



**Muzaffarpur Institute of Technology (MIT), Muzaffarpur**

*(Under the Department of Science & Technology Govt. of Bihar, Patna)*

**Department of Electronics and Communication**

**B.Tech 3<sup>rd</sup> Semester Weekly Exam - 1, 2018**

**Solid state physics and devices**

**SET: 1**

**TIME: 20 min**

**FULL MARKS:  $10 \times 1 = 10$**

**Topic: - prerequisite knowledge for SSPD**

**NAME: \_\_\_\_\_**

**REG. NO. \_\_\_\_\_**

(1) Carrier life time is the amount of the time between the creation and disappearance of a/an

- (a) Free electron      (b) proton      (c) ion      (d) neutron

(2) How many electrons present in the outermost orbit in silicon

- (a) 1      (b) 2      (c) 3      (d) 4

(3) The maximum permissible number of electrons in the third orbit is

- (a) 18      (b) 8      (c) 32      (d) 2

(4) The reason why electrons are not pulling into the nucleus of an atom

(a) Because of the centrifugal or outward force created by their motion

(b) Because of force of attraction between them and nucleus is weak

(c) Because they are not being attracted by the positive nucleus

(d) Because of strong bonding them and they resist any forces pulling them towards the nucleus

(5) Valence orbit is the other form for

- (a) Outer orbit      (b) 3<sup>rd</sup> orbit      (c) 4<sup>th</sup> orbit      (d) 2<sup>nd</sup> orbit

(6) A semiconductor is an element with a valence of

- (a) 4      (b) 8      (c) 2      (d) 1

(7) Which orbit controls the electrical property of an atom?

- (a) Valence orbit      (b) first orbit      (c) fourth orbit      (d) M shell

(8) Silicon that has been doped with a pentavalent impurity is called a/an

- (a) N type      (b) P type      (c) intrinsic      (d) extrinsic

NUMBER OF ATTEMPTS: \_\_\_\_\_ MARKS SCORED: \_\_\_\_\_ SIGNATURE OF FACULTY \_\_\_\_\_

(9) In a p-n junction when forward bias is applied

- (a) Raises the potential barrier
- (b) Reduces the majority carrier current is zero
- (c) Lower the potential barriers
- (d) None of the above

(10) In an n type silicon, which of the following statement is true

- (a) Electrons are majority carriers and trivalent atoms are dopants.
- (b) Electrons are minority carriers and pentavalent atoms are dopants.
- (c) Holes are minority carriers and pentavalent atoms are dopants.
- (d) Holes are majority carriers and trivalent atoms are dopants.