum Float (2) Zero Float (3) Maximum Cost (4) Minimum Cost
41.	The temperature at which, the volume of a gas becomes zero, is called: (1) Absolute temperature (2) Absolute zero temperature (3) Absolute scale of temperature (4) None of these
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42.	Triple point:			
	(1) Occurs in a mixture of two or more gases			
	(2) Is a point, where three phases exists together			
	(3) Occurs in sublimation			
	(4) None of the above			
43.	The property of a working substance, which increases or decreases according to the heat supplied or removed in a reversible manner is called:			
	(1) Enthalpy (2) Entropy (3) Reversibility (4) None of these			
44.	For a pure substance at its triple point, the number of degrees of freedom is:			
	(1) 0 (2) 1 (3) 2 (4) None of these			
45.	Process of making hollow castings of desired thickness by permanent mould without the use of cores, is called:			
*	(1) Permanent mould casting (2) Die casting			
	(3) Slush casting (4) Centrifugal casting			
46.	Investment casting uses pattern made of:			
	(1) wax (2) clay (3) metal (4) wood			
47.	The addition of coal dust to the green moulding sand is to improve:			
	(1) Permeability (2) Surface finish			
. 8	(3) Mouldability (4) Green strength			
48.	The purpose of adding wood flour or saw dust to foundry sand is to improve:			
	(1) Mouldability (2) Dry strength			
	(3) Hot strength (4) Collapsibility			
49.	Draft on pattern for casting is:			
	(1) Shrinkage allowance			
	(2) Identification number marked on it			
	(3) Taper to facilitate its removal from mould			
	(4) For machining allowance			
	Cores are used to:			
50.	요(요			
	(1) Make desired recess in castings (2) Strengthen moulding sand (3) Support loose pieces (4) Remove pattern easily			
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51.	The dimension of surface tension is:		and the second s
	(1) ML^{-1} (2) L^2T^{-1}	(3)	$ML^{-1}T^{-1}$ (4) MT^{-2}
,52.	A streamlined body is defined as a body	y abo	out which:
3	(1) The flow is laminar		The flow is along the streamlines
	(3) The flow separation is suppressed	(4)	The drag is zero
53.	A streamline and equi-potential lines in	a flo	ow field:
	(1) Are parallel to each other		Are perpendicular to each other
	(3) Intersect at an acute angle		Are identical
54.	Cavitation in a hydraulic reaction turbing	ne is	most likely to occur at the turbine
	(1) Entry (2) Exit		Stator exit (4) Rotor exit
55.	A flow in which each liquid particle has each other, is called:	ıs a	definite path and their paths do not cross
	(1) Steady flow	(2)	Uniform flow
	(3) Streamline flow	(4)	Turbulent flow
56.	In steady flow of a fluid, the acceleration	n of	any fluid particle is
	(1) Constant		Variable
	(3) Zero		Never zero
57.	Bernoulli's equation cannot be applied v	vher	the flow is
	(1) Rotational	(2)	Turbulent
	(3) Unsteady		All of these
58.	A large Reynold's number is indication		Through the second of the seco
	(1) Smooth and laminar flow		Township to be a second use a second
			Laminar flow
	(3) Steady flow		Highly turbulent flow
59.]	Pitot tube is used to measure the velocit	y he	ad of:
(1) Still fluid	(2)	Laminar flow
(3) Turbulent flow		Flowing fluid
60. H	Head loss in case of hot water flow throe:		a pipe compared to cold water flow will
(1	l) Same (2) More	(3)	Less (4) unpredictable
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61.	The purpose of gate is to:	•	and the second of the property of
	(1) Feed the casting at a rate constant	with	
	(2) Act as reservoir for molten metal		
	(3) Help to feed the casting until all so	lidifi	ication takes place
	(4) Feed molten metal from pouring b	asin 1	to gate
62.			TO COMPANY THE PROPERTY OF THE TANK
	(1) Feed the casting at a rate constant	anie.	both adjusts of a support
	(2) Act as reservoir for molten metal	witii .	rate of solidification
	(3) Help to feed the casting until all so	lidifi	ication takes place
	(4) Feed molten metal from pouring be	asin t	to gate we do not be added to the second
63.			. The Deck throws
	(1) Provide benting	(2)	Induce directional solidification
	(3) Compensate shrinkage	(4)	Support the core
64.	Fluidity is greatly influenced by:		ervier in vital topical by a
	(1) Melting temperature	(2)	Tapping temperature
	(3) Pouring temperature	(4)	
