**Balochistan Board of Intermediate and Secondary Education, Quetta**

Model Paper for HSSC Examination 2017 and Onwards

Subject: Physics Total Marks = 85 Class XII

**Section A** 16 Marks

Note: Attempt all parts:-

Q.1 (a) Choose the correct option

 i) Value of dielectric constant for vacuum is (less than one, greater than one, one, zero)

 ii) The force of a current carrying conductor is (BLxI, lLxB, B.LI ) (1)

 iii) The number of valance electrons in Ge and Si atoms are (2,3,4,5) (1)

 iv) Joule- sec is the unit of (Energy) momentum, plank’ constant, power) (1)

 v) Unit of induced emf is (Volt, Henry, Ampere, Joule)

 vi) Positron are created in process of (fission, fusion, laser, pair production)

 vii) Number of neurons in atoms ( Z-A, A-Z, ZxA, Z+A) (1)

 viii) S.I unit of conductivity is (ohm) (1)

 ix) Coulomb/volt is called (electron volt, Farad, pamper, Joule) (1)

 (b) Fill in the blanks

 1. l e v =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Joule (1)

 ii. A Ob-Junction diode is represented by a symbol\_\_\_\_\_\_\_\_\_\_\_\_\_ (1)

 iii. For pair production\_\_\_\_\_\_\_\_ MeV energy is requied. (1)

 iv. The value of plank’s constant \_\_\_\_\_\_\_\_\_\_\_ (1)

 v. The direction of induced current is determined by \_\_\_\_\_\_ law (1)

 vi. The unit of magnetic flux is\_\_\_\_\_\_\_\_\_ (1)

 vii. In carbon resistors the value of white colour is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1)

Q.2 Attempt any fourteen parts the answer to each part should not be exceed 03 to 04 lines

 Except where necessary. 14 x 3 = 42

1. Write down the formula of stokes law and define terminal velocity.
2. Differentiate electric potential energy and potential difference.
3. Why the resistance of semiconductor decrease with the increase in its temp
4. Convert 2ev into joule and 3.2x10 joule in electric volt.
5. why the wire of a heater becomes red hot when current passes through the wire.
6. Which gate is called inverter gate write down its truth table with symbol
7. Do hands in the wire effect its electrical resistance, explain ?
8. How many electron per second pass through a crass section of wire carrying a current of 0.7 ampere.
9. If then find the radios of 3rd and the orbit.
10. What are isotope write down the names o the three isotopes of hydrogen
11. How diode acts as a rectifier
12. What is the peak role of voltage and current if its rms ralice is 2v and 2 A respectively
13. Why a voltmeter always has a high resistance
14. What is the reverse process of pair production explain
15. Define non-obmic conductor draw a graph for non-abmc conductors.
16. Why does not current flow through insulator
17. A plan surface of area 25cm is inclined at an angle of 45 with an electric field of intensity700 N/C calculate the electric flux through the plane surface.
18. What do you know about paschan and balmer series.

**Section B** (18 marks)

Q. 3: Prove that E= define coulombs law (6)

Q. 4: Define steady current write down the effect of temperature on resistance also prove that (6)

Q.5: How the diodes act as a full wave rectification in case of centre tapped transformer. (6)

Q.6: What are the postulates of Einstein’s theory of relativity also prove that p (6)

Q.7: Discuss RLC series resonance circuit (6)

**Section C** (9 marks)

Note: Attempt any three problems

Q. 8: Two parallel metallic plates are connected across 24 v battery. The electric

 Intensity between them is 250. Find the distance between two plates (3)

Q. 9: Find the resistivity of copper wire 100m long and diameter of where as its resistance

 Is 0.54 ohm

Q. 10 Find the magnitude of induced emp in a conductor of 5 H in which current fall from 3 A to

 IA in 0.002 seconds (3)

Q. 11 In a certain current the transistor has a collector current of 10mA and hare current of 40

 KA what is the current gain of in transistor.

Q. 12 A sodium surface is illuminated with high of wave length 300nm the work function of sodium nelal is 2.46ev find the kinetic energy of ejected electron. (3)