## ENGINEERING KNOWLEDGE TEST (EKT) MECHANICAL STREAM

Set No 1/14

**BOOKLET SERIES E** 

		for Candida				Time Allott		
1.	Total number of Questions 50. Each Question is of three marks.					S		
2.	One mark will be deducted for every wrong answer.							
3.	Do not write or mark on Question Paper.							
4.	Quest	ion Paper to	be ret	urned befor	e leavir	ng the Exam	Hall.	
Q1.	A bag	contains 4	white,	5 red and 6	blue b	alls. Three	balls ar	e drawn at
	rando	m from the ba	ag. The	probability the	hat all o	f them are re	d, is:	
	(a)	1 22	(b)	3	(c)	$\frac{2}{91}$ (d)	2	
Q2.	Two b	ulbs when co						h The total
<b>~</b>		consumed w						
	(a)	25 W	(b)			100 W	(d)	200 W
Q3.		apacitance be	. ,				` '	
	(a)	diameter of		3,	(b)	distance be		
	(c)	both A and E	3		(d)			
Q4.	Laplac	ce transform	of 3 t⁴ i	S	` '			
	(a)	$\frac{18}{s^4}$	(b)	24	(c)	72	(d)	$\frac{12}{5^5}$
Q5.		s⁴ isulation resi						
QO.	for 2 n		Startice	or cable, 1 i	viii long	1 15 1 10122. 11	Sulation	resistance
	(a)	5 ΜΩ	(b)	1 ΜΩ	(c)	$0.5~\text{M}\Omega$	(d)	0.002 MΩ
Q6.	, ,	S system , pr	, ,			0.0 11112	(4)	0.002 11112
	(a)	Newton / m <sup>2</sup>			(b)	dynes / cm2	-	
		Dynes cm <sup>2</sup>			(d)	gm wt / cm <sup>2</sup>	!	
Q7.		alue of log <sub>10</sub> x	2- log <sub>10</sub>	x = 10		Ü		
	(a)	0		2		1	(d)	4
Q8.	The va	alue of i. (j x	k)+j.(	i x k ) + k.(	i x j ) is	equal to		
		3		1			-1	
Q9. 🙀		angular box			open at	t the top. The	e maxim	num volume
		box made fro	om 120	0 m² tin is		2		
	(a)	3000m <sup>3</sup>			(b)	4000m <sup>3</sup>		
040	(c)	2000m <sup>3</sup>			. (d)	none of the	above	
Q10.		lear reaction	s we ha	ave conserva				
	(a)	mass only	بامم	(d)	(b)	energy only		
Q11.	(c)		•	(d)		, energy & m	omentu	m
QTI.	(a)	ad at which t buckling loa		iriir just buck	(b)	critical load		
	(c)	crippling loa		,	, ,	any one of		
Q12		sile test is pe		d on a roun	. ,	•		heen found
G. 12.		ne diameter r						
	test w		omanio	арргохипас	ny ounte	at madaro.	1110 1110	iteriai ariaei
	(a)		(b)	cast iron	(c)	glass	(d)	copper
Q13.	, ,	imply suppor						
		, the point of						
	(a)	lies in the ce	entre of	the beam				
	(b)	lies at the er	nds of t	he beam				
	(c)	depends up	on the	length of bea	m			
_	(d)	does not exi			_			
Q14.		lus of rigidity	-					_
	(a)	linear stress			(b)	lateral strain		
	(c)	linear stress	to line	ar strain	(d)	shear stres	s to she	ar strain.

S/34 AFC/14

SSBcrackExams.com

Q15.							
	(a) maximum size of column to minimum size of column						
	(b) width of column to depth of column						
	(c) effective length of column to least radius of gyration of the column						
	(d) effective length of column to width of	column	wor is boing				
Q16.	When screw threads are to be used in	When screw threads are to be used in a situation where power is being					
	transmitted in one direction only, then the	crew threads suitable	e ioi tilis wili				
	be (b)	acme threads					
	(a) square threads (b) (c) knuckle threads (d)	buttress threads					
047			epth, the flow				
Q17.	is called	35 than the ontion of	opan, and men				
	(a) critical flow (b)	turbulent flow					
	(c) tranquil flow (d)						
Q18.			at a				
<b>Q</b> 10.	(a) low pressure (b	high pressure					
	(c) low velocity (d	high velocity					
Q19.	When a body is immersed wholly or partial	in a liquid, it is lifted	up by a force				
	equal to the weight of liquid displaced by the	body. This statemen	nt is called				
	(a) Pascal's law (b		-				
	(-)	Bernoulli's theore					
Q20.		is called Euler's	number.				
	(a) pressure force (b	elastic force					
	(c) surface tension force (d	viscous force	called				
Q21.	(1) -1		throat				
000	(a) hearth (b) stack (c	, ,	tinoat				
Q22.	. The heat treatment process used for castir (a) carburising (b)	normalizing					
	(4) 54.54.15	tempering					
Q23.	(o) armouning						
Q20.	(a) naked eye (t		ре				
	(c) X-ray techniques (c)						
Q24.	a contraction descends and						
	(a) area of contact only (t		only				
	(c) both (a) and (b) (c)						
Q25.	5. The velocity ratio of a single purchase cra	winch can be increas	sed by				
	(a) increasing the length of the handle	_					
	(b) increasing the radius of the load dru	n inion					
	(c) increasing the number of teeth of the	pinion					
	(d) all of the above						
Q26.	the the constant officiency						
	<ul><li>(a) increases the thermal efficiency</li><li>(b) increases the compressor work</li></ul>						
	<ul><li>(c) increases the turbine work</li><li>(d) decreases the thermal efficiency</li></ul>						
Q27							
3/27	(a) remove impurities from air						
	(b) reduce volume of air						
	(c) cause moisture and oil vapour to d	p out					
	(d) cool the air						

