

Question Slide

Question

Number Number

1	1	Explain the general properties of material	s
1	2	What is metal	?
3	3	What is polymers?	
4	4	What is thermoplastic?	
5	5	What is ceramics + Composites?	
6	6+7	Describe chemical bonding + Ionic b	ond
7	8	Describe metallic bond	
8	9, 10	Describe covalent	bond
9	11	Explain the production process of metal	
10	12	Explain the mechanical properties	s
11	13	Define strength	h

12	14	Define stiffness, Ductility _____	
13	15	Define malleability, toughness, electrical properties _____	s
14	16 to 18	What are thermal properties of metals? _____	
15	19, 20	What is durability? _____	
16	21	Describe testing, destructive , non destructive _____	
17	22, 23	Sketch force-extension diagram _____	m
18	24	How do you understand tensile strength _____	h?
19	25	Define % elongation _____	
20	26 to 30	Explain brinell hardness test _____	st
21	31	Explain rockwell hardness test _____	st
22	32	Explain creep _____	
23	33, 34	Explain fatigue _____	
			ue

24	35	What is safety factor?	
25	36	Describe the process of casting _____	g
26	37	Describe the process of ingot casting _____	
27	38 to 43	Describe the process of sand casting _____	ling
28	44, 45	Describe the process of full mould process _____	ss
29	46, 47	What is dimension accuracy + long run production?	
30	48 to 50	What is eutectics? _____	
31	51	What is annealing?	
32	52 to 54	Describe brick analysis _____	logy
33	55, 56	Describe diffusion _____	
34	57	Describe Intermetallic compound _____	
35	58	Sketch equilibrium diagram _____	

			m
36	59 to 61	Explain the way of obtaining equilibrium diagram	m
37	62	What are the part of equilibrium diagram	m?
38	63, 64	What are the types of equilibrium diagram	m
39	65	What is weight of compound from equilibrium diagram	m?
40	66 to 69	What is effect of cooling rate	e?
41	70	What is liquid solution?	
42	71	What is solid solution?	
43	72 to 75	What is solubility curve?	
44	76, 77	Define the technical term Grinding	ing
45	78	Define the technical term Polishing	
46	79 to 80	Define the technical term Etching	
47	81 to 84	Define the technical term Magnification	ion
48	85 to 87	Explain smelting	

49	88, 89	Explain basic oxygen steel making
50	85 to 87	Explain smelting
51	88, 89	Explain basic oxygen steel making
52	90, 91	Explain electric arc steel making
53	92 to 98	Explain composition of steel
54	99 to 101	Explain annealing
55	102	Explain brittle fracture in steel
56	103 to 107	Explain hardening
57	108	Explain quenching
58	109 to 111	Explain hardening process + tempering
59	112+113	Explain heat treatment, typical use of plain carbon steel

60	114, 115	Explain Isothermal treatment	
61	116 to 118	Explain hardening	st
62	119, 120	Explain heat treatment furnace	s
63	121	Explain alloy steel	
64	122	Describe alloying element	s
65	123, 124	Describe nickel steel	
66	125, 126	Describe construction steel	
67	127	Write note on tool & die steel	
68	128 to 130	Write note on stainless	steel
69	131	Write note on heat resisting steel	
70	132	Write note on magnetic hysteresis	sis
71	133	What are Important effects of alloying elements?	
72	134	What is surface hardening?	

73	135	What is case harden _____	ing?
74	136, 137	What is carburiz _____	ing?
75	138	What is case hardening steel _____	l?
76	139	What is heat treatment?	
77	140, 141	What is induction hardening _____	g?
78	142	Summary	
79	143 to 147	What is cast iron _____	on?
80	148	Describe the Properties of copper _____	r
81	149 to 151	Explain copper alloy	
82	153, 154	Express the method of Aluminium extraction _____	ion
83	155, 156	What are properties of aluminium?	
84	157 to 160	Explain aluminium alloy _____	
85	161	What are factors affecting the strength of aluminium? _____	
86	162	Write note on nickel	