65.	Sweep pattern is used for moulding pa	rto b	evine.
	(1) Reclangular shape		Elliptical shape
	(3) Circular shape	(4)	Complicated shape
66.	Process of increasing the cross-section (1) Spinning (2) Unsetting	of a 1-	pricated shape
	(1) Spinning (2) Upsetting	or a p	par and reducing its length is called:
67.	Cold working of metal increases:	(3)	Drawing (4) Reaming
	(1) Tensile strength		and a second
	(3) Yielding strength		Hardness
60		(4)	All of these
68.	Hot forging of steel is done at a temper	ature	e of:
	(1) 400°C (2) 600°C		10000
69.	In drawing operation the metal flows d	ا مرا	(4) 1300°C
11.55 V.	(1) Fluidity		The second of th
	(3) Plasticity		Work hardening
	/Ph.D./URS-EE-Nov2018/(Mech. Engl	(4)	Shearing
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70.	Mass production of gears is done by:		La de la companya de
	(1) Turning (2) Hobbing	(3)	Shaping (4) Forming
71.	Blanking and piercing operations can be	e per	formed simultaneously in:
	(1) Simple die	1 4	Progressive die
. *	(3) Compound die		Combination die
72.	The cutting edge of the tool is perpendi	cula	r to the direction of tool travel in:
	(1) Orthogonal cutting		Oblique cutting
	(3) Both (1) and (2)	(4)	None of these
73.	In metal cutting operation discontinuou	ıs ch	ips are produced while machining:
	(1) Brittle material		Ductile material
	(3) Hard material	(4)	Soft material
74.	Material having highest cutting speed i	s:	
	(1) Cast iron	(2)	Bronze
	(3) Aluminium	(4)	High carbon steel
75.	Negative rake angles are provided to:		
	(1) Give better finish		
	(2) Increase strength of cutting tool po		
	(3) Decrease temperature rise at tool ti(4) All of these	р	
76	16.7.00	nica	o anala muovidad on taal is
76.		•	
	(1) Lip angle		Rake angle Relief angle
•	(3) Clearance angle		
77.	Velocity of tool relative to work piece is	3.13	
	(1) Cutting velocity	(2)	
	(3) Shear velocity	(4)	Average velocity
78.	Chip thickness ratio is the ratio of:		
	(1) Cutting velocity to chip velocity		Depth of cut to chip thickness
	(3) Chip thickness to depth of cut	(4)	None of these
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79	. Tool life is said to be over if:
	(1) Poor surface finish is obtained
	(2) Sudden increase in power and cutting force with chattering takes place
	(3) Overheating and fuming due to friction start
	(4) All of these
80.	Flank wear occurs mainly on :
	(1) Nose part, front relief face and side relief face
	(2) Nose part and top face
	(3) Cutting edges
	(4) All of these
81.	A rod of length L and diameter D is subjected to a tensile load P. Which of the following is sufficient to calculate the resulting change in diameter?
