

11th Science

Winmeen Test Sheets

Samacheer Line By Line Questions
Covered TnpSC Syllabus Portions
Lesson Wise Quick Revision
12 Lessons 1550+ Questions



Winmeen E Learning

Email: admin@winmeen.com

Mobile: 6385150514

அர்ப்பணிப்பு

அனைத்து போட்டித்தேர்வுகளுக்கும் உதவும் வகையில் உருவாக்கப்பட்ட இந்த புத்தகத்தை

போட்டித்தேர்வுக்கு பயிலும் மாணவர்களுக்காக அர்ப்பணிக்கிறோம்.

கொடுக்கப்பட்ட வினாக்களைப் பயிற்சி செய்து, நீங்கள் இந்த புத்தகத்தின் மூலம் போட்டித்தேர்வில் மிகப்

பெரிய வெற்றியடைய வாழ்த்துக்கள்.

S.No	Contents	Questions	Page No
	11th Science		
	Physics		
1	Nature of Physical World and Measurement	127	1
2	Work, Energy and Power	87	13
3	Gravitation	95	22
4	Heat and Thermodynamics	152	32
	Chemistry		
5	Environmental Chemistry	140	47
6	Chemical Bonding	92	60
	Biology		
7	Diversity of Living World	255	69
8	Plant Kingdom	157	95
9	Taxonomy and Systematic Botany	177	111
10	Basic Medical Instruments and Techniques	65	131
11	Trends in Economic Zoology	159	139
12	Scientific Names	50	154

Winmeen Self Study Course

- Online Coaching for Tnpsc Group 1, 2, 4, VAO & All TN Govt Exams.
- இண்டர்வியூ, அல்லாத குரூப் 2௭ & குரூப் 4, தேர்வுகளில் முதல் முயற்சியிலேயே வெற்றி பெற இந்த பயிற்சி மிகவும் பயனளிக்கும்.
- Samacheer Lesson Wise Daily Videos + Daily Online Test + Test Pdf With Explanation
- Life Time Subscription - Fees : 5000 Rs
- Lesson By Lesson Online Test + Complete Book Back Questions + Previously Asked One liners.
- Attend Test Online and Get Answer Key With Explanation
- Are you Ready to Spend Minimum 6 months to crack Tnpsc Exams? - Join Fast.
- Contact : +91 6385150514

11th Science Lesson 1 Questions in English

1] Nature of Physical World and Measurement

1. What is root word of science mean?

- a) To measure
- b) To know
- c) To teach
- d) To lease

2. Which of the following are involved in systematic organization of knowing science?

- 1) Observation
- 2) Experimentation
- 3) Logical reasoning

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

3. Which is the origin of the word science?

- a) Greek
- b) Rome
- c) Latin
- d) French

4. Which of the following knowledge of science deals with non-living things?

- 1) Physics
- 2) Botany
- 3) Zoology
- 4) Chemistry

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

5. When was the word science coined?

- a) 17th century
- b) 19th century
- c) 14th century
- d) 16th century

6. Assertion (A): Science is the systematic organization of knowledge through observation, experiments and logical reasoning.

Reasoning(R): The knowledge of physical science deals with the non-living and living things.

a) Both A and R is True and R is the correct explanation of A.

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

7. _____ was the earlier name given to science.

- a) Natural philosophy
- b) Natural physiology
- c) Natural Psychology
- d) Natural philanthropy

8. Who is the oldest forerunner of scientific advancements, from astronomy to medicine?

- a) Indians
- b) Egyptians
- c) Mongolians
- d) Chinese

9. Indus Valley Civilization took place in_____

- a) 3300 – 1300 BCE
- b) 3200 – 1200 BCE
- c) 3300 – 1300 AD
- d) 3200 – 1200 AD

10. Which Article of Indian constitution says it is duty of every citizen of India to develop scientific temper, humanism?

- a) 51A
- b) 50
- c) 45A
- d) 45

11. Which of the following are involved in scientific method?

- 1) Systematic observation
- 2) Controlled experimentation
- 3) Mathematical modeling

- a) 1, 2
- b) 1, 3
- c) 2, 3
- d) All the above

12. Assertion (A): When one end of the rod is heated, heat is felt at the other end.

Reason(R): In metals heat gets transferred from one end to another

- a) Both (A) and (R) are correct, but (R) does not explain (A)
- b) Both (A) and (R) are wrong
- c) Both (A) and (R) are correct and (R) explains (A)
- d) (A) is Correct and (R) is wrong

13. The name Physics was introduced by_____

- a) Einstein
- b) Galileo
- c) Newton
- d) Aristotle

14. What does the Greek word "Fusis" mean?

- a) Nature
- b) Artificial
- c) Work
- d) Manual

15. How many approaches are there in studying physics?

- a) 3
- b) 4
- c) 2
- d) 5

16. Which of the following can be explained by Newton's universal law of gravitation?

- 1) Motion of freely falling bodies towards the Earth
 - 2) Motion of planets around the Sun
 - 3) Motion of the Moon around the Earth
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

