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Question Booklet Alpha Code



Total Number of Questions : 100

Time : 90 Minutes

Question Booklet SI. No

∢

Maximum Marks : 100

INSTRUCTIONS TO CANDIDATES

- 1. The Question Paper will be given in the form of a Question Booklet. There will be four versions of Question Booklets with Question Booklet Alpha Code viz. **A**, **B**, **C** & **D**.
- 2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the Question Booklet.
- 3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
- 4. If you get a Question Booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
- 5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same alpha code.
- 6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the Question Booklet, until the indication is given to start answering.
- 7. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him/her contains all the 100 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
- 8. A blank sheet of paper is attached to the Question Booklet. This may be used for rough work.
- 9. Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.
- 10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
- 11. Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.
- 12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
- 13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

- 1. How many numbers of cuts in a 250 mm flat bastard double cut file over a length in 1 cm ?
 - A) 7.1 B) 12 C) 8 D) 10

2. Which is the angle of an edge of a triangular file ?

- A) 90 degree B) 60 degree
- C) 30 degree D) 45 degree
- 3. Which is the most suitable pitch of a hack-saw blade cutting mild steel or cast iron ?
 - A) 1.8 mm B) 0.8 mm C) 1.4 mm D) 1.0 mm
- 4. While chipping, the clearance angle is the angle between
 - A) The working surface of the job and the top surface of the cutting edge of chisel
 - B) The working surface of the job and the bottom surface of the cutting edge of chisel
 - C) The surface at right angle to the cutting edge of chisel and the working surface of the job
 - D) The point angle of the chisel and the working surface of the job

5. Which punch is used to locate the drill bit ?

- A) Prick punch B) Dot punch
- C) Centre punch D) None of the above
- 6. In the following which is not the use of atry square ?
 - A) Measuring right angle
 - B) Checking squareness
 - C) Marking straight line at 90 degree against an edge
 - D) Setting work-piece at 90 degree angle
- 7. Which is the symbol conventionally used for resinoid bond ?
 - A) 'V' B) 'R' C) 'B' D) 'E'
- 8. Which hammer is used for hammering inside curves for bending ?
 - A) Ball-peen hammer B) Straight-peen hammer
 - C) Sledge hammer D) Cross-peen hammer

Α

- 9. Which head is used to set at any required angle in the combination set ?
 - A) Square head B) Protractor head
 - C) Centre head D) Rule

10. What is the accuracy of the surface of lapped and machined surface plate ?

- A) 0.001 mm B) 0.015 mm C) 0.025 mm D) 0.0025 mm
- 11. Which of the following statement is/are correct about BSW thread ?
 - i. BSW thread has an included angle of 55°.
 - ii. Depth of the thread is $0.6134 \times Pitch$.
 - A) Only i B) Only ii
 - C) All of the above (i and ii) D) Both i and ii are not correct
- 12. Which of the following statement is/are correct about BA thread ?
 - i. BA thread has an included angle of 47.5°.
 - ii. BA threads are used in small screws of electrical appliances, watch screws, screws of scientific apparatus.
 - A) Only iB) Only iiC) All of the above (i and ii)D) Both i and ii are not correct
- 13. What is the included angle of metric acme thread ?
 - A) 29° B) 30° C) 60° D) 45°
- 14. Which of the following thread, one flank is perpendicular to the axis of the thread and the other flank is at 45°?
 - A) BA thread B) Trapezoidal threads
 - C) Worm thread D) Buttress thread
- 15. Which of the following statement is/are correct about pitch diameter of a thread ?
 - i. It is the smallest diameter formed after an external thread is cut.
 - ii. It is the largest diameter over which a thread is cut in the case of an external thread.
 - iii. It is the diameter of an imaginary cylinder which passes through the thread such that the width of the space is equal to the width of the thread.
 - A) Only i B) Only ii
 - C) Only iii D) All of the above (i, ii and iii)