	(1) Young's modulus
	(2) Shear modulus
	(3) Poisson's ratio
	(4) Both Young's modulus and Shear modulus
82.	When two mutually perpendicular principal stresses are unequal but alike, the maximum shear stress is represented by :
	(1) the diameter of Mohr's circle
	(2) half the diameter of the Mohr's circle
	(3) there is no longitudinal strain in the material
	(4) none of these
83.	If the value of Poisson's ratio is zero, then it means that:
	(1) the material is rigid
	(2) the material is perfectly plastic
,	(3) there is no longitudinal strain in the material
	(4) none of these
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A long thin walled cylindrical shell, closed at both ends, is subjected to an internal. pressure. The ratio of hoop stress (circumferential stress) to longitudinal stress developed in the shell is:

(2) 1.0 (1) 0.5

(3) 2.0

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85.	For a simply supported beam on two end supports, the bending moment is maximum:
	(1) Usually on the supports (2) Always at mid span
	(3) Where there is no shear force (4) Where the deflection is maximum
86.	A simply supported beam of length 3 carries a concentrated load of 12 kN at a distance of 1 m from left support. The maximum bending moment in the beam is: (1) 12 kNm (2) 24 kNm (3) 8 kNm (4) 16 kNm
87.	A steel rod of length L and diameter D, fixed at both ends, is uniformly heated to a temperature rise of ΔT . Young's modulus is E and coefficient of linear expansion is α . The thermal stress in the rod is : (1) 0 (2) $\alpha \Delta T$ (3) $E\alpha \Delta T$ (4) $E\alpha \Delta T L$
88.	A free bar of length L is uniformly heated from 0°C to a temperature t°C, α is the coefficient of linear expansion and E the modulus of elasticity. The stress in the bar is :
	(1) αtE (2) $\alpha tE/2$ (3) zero. (4) none of these
89.	The factor which affects the critical speed of the shaft is:
	(1) Diameter of the mounted disc (2) Eccentricity on the shaft
	(3) Span of the shaft (4) All of the above
90.	 Torque to weight ratio for a circular shaft transmitting power is directly proportional to the: (1) Square root of the diameter (2) Diameter (3) Square of the diameter (4) Cube of the diameter
91.	A closed system is one, which:
	(1) Permits the passage of energy and matter across the boundaries
	(2) Does not permit the passage of energy and matter across the boundaries
	(3) Permits the passage of energy across the boundary but does not permit the passage the matter
	(4) Permits the passage of matter across the boundary but does not permit the passage of energy
92.	With rise of temperature, the specific heat of water:
	(1) Increases
	(2) Decreases
	(3) First decreases to minimum then increases
8.6	(4) Remains constant
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93.	In an isothermal process, internal energy:	
	(1) Increases (2) Re	emains constant
	(3) Decreases (4) No	one of the above
		7 on V A 88
94.	In a reversible polytropic process:	delication to the second
	(1) Enthalpy remains constant (2) Er	stropy remains constant
	(3) Some heat transfer occurs (4) In	ternal energy remains constant
95.		11. Jaka flow
		eversible adiabatic flow
	(3) Frictionless fluid flow (4) No.	one of the above
96.	In a reversible isothermal process undergone by	v an ideal gas :
		nange in internal energy is zero
		eat transfer is equal to work transfer
	(4) 116	eat transfer is equal to work transfer
97.	In Carnot cycle, heat is rejected at constant:	The second of th
	(1) Volume (2) Pressure (3) Te	mperature (4) Entropy
98.	A gas, which obeys kinetic theory perfectly is:	The State of the S
	(1) Pure gas (2) Real gas (3) Pe	rfect gas (4) All of these
99.	The absolute zero pressure can be obtained at a	temperature of :
	(1) 0°C (2) 273°C (3) +2	
100.	In one ton refrigeration machine, the term "one	ton" implies
	(1) One ton refrigerant is used	in the second se
	(2) One ton water can be converted into ice	일반에 그 5시 스타이 것이 얼마를 걸었다.
	(3) One ton ice when melts from and at 0°C i equivalent to 3000 kcal/hour	n 24 hours, the refrigerating effects is
	(4) None of these	to the contract to the contract of
		to the second second second

Total No. of Printed Pages: 13

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M.Phil./Ph.D./URS-EE-Nov.-2018

SET-Z

SUBJECT: Mechanical Engineering

		100068 Sr. No.
Time : 1¼ Hours Roll No. (in figures)	Max. Marks : 100 (in words)	Total Questions : 100
Name	Father's Name	
Mother's Name	Date of Examination.	
