University of Mumbai
Examination 2020 under Cluster 06
(Lead College: Vidyavardhini's College of Engg Tech)

Examinations Commencing from 7th January 2021 to 20th January 2021

Program: **Electronics Engineering**

Curriculum Scheme: Rev 2016

Examination: BE Semester VII(CBCGS)

Course Code: and Course Name: IC Technology

Time: 2 hour Max. Marks: 80

Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	MGS stands for?
Option A:	Metal Graded Silicon
Option B:	Metal Graded Sand
Option C:	Metallurgical Graded Silicon
Option D:	Mixed Graded Silicon
Q2.	Write full form of EGS ?
Option A:	Electronics Grind Sand
Option B:	Electrical Graded Silicon
Option C:	Electronically Graded Silicon
Option D:	Electrical Graded Sand
Q3.	The cell which is duplicated to form a lattice?
Option A:	unit cell
Option B:	Repeat cell
Option C:	subunit cell
Option D:	cellular cell
Q4.	Chemical used for water polishing ?
Option A:	Slurry

Option B:	H2O
Option C:	Hcl
Option D:	H2So4
Q5.	Name crystal defect from the following
Option A:	slanting defect
Option B:	Frenkel defect
Option C:	Solid defect
Option D:	Structural defect
Q6.	Name the mostly used oxidation technique ?
Option A:	Heat Oxidation
Option B:	Low Oxidation
Option C:	Thermal Oxidation
Option D:	High Oxidation
Q7.	Oxidation Process Follows ,
Option A:	Linear and Square law
Option B:	parabolic and linear law
Option C:	linear law and exponential law
Option D:	Square law
Q8.	CVD stands for ?
Option A:	Chemical velocity deposition
Option B:	Chemical vapour deposition
Option C:	Chemical vapour deviation
Option D:	Chemical velocity deviation
Q9.	The most used epitaxial method ?

Option A:	molecular Beam Epitaxy
Option B:	vapour phase Epitaxy
Option C:	liquid phase Epitaxy
Option D:	Epitaxial growth
Q10.	Damaged surface of wafer is heated by the following method ?
Option A:	Oxidation
Option B:	Diffusion
Option C:	Annealing
Option D:	Ion Implantation
Q11.	Wet and Dry types are followed in --------- process
Option A:	Diffusion
Option B:	Ion Implantation
Option C:	Wafer polishing
Option D:	Oxidation and Etching
Q12.	Source used in optical lithography ?
Option A:	Ion beam
Option B:	X ray
Option C:	Optical source
Option D:	Electron beam
Q13.	LOCOS stands for ?
Option A:	Local Silicon
Option B:	Local Surface silicon

Option C:	Local source silicon
Option D:	Local Oxidation of silicon
Q14.	In trench isolation which oxide is used ?
Option A:	SiO2
Option B:	Si
Option C:	O2
Option D:	SiSO4
Q15.	Metal used in metallization process ?
Option A:	Copper
Option B:	carbon
Option C:	Silicon
Option D:	Aluminium
Q16.	Types of masks used ?
Option A:	n+ve and n-ve
Option B:	p+ve mask and p-ve mask
Option C:	S+ve and S-ve
Option D:	m+ve and m-ve
Q17.	Two types of contacts in Layout ?
Option A:	metal and source contacts
Option B:	Butting and Burried contact
Option C:	supply and ground contacts
Option D:	+ve and -ve contacts
Q18.	This effect is used in measurement of parameters in silicon wafers ?
Option A:	Ficks effect
Option B:	Ruderford's effect

Option C:	Hall effect
Option D:	Electromagnetic effect
Q19.	SOI devices can have these two types ?
Option A:	A SOI and B SOI
Option B:	Fully isolated and Partially isolated
Option C:	Fully depleted & Partially depleted
Option D:	Wet and dry SOI
Q20.	Best suitable device below 10nm technology
Option A:	MOSFET
Option B:	CMOS
Option C:	BJT
Option D:	Nanowire

Q2 **(20 Marks Each)**	**Solve any Two out of Three 10 marks each**
A	Compare Ion Implantation and Diffusion ?
B	Explain Electron beam lithography with steps and diagram?
C	What is SOI? Explain types, advantages and applications of SOI devices?

Q3. **(20 Marks Each)**	**Solve any Two out of Three 10 marks each**
A	Explain CMOS fabrication process with neat diagrams and sketch all masks
B	Draw the stick diagram and layout of 2 input CMOS NOR gate with lambda based design rules.
C	Explain applications of carbon nanotubes and characteristics of CNTFET with diagram?