16. Which of the following statement is/are correct about square and trapezoidal threads ?					d trapezoidal			
	i.	Square and trapez threads.	oidal threads have m	nore	cross-sectional a	area than 'V'		
	 Square and trapezoidal threads are more suitable to transmit motion or power than 'V' threads. 							
	iii.	Square and trapez	oidal threads are not	use	ed for fastening p	urposes.		
	A)	Only i and iii		B)	Only ii and iii			
	C)	Only i and ii		D)	All of the above	(i, ii and iii)		
17.	. Which of the following is the horizontal distance from a point on one thread to corresponding point on the adjacent thread measured parallel to the axis ?							
	A)	Crest	B) Root	C)	Pitch	D) Flank		
18.	Wł	nen a single helix is	making a screw, it is	s ca	lled			
	A)	A) Single start thread			B) Multi-start threads			
	C)	Knuckle thread		D)	Worm thread			
19.	Wł	nich of the following	statement is/are cor	rect	about multi-start	threads ?		
	i.	In multi-start threa pitch.	ds, the lead of the he	elix i	ncreased without	increasing the		
	ii.	Lead = Pitch \times Nu	mber of starts in mult	i-sta	art threads.			
	iii.		d makes it possible to xial movement of the		• •	read less and		
	A)	Only i and iii		B)	Only ii and iii			
	C)	Only i and ii		D)	All of the above	(i, ii and iii)		
20.	Which of the following is the surface connecting the crest and the root of a thread ?							
	A)	Depth of thread		B)	Flank			
	C)	Clearance		D)	Helix			
21.	Or	ne kWh of energy e	quals nearly					
	A)	4186 J	B) 860 kcal	C)	735.5 W	D) 1000 W		
22.	Inc	luction watt hour m	eters are free from _		errors.			
	A)	Frequency	B) Creeping	C)	Phase	D) Temperature		

23.	 A coil has an inductance of 1 Henry, if current changing at the rate of 2A/sec induces 					of 2A/sec		
	A)	Half a volt in it		B) Two volt in it				
	C) One volt in it			D)	Two volt in anoth	er c	oil	
24.	To convert a simple meter into a voltmeter			the	e resistor has to be) col	nnected in	
	A) Shunt			B) One shunt and one series				
	C)	Series		D)	Vertical			
25.	Wł	nich of the following	g variety of copper ha	s th	e best conductivity	y ?		
	A) Hard drawn copper			B) Pure annealed copper				
	C)	Induction hardene	d copper	D)	Copper containin	g tra	aces of silicon	
26. A moving iron instrument can be used for								
	A) AC only			B) Lux meters				
	C)	DC only		D)	Both AC and DC			
27.	Wł	nich resistor has ne	egative temperature co	o-ef	ficient ?			
	A)	Thermistor	B) Sensistor	C)	LDR resistor	D)	Varistor	
28.	-	e resistance betwe own as	en the opposite faces	s of	a meter cube of a	mat	terial is	
	A)	Resistance	B) Conductance	C)	Resistivity	D)	Conductivity	
29.	In a	a capacitor, the ele	ectric charge is stored	in				
	A)	Both plates and di	electric	B)	Metal plates			
	C)	Dielectric		D)	None of the abov	e		
30.	Wł	ny the ohm meter is	s graduated with non-	line	ar scale ?			
	A)	A) Resistance is inversely proportional to the square of current						
	B) Voltage is directly proportional to resistance							
	C) Voltage is directly proportional to the square of current							
	D)	D) Current is inversely proportional to resistance						
31.	Wł	nich of the following	g is a ferrous metal ?					
	A)	Copper		B) Cast iron				
	_				_			

C) Zinc D) Brass

- 32. Steel is an alloy of iron and carbon. How much is the maximum quantity of carbon content in steel ?
 - A) 1.5% B) 2.5%
 - C) 3.5% D) 2.75%
- 33. What is meant by creep?
 - A) Property of breaking material without much permanent deformation
 - B) Failure of a material caused under repeated or fluctuating loads
 - C) The resistance of a material to elastic deformation
 - D) The slow and continuous deformation of a material under steady load
- 34. What is the melting point of lead ?
 - A) 426°C
 B) 396°C

 C) 326°C
 D) 512°C
- 35. Which of the following is an Aluminium alloy ?
 - A) Gun metal B) Y-Alloy
 - C) Bell metal D) Nickel silver