(Signature of the Candidate)		(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

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- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
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	In	e purpose of gate is to:		
	(1)	Feed the casting at a rate constant w	ith	rate of solidification
	(2)	Act as reservoir for molten metal		
	(3)	Help to feed the casting until all sol	difi	cation takes place
		Feed molten metal from pouring ba		
2.	The	e purpose of riser is to :		
		Feed the casting at a rate constant w	ith	rate of solidification
	(2)			and the state of
		Help to feed the casting until all soli		
	(4)	Feed molten metal from pouring ba	sin t	o gate
3.	The	e purpose of chaplets is to:		
	(1)	Provide benting .	(2)	Induce directional solidification
	(3)	Compensate shrinkage	(4)	Support the core
4.	Flu	idity is greatly influenced by:		
		Melting temperature	(2)	Tapping temperature
	(3)	Pouring temperature	(4)	Solidification temperature
5.	Sw	eep pattern is used for moulding par	s ha	aving:
	•	Rectangular shape		Elliptical shape
	(3)	Circular shape	(4)	Complicated shape
6.	Pro	ocess of increasing the cross-section of	a b	ar and reducing its length is called:
	(1)	Spinning (2) Upsetting	(3)	Drawing (4) Reaming
7.	Col	ld working of metal increases:	. `	
	(1)	Tensile strength	(2)	Hardness
	(3)	Yielding strength	(4)	All of these
8.	Но	t forging of steel is done at a tempera	ture	of:
, .	(1)	400°C (2) 600°C	(3)	1000°C (4) 1300°C
9.	In c	drawing operation the metal flows du	e to	
-4	(1)	Fluidity	(2)	Work hardening
	(3)	Plasticity	(4)	Shearing
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19.	The abs	solute zero p	ressure c	an be obt	ained	at a temper	ature of :	
	(1) 0°C		(2) 273°			+273°K	(4) None of these	e
20.	(1) On (2) On (3) On equ	ton refrigerate ton refrigerate ton water of the ton ice who wivalent to 30 one of these	rant is us can be con en melts	ed nverted in from an	nto ice		plies: urs, the refrigerating e	ffects is
21	The dir	mension of s	irface ter	eion is :				
	(1) MI		(2) L ² T		(3)	ML ⁻¹ T ⁻¹	(4) MT ⁻²	
22.	(1) Th (3) Th	amlined body e flow is lam e flow separa	inar ation is s	uppressec	(2) 1 (4)	The flow is The drag i	s along the streamlines s zero	
23.	(1) Ar	amline and ed e parallel to tersect at an a	each othe	er	(2)		ndicular to each other	
24.	Cavita (1) En		raulic rea (2) Exi			most likely Stator exit	to occur at the turbine (4) Rotor exit	:
25.	each o	v in which ea ther, is callec eady flow reamline flov	l:	l particle	(2)	definite pat Uniform f Turbulent		ot cross
26.	(1) Co (3) Ze		o Care de la Social de la Care de	enda <mark>d</mark> pa	(2) (4)	Variable Never zero	0	
27.		ulli's equation otational	(2) Tu			Unsteady		
	(1) Sn (3) St	e Reynold's r nooth and lar eady flow	minar flo	W	(2) (4)	Highly tu	low rbulent flow	
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29.	Pitot tube is used to measure the velocity head of:
	(1) Still fluid (2) Laminar flow
	(3) Turbulent flow (4) Flowing fluid
30.	Head loss in case of hot water flow through a pipe compared to cold water flow will be: (1) Same (2) More (3) Less (4) unpredictable
31.	A rod of length L and diameter D is subjected to a tensile load P. Which of the following is sufficient to calculate the resulting change in diameter?