87	163, 164	Write note on corrosion resistant a _____	lloy
88	165, 166	Write note on titaniu _____	m
89	167	Write note on magnesium a _____	lloy
90	168	Write note on bearing meta _____	
91	169	Write note on aluminium Tin Alloy	
92	170, 171	What are types plastic _____	s?
93	172	What are composition of plastics?	
94	173	What are properties of plastic _____	s?
95	174	Explain thermoplastics	
96	175	Explain vinyl plastics _____	
97	176	Explain polyethyle _____	ne
98	177	Explain polyvinyl chloride	
99	178	Explain Polyvinyl acetat _____	e
100	179 to 181	All materia _____	



			ls
101	182	Explain cellulose thermoplastic	
			s
102	183	Explain polyester	
103	184	What are high temperature thermoplastics?	
104	185, 186	What is thermoset?	
105	185	What is solid state polymer	r?
106	188 to 190	Properties	s
107	191 to 193	What are mechanical properties of plastics?	
108	194 to 197	Explain hardness test, creep	p
109	198	Explain extrusion of plastics	
110	199	Explain moulding	
111	200, 201	Explain ceramic group	roup
1123	202, 203	Explain chain type arrangement	nt
113	204	Explain sheet type arrangement	nt

114	205	Explain clays _____	
115	206	Explain fire clay _____	s
116	207	Explain heat treatment of clay product _____	s
117	209, 210	Explain aluminium oxide _____	
118	211	Explain strength of ceramic _____	s
119	212 to 214	Explain hardness, melting point _____	
120	215 to 217	Explain ceme _____	nt
121	218	Explain semi conduct _____	or
122	219, 220	Explain composition and structure of gla _____	ss
123	221	Indicate glass transition temperat _____	ure
124	222	Explain glass ceramic _____	s
125	223	Explain glass manufact _____	ure
126	224	What are properties of glass + Usag _____	e?

127	225	Explain particle composite
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128	226	What is cohesion between particles?
129	227, 228	Explain particle hardened composite
130	229	Explain mortar
131	230	Explain concrete
132	231 to 234	Explain fibre composite
133	235	Explain relative density of composite
134	236	Explain tensile strength of composite
135	237	Explain modulus of composite
136	238	Explain fibre
137	240	Explain matrix material

			ss
138	241	What are mechanical properties of unidirectional fibre composite	ss
139	242, 243	Explain joining process _____	
140	244, 245	Explain soldering & Brazing _____	
141	246	Explain brazing _____	
142	247	Explain welding _____	
143	248	Explain metallic arc welding	
144	249	Explain arc welding process _____	ss
145	250	Explain structure of weld	
146	251	Explain over stressing _____	
147	252	What is fatigue ?	
148	253	What is creep+ Sudden _____	load?
149	254	Explain expansion _____	
150	255	What is thermal cycling + degradation?	

151	256	Explain non destructive test _____	ling
154	260	What is stress corrosion?	
155	261	What are the methods of protection of metal surfaces? _____	
156	262	What is stability of plastics?	
157	263, 264	What is service of _____	life?
158	265	Describe selection of material _____	ls
159	266	Describe service requirement	
160	267	Describe tensile strength _____	h
161	268 to 271	Describe stiffness, modulus of elasticity	
162	271, 272	Describe working temperature _____	e
163	273	Describe coefficient of friction _____	ion
164	274, 275	Describe stability in the environment	
165	276 to 279	Describe electrical conductivity _____	y
166	280	Describe cost _____	ng

167	281, 282	Describe choice of shaping proce _____	ss
168	283	Describe ductilit _____	y
169	284	What are the manufacturing Processe _____	s
170	285, 286	How do you understand Toleran _____	ce?

## 11 RE012a-Electrical Engineering Part 1

### TUTORING LESSONS

[www.igytechnicalcollege.com/RE012a.zip](http://www.igytechnicalcollege.com/RE012a.zip)

#### **BAE 405**

#### **BAE405 Week 1 Lesson**

#### BAE405 Week 2 Lesson

#### BAE405 Week 3 Lesson

#### BAE405 Week 3A Lesson

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