36. Which of the following is not the property of zinc ?

- A) It resists corrosion B) Good conductor of heat and electricity
- C) It melt at 231.5°C D) It is a bluish white metal
- 37. Which of the following is measure of stiffness ?
 - A) Modulus of elasticity B) Modulus of plasticity
 - C) Resilience D) Toughness
- 38. What is the composition of Brass ?A) Copper and zincB) Copper and tin
 - C) Zinc and tin D) Copper and nickel
- 39. Which of the following material has the maximum ductility ?
 - A) Zinc B) Mild steel
 - C) Aluminium D) Copper

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- 40. What is the function of lead as an alloying element ?
 - A) To improve strength and toughness
 - B) To increase the elastic limit of steel
 - C) To improve machinability
 - D) To improve hardness
- 41. Which of the following is a part of Taly-surf?
 - A) Stylus B) Motor race
 - C) Analyser D) All of the above
- 42. Roughness value 0.2 to 0.8 microns is indicated by which symbol ?
 - A) One inverted triangle B) Two inverted triangles
 - C) Three inverted triangles D) Four inverted triangles
- 43. When a circle is added to the basic symbol of two legs of unequal length inclined at approximately 60°, what is meant by the surface symbol indication ?
 - A) Material removal by machining is required
 - B) The material removal is not permitted
 - C) Material addition is required
 - D) Any machining method can be used
- 44. Which of the following process give maximum surface finish?
 - A) Honing B) Sand casting
 - C) Burnishing D) Lapping
- 45. The lines or patterns on the work surface caused by the movement of the cutting tool is called
 - A) Roughness B) Waviness
 - C) Surface texture D) Lay
- 46. The quantity of heat required to change unit mass of substance completely from one state in to another at constant temperature is
 - A) Specific heat B) Heat capacity
 - C) Latent heat D) Molar specific heat

47. What is the unit of A) Calorie	heat in SI system ? B) Joule	C) Ampere	D) Hertz
48. The mode of heat	ransfer which doesn'	t require a medium is	
A) Radiation	B) Conduction	C) Convection	D) Friction
49. The SI unit of pres	sure is		
A) Erg	B) Watt	C) Pascal	D) Newton
50. In Fahrenheit scale	e, the boiling point is f	ixed at	
A) 25°F		B) 100°F	
C) 200°F		D) 212°F	
51. The pressure measure	sured greater than at	mospheric pressure is	scalled
A) Vacuum pressu	re	B) Gauge pressu	re
C) Absolute pressu	ire	D) Atmospheric p	ressure
52. The temperature ra	ange of oxy-acetylene	e flame is	
A) 1825°C to 1875	°C	B) 2400°C to 270	0°C
C) 2700°C to 2800	°C	D) 3100°C to 330	O°C
53. The instrument use	ed to measure very hi	gh temperature of fur	nace is
A) Thermometer		B) Pyrometer	
C) Barometer		D) Technometer	
54. The metal joining p	process in which the v	vork-pieces are not he	eated is called
A) Brazing		B) Welding	
C) Dip brazing		D) Soldering	
55. The most active so	Idering flux group is		
A) Inorganic fluxes		B) Resin fluxes	
C) Organic fluxes		D) Both B) and C)
56. Which type of oxy-a	cetylene gas flame is v	videly used for welding	mild steel material ?
A) Oxidising flame		B) Neutral flame	
C) Carburising flan	ne	D) All of the abov	e

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57. In leftward welding technique of oxy-acetylene gas welding, the blow pipe is held at an angle between					
A) 10° to 20°	B) 30° to 40°	C) 40° to 50°	D) 60° to 70°		
58. The type of AC are	c welding transformer	ris			
 A) Step up transformed to the state of the s	rmer	 B) Step down tra 	Insformer		
C) Auto transform	er	D) Power transfo	ormer		
59. Hydrochloric acid	is used as flux for sol	dering which material	?		
A) Steel	B) Brass	C) Zinc	D) Lead		
60. Which among the	following is not a met	thod of Brazing ?			
A) Electroslag Bra	zing	B) Induction Braz	zing		
C) Furnace Brazin	g	D) Torch Brazing)		
61. Which of the follow	ving statements is/are	e correct about patterr	n making in casting ?		
i. Wood is the mo	ost common material	for making patterns for	or castings.		
When a metal pattern is cast itself using a wooden pattern, then the wooden pattern is called a dummy pattern.					
• .	iii. A good pattern is one which can be easily worked, shaped and joined and should be light in weight.				
iv. Plastics are not	t used as pattern mat	erial for casting.			
A) Only ii and iii	B) Only i and iv	C) Only i, ii and i	ii D) Only i and iii		