	(1) Young's modulus(2) Shear modulus(3) Poisson's ratio
32.	(4) Both Young's modulus and Shear modulus When two mutually perpendicular principal stresses are unequal but alike, the maximum shear stress is represented by:
	(1) the diameter of Mohr's circle(2) half the diameter of the Mohr's circle(3) there is no longitudinal strain in the material(4) none of these
33.	If the value of Poisson's ratio is zero, then it means that: (1) the material is rigid (2) the material is perfectly plastic (3) there is no longitudinal strain in the material (4) none of these
34.	A long thin walled cylindrical shell, closed at both ends, is subjected to an internal pressure. The ratio of hoop stress (circumferential stress) to longitudinal stress developed in the shell is: (1) 0.5 (2) 1.0 (3) 2.0 (4) 4.0
	For a simply supported beam on two end supports, the bending moment is maximum: (1) Usually on the supports (2) Always at mid span (3) Where there is no shear force (4) Where the deflection is maximum
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36.	A simply supported beam of length 3 carries a concentrated load of 12 kN at a distance of 1 m from left support. The maximum bending moment in the beam is: (1) 12 kNm (2) 24 kNm (3) 8 kNm (4) 16 kNm
37.	A steel rod of length L and diameter D, fixed at both ends, is uniformly heated to a temperature rise of ΔT . Young's modulus is E and coefficient of linear expansion is α . The thermal stress in the rod is : (1) 0 (2) $\alpha \Delta T$ (3) $E\alpha \Delta T$ (4) $E\alpha \Delta T L$
38.	A free bar of length L is uniformly heated from 0° C to a temperature t° C, α is the coefficient of linear expansion and E the modulus of elasticity. The stress in the bar is:
	(1) αtE (2) $\alpha tE/2$ (3) zero (4) none of these
39.	The factor which affects the critical speed of the shaft is:
	(1) Diameter of the mounted disc
	(2) Eccentricity on the shaft
	(3) Span of the shaft
	(4) All of the above
40.	Torque to weight ratio for a circular shaft transmitting power is directly proportional to the :
	(1) Square root of the diameter (2) Diameter
	(3) Square of the diameter (4) Cube of the diameter •
41.	Penetration is increased by:
	(1) Increasing welding current and welding speed
	(2) Increasing welding current and decreasing welding speed
	(3) Decreasing welding current and welding speed
	(4) Decreasing welding current and increasing welding speed
42.	For resistance spot welding of 1.5 mm thick steel sheets, the current required is of the order:
	(1) 10 Amp (2) 100 Amp
	(3) 1000 Amp (4) 10,000 Amp
43.	Which of the following arc welding processes does not use consumable electrodes:
•	(1) GMAW (2) GTAW
	(3) SAW (4) None (4)
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44.	. Welding process in which flux is used in	n the form of granules is :
	(1) Gas welding	(2) D.C. arc welding
	(3) Submerged arc welding	(4) Thermit welding
45.	. When the work is connected to the nega	ative terminal and the electrode holder to the
	positive terminal, the welding set up is	said to have :
	(1) Straight polarity	(2) Reversed polarity
	(3) Both (1) and (2)	(4) None of these
46.	. The cost commonly used criteria for me	asuring forecast error is:
	(1) Mean absolute deviation	(2) Mean absolute percentage error
	(3) Mean standard error	(4) Mean square error
47.	 In simple exponential smoothing fore demand information, the smoothing cor 	ecasting, to give higher weightage to recent
	(1) -1 (2) Zero	(3) 0.5 (4) 1.0
48.	Setup costs do not include :	
	(1) Labor cost of setting up machines	(2) Ordering cost of raw material
	(3) Maintenance cost of the machines	(4) Cost of processing the work piece
49.	In the construction of networks dummy	
	In the construction of networks, dummy(1) Compute the slack on all events	activities are introduced in order to:
	(2) Transfer resources, if necessary, dur	ed benedictal electrication of the
	(3) Clearly designate a precedence relati	ing monitoring
	(4) Simplify the crashing plan	nonsnip
50.	and your a critical activity has:	
	(1) Maximum Float	(2) · Zero Float
	(3) Maximum Cost	(4) Minimum Cost
51.	The temperature at which, the volume of	f a gas boson