17. What is the root word of physics in Greek language?

- a) Centrica
- b) Fusis
- c) Scientia
- d) Strata

18. Which of the following is a macroscopic property?

- a) Entropy
- b) Temperature
- c) Pressure
- d) All the above

19. Which of the following statement is correct?

- 1) Physics as a fundamental science helps to uncover the laws of nature
 - 2) The language of its expression is mathematics
- a) 1 alone
 - b) 2 alone
 - c) 1, 2
 - d) None

20. Which of the following were the 1st discipline to be developed?

- 1) Astronomy
 - 2) Dynamics
 - 3) Mathematics
 - 4) Optics
- a) 1, 2
 - b) 2 alone
 - c) 1, 3
 - d) 2, 3, 4

21. Which of the following is explained by the unification approach of physics?

- a) Motion of free-falling bodies towards the Earth.
- b) Motion of planets around the Sun.
- c) Motion of Moon around the Earth.
- d) All the above

22. Under which of the following kinematics and kinetics come?

- a) Relativity
- b) Optics
- c) Acoustics
- d) Mechanics

23. Which of the following does not come under classical physics?

- a) Relativity
- b) Nuclear
- c) Optics

d) Thermodynamics

24. Relativistic and Non – relativistic comes under_____ physics

- a) Atomic
- b) Nuclear
- c) Molecular
- d) Quantum

25. Match the following

I. Classical mechanics- 1] The study of the relationship between heat and other forms of energy

II. Optics- 2] The study of forces acting on bodies whether at rest or in motion

III. Thermodynamics- 3] The study of light

- a) 2, 3, 1
- b) 2, 1, 3
- c) 1, 3, 2
- d) 3, 1, 2

26. Match the following

i. Acoustics- 1] Study of the physics of astronomical bodies

ii. Relativity- 2] The study of the production and propagation of sound waves

iii. Astrophysics- 3] One of the branches of theoretical physics which deals with the relationship between space, time and energy

- a) 1, 2, 3
- b) 2, 3, 1
- c) 2, 1, 3
- d) 3, 1, 2

27. Match the following:

i. Quantum mechanics- 1] The study of the nature of the particles

ii. Atomic physics- 2] The study of the discrete nature of phenomena at the atomic and subatomic levels.

iii. Nuclear physics- 3] The branch of physics which deals with the structure, properties and reaction of the nuclei of atoms

iv. High energy physics- 4] The branch of physics which deals with the structure and properties of the atom

- a) 2, 1, 4, 3
- b) 2, 4, 3, 1

c) 1, 2, 4, 3

d) 4, 1, 2, 3

28. Assertion (A): Magnetism was accidentally observed but the reason for this strange behavior of magnets were later analyzed theoretically

Reason(R): Discoveries in physics are of two types; accidental discoveries and well-analyzed research outcome in the laboratory

- a) Both (A) and (R) are correct, but (R) does not explain (A)
- b) Both (A) and (R) are wrong
- c) Both (A) and (R) are correct and (R) explains (A)
- d) (A) is Correct and (R) is wrong

29. Choose the incorrect statements.

i) The discoveries of physics are classified into two types as accidental discoveries and well-analyzed research in the laboratory.

ii) Magnetism was observed and analyzed theoretically and artificial magnets were prepared in the laboratories.

iii) Theoretical predictions are the important contribution of physics for the developments in technology and medicine.

- a) i only
- b) ii only
- c) iii only
- d) None of the above

30. Who experimentally proved Albert Einstein, $E=mc^2$?

- 1) Cockcroft
- 2) Newton
- 3) Walton
- a) 2 alone
- b) 1, 2
- c) 1, 3
- d) 2, 3

31. Which of the following statement is correct?

- 1) The pharmaceutical industry uses this technique very effectively to design new drugs.
- 2) Bio compatible materials for organ replacement are predicted using quantum prescriptions of physics before fabrication.
- a) 1 alone

b) 2 alone

c) 1, 2

d) None

32. Which of the following statement is incorrect?

1) Physics has a huge scope as it covers a tremendous range of magnitude of various physical quantities

2) It deals with systems of very large magnitude as in astronomical phenomena as well as those with very small magnitude involving electrons and protons

a) 1 alone

b) 2 alone

c) 1, 2

d) None

33. What is the range of astronomical scales to microscopic scales?

a) 10^{18} to 10^{-22}

b) 10^8 to 10^{-22}

c) 10^{18} to 10^{-12}

d) 10^{18} to 10^{-2}

34. What is the mass of electron?

a) 9.11×10^{-31} kg

b) 8.11×10^{-31} kg

c) 19.11×10^{-31} kg

d) 12.11×10^{-31} kg

35. What is the range of mass of known observable universe?

a) 10^{55} kg

b) 10^8 kg

c) 10^{30} kg

d) 10^{10} kg

36. Which of the following statement is correct?

1) The study of physics is not only educative but also exciting in many ways.

2) The most interesting part is the designing of useful devices based on the physical laws.

