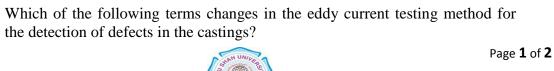
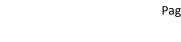
Enrollmer	C. U. SHA	Exam Seat No: H UNIVERSITY Examination-2020	
Subject Na	ame: Material Technology		
Subject Code: 4TE03MTE1		Branch: B.Tech (Mechanical)	
Semester:	3 Date: 16/03/2021	Time: 11:00 To 02:00	Marks: 70
(2) Ins (3) Dr	se of Programmable calculator	* & any other electronic instrument is wer book are strictly to be obeyed. (if necessary) at right places.	prohibited.
(a) (b) (c) (d) (e) (f) (g) (h) (i)	Co-ordination number of a cra a) Number of particles in the b) Number of nearest neighb c) Number of octahedral void d) Number of tetrahedral void Which of the following cann a) Melting temperatures of v b) Temperature range for sol c) Equilibrium solid solubilit d) Purity of materials The point at which two liquid a) Eutectic point b) Isotherr The defect that occurs due to a) Vacancy defect b) Schottl In which of the following de a) Schottky defect b) Frenke Alloy of Ni and Fe is termed a) Brass b) Bronze c) Dura Major constituent of the Nicl a) Copper b) Nickel c) Irot Which of the following is d into martensite? a) Hardenability b) Strength	ic Mass c) Crystal Structure d) Electrystalline solid is: e unit cell tors of a particle ds in a unit cell to be obtained using a phase diagram arious phases didification the displacement of an ion is known as a displacement of an ion is known a ky defect c) Frankel defect d) Intersfect the density of the crystal is affected defect c) Stone-Wales defect d) A las alumin d) Invar hrome is n d) Zinc defined as the ability of the structure above (in degree centigrade)	ctic point us titial defect ted? Antisite defect

(**k**)





		a) Resistance b) Impedance c) Conductivity d) Capacitance	
	(l)	Which of the following statements is/are true for the ultrasonic test?	
		a) Equipment used for ultrasonic testing is portable	
		b) Complicated shapes can be easily scanned	
		c) Waves generated are health hazardous	
		d) Waves generated are health hazardous and complicated shapes can be easily scanned	
	(m)	Complex shape can be formed effectively using?	
	. ,	a) Powder metallurgy b) Turning c) Sand casting d) Metal casting	
	(n)	Formation of metal powder to use in powder metallurgy by reducing some	
		compound with CO or other molecules is known as?	
		a) Atomization b) Reduction c) Crushing d) Electrolysis	
Atten	ipt any	y four questions from Q-2 to Q-8	
Q-2		Attempt all questions	
~ –	(a)	What is solid solution? Classify and explain Hume Rothery's Rules.	(07)
	(b)	Define APF and determine APF for BCC and FCC crystal structure.	(07)
Q-3		Attempt all questions	
	(a)	Explain point defects in metal crystals with neat sketches.	(07)
	(b)	Draw and explain Iron- Carbon equilibrium diagram.	(07)
Q-4		Attempt all questions	
~ ·	(a)	Classify copper alloys and discuss them in brief.	(07)
	(b)	Write a short note on dislocation theories.	(07)
Q-5		Attempt all questions	
	(a)	What is the theory of tempering? Discuss the stages of tempering process.	(07)
	(b)	Explain gray cast iron with characteristics and applications.	(07)
Q-6		Attempt all questions	
~ v	(a)	What is non-destructive test? List various non-destructive tests. Explain X-Ray	(07)
	(33)	Radiography.	(0.)
	(b)	Which are various surface hardening processes? Explain induction hardening	(07)
	(,,,	process with sketch.	(**)
o =			
Q-7	()	Attempt all questions	(O=)
	(a)	What is powder metallurgy? Describe various steps involved in powder	(07)
	a >	metallurgy.	(O=)
	(b)	Explain in detail, the ultrasonic testing method with its benefits and limitations.	(07)
Q-8		Attempt all questions	
~	(a)	Define the following properties:	(07)
	. ,	Ductility, Malleability, Toughness, Creep, Fatigue, Resilience, Hardness.	. /
	(b)	Explain any two methods for production of metal powders.	(07)