Q2	28. The ratio of the indicated power to	the shaft	nower o	or brake nower of the		
	motor or engine required to drive the	ne compre	esor is	called		
	(a) compressor efficiency	(b)				
	(c) isothermal efficiency			metric efficiency		
	(5) loothermal emclericy	(d)	med	hanical efficiency		
Q2	29. The type of rotary compressor used	d in coron	lanaa i			
	(a) centrifugal type					
	(c) radial flow type	(b)		I flow type		
03	30 Which of the following etatement is	(d)	none	e of these		
Q	30. Which of the following statement is	wrong?				
	(a) The heat transfer in liqui	d and g	ases t	akes place according to		
	convection.					
	(b) The amount of heat flow	through	a body	is dependent upon the		
	material of the body.					
	(c) The thermal conductivity	of solid	metals	increases with rise in		
	temperature,			•		
	(d) Logarithmic mean temperatu	ure differe	nce is	not equal to the arithmetic		
03	mean temperature difference			,		
QS	31. The reference fuels for knock rating	of spark	ignition	engines would include		
	(a) iso-octane and alpha-methyl	naphthal	ene			
	(b) normal octane and aniline					
	(c) iso-octane and normal hexar					
02	(d) normal heptane and iso-octa	ine				
Q3	32. In a four stroke cycle, the minimu	ım tempe	rature i	nside the engine cylinder		
	occurs at the					
7	(a) beginning of suction stroke		(b)	end of suction stroke		
	(c) beginning of exhaust stroke		(d)	end of exhaust stroke		
Q3	and any arrang tabe a					
	(a) steady uniform flow	(b)	stea	dy non-uniform flow		
02	(c) unsteady uniform flow	(d)	unst	eady non-uniform flow		
Q3	1000011					
	(a) ratio of absolute viscosity to	the densit	y of the	liquid		
	(b) ratio of density of the liquid to	(b) ratio of density of the liquid to the absolute viscosity				
	(c) product of absolute viscosity and density of the liquid					
02	(d) product of absolute viscosity	and mass	s of the	liquid		
Q3	process, there is a	ì				
	(a) loss of heat		(b)	no loss of heat		
02	(c) gain of heat		(d)	no gain of heat		
QS	36. Gas turbine as compared to steam					
	(a) requires less space for instal					
	(b) has compressor and combus	stion cham	nber			
	(c) has less efficiency					
03	(d) all of these					
Q3	, 5 to 10 to 10 gas tai 211100					
	(a) increases power output	(b)	impr	oves thermal efficiency		
02	(c) reduces exhaust temperature	e (d)	do no	ot damage turbine blades		
Q38. The function of an alternator in an automobile is to						
	(a) supply electric power (b) convert mechanical energy into electrical energy					
	(c) continually recharge the batte					
02	(d) partly convert engine power i	nto electri	c powe	r		
Q39	, p = 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
	(a) ball bearings	(b)		bearings		
	(c) needle roller bearing	(d)	taner	roller bearing		

Q40.	Military type of organisation is known a	s	
	(a) line organisation		
	(b) functional organisation		
	(c) line and staff organisation		
	<ul><li>(d) line, staff and functional organis</li></ul>	ation	
Q41.	The procedure of modifying work	content	to give more meaning and
	enjoyment to the job by involving	employ	ees in planning, organisation
	and control of their work, is termed as		
	(a) job enlargement	(b)	job enrichment
	(c) job rotation	(d)	job evaluation
Q42.	The tool made of cemented carbide we		
	(a) slow speeds	(b)	medium speeds
	(c) fast speeds	(d)	very fast speeds
Q43.	Twist drills are made of		and the second second
	(a) high speed steel	(b)	carbon steel
	(c) stainless steel	(d)	either (a) or (b)
Q44.	A twist drill is a	(1-)	front outline tool
	(a) side cutting tool	(b)	front cutting tool
	(c) end cutting tool	(d)	none of these
Q45.		ve coor	dinate system a line is created
	from	<b>/b</b> \	the anding point of the last line
	(a) 0,0	(b)	the ending point of the last line
	(c) the beginning point of the last li	ne (a) to croot	none of the above
Q46.	When using the direct entry method		e a nonzonial line exactly timee
	inches long the drafter should		noint very carefully
	(a) pull the line from away from the	starting	point very carefully
	(b) insure that Ortho is on		
	<ul><li>(c) enter 3 for the length of the line</li><li>(d) read the coordinate position on</li></ul>		amic Readout
047		ne are	needed to properly bias
Q47.	an <i>npn</i> transistor amplifier?	nis are	necded to properly side
	(a) Forward hias the haselem	itter iur	nction and reverse bias the
	(a) Forward bias the base/embase/collector junction.	ittor jui	
	(b) Forward bias the collector/	base iu	nction and reverse bias the
	emitter/base junction.	, a	
	(c) Apply a positive voltage on the	e n-tvpe	material and a negative voltage
	on thep-type material.	7,1	
	(d) Apply a large voltage on the ba	ase.	
Q48.		rol	
<b>Q</b> 40.			pitch (d) lift
049		, ,	•
Q 10.			square of speed of aircraft.
Q50			
		(b)	Reynold's number
	(c) Froude's number	(d)	none of the above
Q49.	<ul> <li>(a) yaw</li> <li>(b) roll</li> <li>The lift of an aircraft is directly propor</li> <li>(a) speed of aircraft</li> <li>(c) does not depend on speed.</li> <li>The hardness of steel can be measur</li> <li>(a) Brinell number</li> </ul>	(c) tional to (b) (d) re in (b)	the square of speed of aircraft. none of the above  Reynold's number