386	(1) Absolute temperature	(2) Absolute =
	(3) Absolute scale of temperature	(2) Absolute zero temperature(4) None of these
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	52.	Triple point:
- 1		(1) Occurs in a mixture of two or more gases
		(2) Is a point, where three phases exists together
		(3) Occurs in sublimation
		(4) None of the above
	53.	The property of a working substance, which increases or decreases according to the heat supplied or removed in a reversible manner is called:
		(1) Enthalpy (2) Entropy (3) Reversibility (4) None of these
	54.	For a pure substance at its triple point, the number of degrees of freedom is: (1) 0 (2) 1 (3) 2 (4) None of these
	55.	Process of making hollow castings of desired thickness by permanent mould without the use of cores, is called:
		(1) Permanent mould casting (2) Die casting (3) Slush casting (4) Centrifugal casting
٠,	56.	Investment casting uses pattern made of: (1) wax (2) clay (3) metal (4) wood
	57.	The addition of coal dust to the green moulding sand is to improve:
		(1) Permeability (2) Surface finish
		(3) Mouldability (4) Green strength
	58.	The purpose of adding wood flour or saw dust to foundry sand is to improve:
		(1) Mouldability (2) Dry strength
		(3) Hot strength (4) Collapsibility
	59.	Draft on pattern for casting is:
		(1) Shrinkage allowance
		(2) Identification number marked on it
		(4) For machining allowance
	60,	Cores are used to:
		(1) Make desired recess in castings (2) Strengthen moulding sand
		(3) Support loose pieces (4) Remove pattern easily
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(4) All of these

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	70.	Flank wear occurs mainly on:
		(1) Nose part, front relief face and side relief face
		(2) Nose part and top face
		(3) Cutting edges
		(4) All of these
	71.	From a matallian line topic
		From a metallic wall at 100°C, a metallic rod protrudes to the ambient air. The temperature at the tip will be minimum when the rod is made of:
		(1) Aluminium (2) Steel (3) Copper (4) Silver
	72.	What happens when the thickness of insulation on a pipe exceeds the critical value?
		(1) Heat transfer rate increases
	,	(2) Heat transfer rate decreases
		(3) Heat transfer rate remains constant
		(4) None of these
	73.	The process of heat transfer from one partials of the heavy to another without the
	73.	The process of heat transfer from one particle of the body to another without the actual motion of the particle, is known as:
		(1) Conduction (2) Convection
		(3) Radiation (4) All of these
	74	Pagin laws of heat ann dustion is t
	74.	Basic law of heat conduction is: (1) Fourier's law (2) Newton's law
		(3) Stefan's law (4) First law of thermodynamics
	75.	Metals are good heat conductors because:
		(1) of free electrons present (2) their atoms are relatively far apart
		(3) their atoms collide frequently (4) all of these
	76.	1 micron is equal to:
	x:-	(1) 10^{-4} meters (2) 10^{-6} meters (3) 10^{-8} meters (4) 10^{-12} meters
		 In the following setting and the state of th
	77.	Heat conduction does not occur:
		(1) if a physical body is impermeable to any kind of rays
		(2) if the parts of a body are not in motion relative to one another
		(3) if the bodies are kept in vacuum
	1	(4) if the temperature of the two bodies are identical
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	78.	For steady flow and constant value of co	ondi	activity, the temperature distribution for a
		plane wall is:		an O laig
		(1) Parabolic (2) Linear	(3)	Logarithmic (4) Cubic
	79.	The thermal conductivity in S.I. units is	expr	ressed as:
		(1) J/m^2K (2) W/mK	(3)	$W/m K sec$ (4) W/m^2
	80.	Fin efficiency deals with:		
	٠.	(1) Thermal performance	(2)	Economical material requirement
		(3) Cost of manufacturing	(4)	All of these
	81.	The fatigue life of a part can be improve	d by	
		(1) Electroplating		Polishing
		(3) Coating		Shot peening
	82.	Buttress thread is used where power is t	to be	transmitted in :
	· .	(1) One direction only		Two directions
		(3) Both the directions		None of the above