- 62. Arrange the below stages of casting as per their order of manufacturing sequence.
 - a. Testing and inspection
 - b. Melting and casting
 - c. Moulding and core making
 - d. Fettling
 - e. Pattern making
 - A) e-d-c-b-a
 - B) a-e-c-b-d
 - $C) \hspace{0.2cm} e-c-b-d-a$
 - $D) \ c-d-b-e-a$

63. Match List – I with List – II below :

List – I

- P. Lost wax process
- Q. Centrifugal casting
- R. Permanent mould casting
- S. Plaster mould casting

	Ρ	Q	R	S
A)	с	d	b	а
B)	b	а	d	С
C)	b	d	а	С
D)	d	С	b	а

List – II

- a. Die casting
- b. Investment casting
- c. Plaster of Paris
- d. Rotating mould

64. Which of the following statements is/are false about sand casting ?

- i. The intermediate mould section between cope and drag is known as cheek.
- ii. Cope refers to the lower half containing the bottom half of the pattern.
- iii. Drag refers to the upper half containing the top half of the pattern.
- iv. The proper design of tapered sprue is necessary to avoid aspiration effect.
- A) i and iv only B) ii and iii only
- C) i, ii and iii only D) none of these

65. Which statement is true about hot chamber die casting ?

- A) In hot chamber die casting, the melting unit constitutes an integral part of the process.
- B) In hot chamber die casting, the mould is submerged in the molten metal.
- C) In hot chamber die casting, the entire machine is heated.
- D) In hot chamber die casting, the molten metal is brought and poured into the die casting machine with the help of ladles.
- 66. Which statement is false about centrifugal casting ?
 - A) Centrifugal casting methods are classified as true-centrifugal casting, semicentrifugal casting and centrifuged casting.
 - B) They have more or less a symmetrical configuration on their outer contour.
 - C) To form the internal shape; pressure is generally obtained by compressed air or hydraulically.
 - D) The use of gates, feeders and cores is eliminated, making the method less expensive.

67.	 Which among the foll A) Economical for log B) Extreme complex C) Most direct route D) The product gives 	w-volume production ity is possible from pattern to casting		nd casting ?	
68.	Pump is used for incr A) Pipe lines	ease the pressure in B) Section pipe	C)	Vent pipe	D) Hume pipe
69.	Select the Reciproca A) Simple hand oper C) A) and B)		B)	Single acting Centrifugal monc	block
70.	Compressed air pum A) 50	p can lift water from a B) 100		oth of 130	meter. D) 150
71.	Priming is a process A) Casing C) Casing and suctio		B)	Suction pipe None of these	
72.	What are the main co A) Impeller C) Delivery pipe	omponents of a centrif	B)	ll pump ? Prime mover A), B) and C)	
73.	In a vernier caliper, n A) Fixed jaw C) Beam	novable jaws are the p	B)	s of which unit ? Vernier slide Main scale	
74.	·	ometer one end forms ered nose is fitted on B) Barrel	it ?	asuring face and t Spindle	he other end is D) Thimble
75.	Which instrument is a an offset scriber ?	used to measure sizes	s fro	m the lower plane	with the help of
	A) Vernier height gasC) Vernier caliper	uge	,	Vernier scale Depth micromete	r
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76.	76. What is the least count of depth micrometer ?					
	A) 0.02 mm	B)	0.001 mm	C)	0.01 mm	D) 0.1 mm
77.	77. Which instrument is used to measure the diameter of holes and the distance between internal parallel surfaces like slots ?					
	A) Depth micrometer	r		B)	Inside micromete	r
	C) Depth bar			D)	Vernier caliper	
78.	In which instrument the display ?	he d	istance or the me	asu	rements are read	from LCD/LED
	A) Digital caliper	B)	Depth gauge	C)	Vernier caliper	D) Dial caliper
79.	79. In a vernier caliper, the main scale divisions (9 mm) are divided into 10 equal par in the vernier scale. What is the least count of this vernier caliper ? Here one mai scale division is (1 mm).					
	A) 0.02 mm	B)	0.1 mm	C)	0.01 mm	D) 0.001 mm
80.	Which device is fitted measuring faces of the				•	e between the
	A) Anvil	B)	Spindle	C)	Ratchet stop	D) Barrel
81.	Which is the persona	l saf	fety?			
	A) Keep the machine	e cle	an	B)	Concentrate on y	our work
	C) Keep the gang wa	ay ai	nd floor clean	D)	Sweep away the	metal cuttings
82.	Which is the immedia	ate li	fe saving procedu	re ?	?	
	A) First aid			B)	Call a doctor	
	C) Intensive care			D)	Medical treatmen	t
83.	What 'A' denotes in A	ABC	of 'First aid' ?			
	A) Air way			B)	Accident	
	C) Absent mind			D)	Avoid accident	
84.	Which of the following environment?	g ac	tivity to be perforn	ned	for better up keep	o of working
	A) Crack practical jol	kes	while on work			
	B) Cleaning the shop	o floo	or			
	C) Leave the machin	ies v	which is in motions	6		
	D) Do not use adequi	late	light in the worksh	nop		

