**PHYSICAL SCIENCE FINAL TEST STUDY GUIDE**

**UNIT –A ( CLASSIFICATION AND PROPERTIES OF MATTER)**

1. What are the differences between pure substances and mixtures?

2. How are elements and compounds identified?

3. How are suspensions, solutions, and colloids related?

4. What are physical and chemical properties?

5. What are the differences and similarities of physical and chemical changes?

**UNIT – B ( STRUCTURE OF ATOM AND PERIODIC TABLE)**

6. What are the names and symbols of common elements?

7. What is the structure of an atom?

8. What is the electron cloud model of the atom?

9. How do you determine the atomic mass and mass number of an element?

10. What are isotopes?

11. How do you determine the average atomic mass of an element?

12. How is the periodic table organized?

**UNIT - C ( INTERACTION OF MATTER )**

13.How does a compound differ from its component elements?

14. What does a chemical formula represent?

15.How do electron dot diagrams help explain chemical bonding?

16 .Why does chemical bonding occur?

17. What are ionic and covalent bonds?

18. How are oxidation (valence) numbers determined?

19. How are formulas for ionic and covalent compounds written?

20.How are ionic and covalent compounds named?

21. What are the reactants and products in a chemical reaction?

22. Is mass conserved in a chemical reaction?

23.Why are chemical equations important?

24.How do you balance a chemical equation?

25.What are the five types of chemical reactions?

**UNIT D ( FORCE AND MOTION )**

26.How are distance and displacement different?

27.How is an object’s speed calculated?

**2016-2017**

28. What information does a distance-time graph show?

29.What is the difference between speed and velocity?

30.How are acceleration, time and velocity related?

31.How can an object’s acceleration be calculated?

32.How are force and motion related?

33.How is the net force on an object determined?

34. Why is there friction between objects?

35.What is the difference between mass and weight?

36.What is inertia and how does it relate to Newton’s first law of motion?

37.How can an object’s acceleration be calculated using Newton’s second law of motion?

38.How does Newton’s third law explain how the forces between interacting objects are related?

39.How does Newton’s first law explain what happens in a car crash?

40.How does Newton’s second law explain air resistance?

**UNIT –E ( ENERGY )**

41.What is the difference between kinetic and potential energy?

42.What are some different forms of kinetic energy?

43.How can you calculate kinetic energy (KE)?

44.What are some different forms of potential energy?

45.How can you calculate gravitational potential energy (GPE)?

46.What is the law of conservation of energy?

47.How are power and energy related?

48.What is the kinetic theory of matter?

49.How do particles behave at the boiling and melting points?

50.What is temperature?

51.How are thermal energy and temperature related?

52.What is the difference between thermal energy and heat?

53.How do you calculate changes in thermal energy?

54.What are conduction, convection, and radiation?

55.How are insulators used to control the transfer of thermal energy?

56.What is work?

57.How can work be calculated?

58.How do machines make doing work easier?

59.What are mechanical advantage and efficiency?

60.What are the six types of simple machines?

61.How do the different types of simple machines make work easier?

62. How do you calculate ideal mechanical advantage of a machine?

**UNIT F ( WAVES )**

63. How do waves transfer energy?

64. What are mechanical waves?

65. How do transverse waves differ from longitudinal waves?

66 How are wavelength and period related?

67. What is the relationship between frequency and wavelength?

67. How does a wave’s energy affect its amplitude?

68. How do you calculate the speed of a wave?

69. What is the law of reflection?

70. Why do waves change direction when they travel from onematerial to another?

71. How are refraction and diffraction different?

72. What happens when waves interfere with each other?

**UNIT – 6 ( ELECTRIC AND MAGNETISM )**

73. How do gravitational and electric forces compare?

74. What is the difference between conductors and

insulators?

75. How can objects become electrically charged?

76. How does a voltage difference produce an electric

current?

77. How do batteries produce a voltage difference in a

circuit?

78. How do series circuits differ from parallel circuits?

79. What is Ohm’s law?

80. How do moving electric charges and magnets interact?

81. What is the electromagnetic force?

82. How do an electromagnet’s properties affect the

strength of its magnetic field?

83. How does an electric motor operate?

84. What is electromagnetic induction?

85. How does a generator produce electric current?

86. What is the difference between alternating current (AC) and direct current (DC)?

87. How does a transformer change the voltage of an

alternating current?