٠	83.	For the analysis of older plate clutches,	the f	ollowing theory is applicable:
•		(1) Uniform Pressure Theory		Uniform Wear Theory
		(3) Uniform Shear Theory	(4)	None of the above
	84.	The ratio of the maximum displacement to the static force, is known as:	nt of	the forced vibration to the deflection due
		(1) Damping factor	(2)	Logarithmic decrement
		(3) Damping coefficient	(4)	Magnification factor
	85.	Which one of the following is the crit bearings?	erio	n in the design of hydrodynamic journa
		(1) Sommerfield numbers	(2)	Rating life
		(3) Specific dynamic capacity	(4)	Rotation factor ·
	86.	Tooth interference in an external involu	ite st	our gear pair can be reduced by
		(1) Decreasing center distance between	ı gea	r pair
		(2) Decreasing module	17	
		(3) Decreasing pressure angle		
		(4) Increasing number of gear teeth		
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87.	In spur gears, the circle on which the involute is generated is called the:
	(1) Pitch circle (2) Clearance angle
	(3) Base circle (4) Addendum circle
88.	A static fluid can have:
	(1) Non-zero normal and shear stress
,	(2) Negative normal stress and zero shear stress
	(3) Positive normal stress and zero shear stress
	(4) Zero normal stress and non-zero shear stress
89.	For the stability of a floating body, under the influence of gravity alone, which of the following is true?
	(1) Metacenter should be below centre of gravity
	(2) Metacenter should be above centre of gravity
•	(3) Metacenter and centre of gravity must lie on the same horizontal line
	(4) Metacenter and centre of gravity must lie on the same vertical line
90.	A fluid is one which can be defined as a substance that:
	(1) Has same shear stress at all points
	(2) Can deform indefinitely under the action of the smallest shear force
	(3) Has the small shear stress in all direction
	(4) Is practically incompressible
91.	A single degree of freedom system having mass 1 kg and stiffness 10 kN/m initially at rest is subjected to an impulse force of magnitude 5 kN for 10 ⁻⁴ seconds. The amplitude in mm of the resulting free vibration is:
	(1) 0.5 (2) 1.0 (3) 5.0 (4) 10.0
92.	A circular solid disc of uniform thickness 20 mm, radius 200 mm and mass 20 kg, is used as a flywheel. If it rotates at 600 rpm, the kinetic energy of the flywheel, in Joules is:
	(1) 395 (2) 790 (3) 1580 (4) 3160
93.	If two forces each equal to P in magnitude act at right angles, their effect may be neutralized by a third force acting along their bisector in opposite direction whose magnitude is equal to:
	(1) $2P$ (2) $P/2$ (3) $\sqrt{2}P$ (4) $P/\sqrt{2}$
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94.	A simple pendulun	of length of 5	m, with	a bob of mass	1 kg,	is in simple	/s The not
	A simple pendulum motion. As it passe force on the bob at	s through its m	ean posit	ion, the bob h	as a sp	seed of Sing	/ S. The hel
	force on the bob at	the mean positi	on is:			or N	•
	(1) Zero	(2) 2.5 N	(3)	5 N	(4)	25 N	
						-tog 12 cm	into a fixed
95.	A bullet of mass 0.0	3 kg moving w	ith a spee	d of 400 m/s	penetr	will be:	
	block of wood. The	average force e	exerted by	the wood on	Dunet	40 kN	
	(1) 10 kN	(2) 20 kN	(3)	30 kN	(4)	40 KI	
96.	Ratio of moment of	inautic of a sine	ulau badı	rabout its v-23	cis to t	hat about y	-axis is:
50.	(1) 0.5	1000 and 100		200 No. 10 No. 1	(1)	2.0	
	(1) 0.5	(2) 1.0	(3)	1.5	(4)	2.0	
97.	The members of the	e truss structure	e are subie	ected to:	Litima	, and the second	
	(1) Bending Stress			Normal Stres	S	**************************************	
	(3) Shear Stress			Nominal Stre		11,000	Y Park
) (2)				
98.	The bodies which r	ebound after in	npact are	called:			
	(1) Inelastic bodies	3		Elastic bodie	S		The state of the s
	(3) Imaginary bod	ies	(4)	All of the abo	ove		
-			$M^{\prime} \approx 6$				
99.	If the end portion of	of a beam is exte	ended bey	ond the supp	orts, s	uch a beam	is called:
•	(1) Canfilever Bea	m		Fixed Beam		•	
	(3) Overhanging E	Beam	(4)	Clamped Be	am	Section 1	1864
100.	A cylindrical elasti (1) tensile stress in	• c body subjecte	d to puro	tomaion al	1 , 1		
	(1) tensile stress in	a direction 459	to the avi	torsion about	its ax	is develops	