D) Do not use adequate light in the workshop

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85.	What is the shape ofA) CircularC) Square of oblong	warning signs ?	,	Triangular Square	
86.	What is the ratio of 4 A) 5:1	kg to 800 grams ? B) 4 : 8	C)	8:4	D) 2:4
87.	How many millimetre A) 30.48 mm	s are there in 12 inch B) 304.8 mm		3.048 mm	D) 40.48 mm
88.	Divide : $\frac{20}{31} \div \frac{15}{62}$.				
	A) 2 ⁴ / ₃	B) 2 ³ / ₂	C)	$2\frac{1}{3}$	D) 2 ² / ₃
89.	What is the percentage and weight of tin is 2.		stin	g if the weight of c	opper is 42.3 kg
	A) Cu 98%	B) Cu 96%	C)	Cu 94%	D) Cu 92%
90.	What is the length of copper is 8.9 g/cm ³ a		-		g, density of
	A) 1400.10 cm		B)	1300.10 cm	
	C) 1313.33 cm		D)	1413.33 cm	
91.	Two turners need three to produce a) pie	eces. How long do	es it takes for
	A) 2 days	B) 2.5 days	C)	1.5 days	D) 2.25 days
92.	A cylindrical tank 2 m petrol in tonnes, assu			•	Find the weight of
	A) 7900.8 Tonnes		B)	7912.8 Tonnes	
	C) 7952.8 Tonnes		D)	7940.8 Tonnes	
93.	The lower limit of a di	mension, stated as 2	3H7	in a drawing is	
	A) 22 70	B) 22 70	\sim	22.00	00 00 /0

A) 23.70 B) 22.70 C) 23.00 D) 22.30

94.	4. If a shaft size 38 $^{+0.03}_{-0.01}$ mm mates with a hole of size 38 $^{+0.02}_{-0.01}$ mm, the maximum					
	interference in the as	sembly is				
	A) 0.05	B) 0.04	C)	0.02	D) 0.01	
95.	Find the maximum cl $^{-0.005}$ a shaft of 27 $^{-0.025}$ m		ole d	+0.00 of size 27 +0.02 mm	is assembled with	
	A) 0.02 mm	B) 0.025 mm	C)	0.040 mm	D) 0.045 mm	
96.	A basic hole means					
	A) Upper deviation is	szero	B)	Lower deviation i	s zero	
	C) Both A) and B)		,	None of the abov		
97.	The relation between	mating parts in an as	sser	nbly is termed as		
	A) Link		B)	Joints		
	C) Fits		D)	Mechanism		
98.	The difference betwee nominal size is terme		fact	ured product and	the corresponding	
	A) Allowance		B)	Tolerance		
	C) Actual deviation		D)	Minimum deviation	on	
99	Which of the following	n statements is corre	ot re	garding "Minimum	Clearance"?	
00.	A) Difference betwee	-				
	,	en maximum size of h				
	,	en minimum size of h				
	,	en minimum size of h				
	D) Difference betwee				or shart.	
100.	If the allowance of 0.0 find the design size.	03 mm for clearance i	s gi	ven and the shaft o	diameter is 18 mm,	
	A) 18.03 mm	B) 17.97 mm	C)	17.03 mm	D) 18.97 mm	

-15-

Space for Rough Work