	(2) no tensile or co	mpressive stre	co trie axi	S		and are there	15
_	(3) maximum shea	ar stress along t	bo ovio ol				
	(4) maximum shea	ar stress at 45° t	o the avia	the shaft			
			o trie axis				
							7. U.
		The second secon	/				

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Sr. No.	Set-A	Set-B	Set-C	Set-D
1	С	D	В	Α
2	В	В	В	С
3	С	D	А	D
4	A	C.	Α	С
5	В	C.	С	С
6	В	C.	В	В
7	В	C.	D	D
8	В	C,	В	С
9	C	D-	B.	C
10	A	В.	Α,	В
11	D	В	D.	C
12	В	D	Α	С
				В
13	D	В	B _e	С
14	С	С	D.	
15	С	В	A	A
16	С	A	D,	D
17	С	D	С	C
18	С	D	C	В
19	D	С	B.	D ₁
20	В	В	В	C
21	D	A	С	D
22	Α	С	В	C
23	В	D	С	В
24	D	С	Α	D
25	А	С	В	C
26	D	В	В	C
27	С	D	В	В
28	С	C	В	D
29	В	С	С	D
30	В	В	Α.	C.
31	D	C.	В	D
32	C	С	D	В
33	В	·B	В	D
34	D	C.	С	C
35	С	A	В	C
36	С	D	A,	C.
37	В	C.	D	C.
38	D	В	D	C.
39	-	D	С	
	D	C		D,
40	С		B.	В
41	В	D.	В	В
42	В	С	В	D
43	A	В.	В	В,
44	A	D	A	C ,
45	С	С	С	В
46	В	С	Α	Α,
47	D	В	В	D a
48	В	D	D ·	D ,
49	В	D	C.	C
50	А	C.	Α.	В

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M. Phil/ PhD/URS Entrance Examination Answer Key

Sr. No.	Set-A	Set-B	Set-C	Set-D
51	С	D	D	В
52	C	Α	С	В
53	В	В	В,	В
54	C	D	D	Α
55	Α	A	С	С
56	D	D.	С.	Α
57	С	С,	В	В
58		C.	D	D
59	D	B.	D.	С
60	С	В、	C.	A,
61	В	В	А	С
62	В	В	С	Α,
63		A	D	Α
64	A	A	С	С
65		С	С	D
66	-	В	B,	D
67	1-	D	D	A
68	D	В	С	В
	C	В	C,	D
	A	A	В,	A
	-	В	C C	В.
71		-		
72	С	В	A	В
73	D	В.	A	A
74	С	A C	С	C
75			D	
76	В	A	D	В,
77		В	A	D,
78	С	D	В	В
79	С	С	D	В
80	В	Α.	A	Α,
81	С	C '	D	D
82	Α	B,	В	Α
83	Α	C.	D	В.
84	С	A	С	D.
85	D	B.	С	A
86	D	₿r,	С	D,
87	A	B.:	C,	C.
88	В	B,	G	C.
89	D	C.	D	B.
90	A	A	В	B •
91	В	С	С	С
92	D	А	С	В
93	В	А	В	С
94	С	С	С	А
95	В	D	А	В
96	Α	D	D.	В
97	D	Α.	С	B _.
98	D	В	В	В
99	С	D	D	С
100	В	A	C v	Α.