3) Carrying out new challenging experiments to unfold the secrets of nature and in verifying or falsifying the existing theories.

a) 1, 2

b) 1, 3

c) 2, 3

d) All the above

37. Which of the following statement is incorrect?

1) Technology is the application of the principles of physics for practical purposes.

2) The application of knowledge for practical purposes in various fields to invent and produce useful products or to solve problems is known as technology

a) 1 alone

b) 2 alone

c) 1, 2

d) None

38. Which have comprehensively changed the thinking and living style of human beings?

1) Microelectronics

2) Launching of satellite into space

3) Lasers

4) Superconductivity

a) 1, 2, 4

b) 2, 3, 4

c) 1, 3, 4

d) All the above

39. Which of the following basics led to the discovery of wireless communication technology?

1) Superconductivity

2) Electricity

3) Magnetism

a) 1, 2

b) 1, 3

c) 2, 3

d) 3 alone

40. Which of the following studies in physics led to enabled researchers in chemistry to arrange elements in the periodic table?

a) Structure of atom

b) X-ray diffraction

c) Radioactivity

d) All the above

41. Which of these is used to understand the structure of nucleic acids?

a) Electron microscopes

- b) Neutron diffraction technique
c) Radioactivity
d) Periodic tables
42. Which of the following statement is correct?
1) Biological studies are impossible without a microscope designed using physics principles
2) Radio-isotopes are used in radiotherapy for the cure of cancer and other diseases.
a) 1 alone
b) 2 alone
c) 1, 2
d) None
43. Which of the following statement is correct?
1) The invention of the electron microscope has made it possible to see even the structure of a cell.
2) Gamma rays are used for diagnostic purposes.
3) X-ray and neutron diffraction techniques have helped us to understand the structure of nucleic acids, which help to control vital life processes
a) 1, 2
b) 1, 3
c) 2, 3
d) All the above
44. Physics is a_____ science
a) Qualitative
b) Quantitative
c) Both a and b
d) None
45. Which of the following statement is correct?
1) Astronomical telescopes are used to study the motion of planets and other heavenly bodies in the sky
2) Radio telescopes have enabled the astronomers to observe distant points of the universe.
a) 1 alone
b) 2 alone
c) 1, 2
d) None
46. What is the usage of radio-isotopes?
a) long distance communication
b) Radio therapy for cancer and other diseases
c) Identify the distance between stars and planets
d) Analyze the sub-atomic particles
47. Which of the following ages can be estimated using radioactivity?
a) Rocks
b) Fossils
c) Age of earth
d) All the above
48. Which of the following parameters can be measured by physics and chemistry in oceanography?
1) Temperature
2) Gas fluxes
3) Current speed
a) 1, 2
b) 1, 3
c) 2, 3
d) All the above
49. Assertion (A): Physics is a quantitate science dealing with the measurement of physical quantities in numbers.
Reasoning(R): Measurement is the basis of all scientific studies and experimentation.
a) Both A and R is True and R is the correct explanation of A.
b) Both A and R is True but R is not the correct explanation of A.
c) A is True but R is False.
d) Both A and R is False.
50. Which of the following is not a physical quantity?
a) Length
b) Mass
c) Atomic number
d) Energy
51. Assertion (A): The physical quantities are classified into various types based on the field.
Reasoning(R): Fundamental and derived quantities are one of the classifications of the physical quantity.
a) Both A and R is True and R is the correct explanation of A.
b) Both A and R is True but R is not the correct explanation of A.

- c) A is True but R is False.
d) Both A and R is False.
52. Which of the following is not a fundamental or base quantity?
a) Mass
b) Time
c) Magnetic Induction
d) Electric Current
53. Which of the following statement is correct?
1) All psychological interactions can be derived from a physical process.
2) The movements of neurotransmitters are governed by the physical properties of diffusion and molecular motion
3) The functioning of our brain is related to our underlying dualism
a) 1, 2
b) 1, 3
c) 2, 3
d) All the above
54. Which of the following statement is correct?
1) Nature teaches true science with physics as an efficient tool.
2) Science and technology should be used in a balanced manner so that they do not become weapons to destroy nature which taught us science
3) Global warming and other negative impacts of technology need to be checked.
a) 1, 2
b) 2, 3
c) 1, 3
d) All the above
55. Which of the following timeline refers to the traditional or the Classical Physics?
a) After 20th century
b) 19th century
c) Before 20th century
d) After 2nd BCE
56. Which of the following branch does not belong to the Classical physics?
a) Optics
b) High energy physics
c) Acoustics
d) Astrophysics
57. What does the Atomic physics deals with,
a) Structure and reaction of the nuclei of atoms.
b) Study of the nature of the particles.
c) Study of nature of phenomena at the atomic levels.
d) Study of structures and properties of the atom.
58. Which of these are used to understand the structure of nucleic acids?
a) Neutron diffraction techniques
b) Carbon isotopes
c) Radioactive tracer techniques
d) Chromatography
59. Choose the correct statements.
i) Physics is a qualitative and comparative science.
ii) Physics is mostly related to mathematics as a tool for its development.
a) i only
b) ii only
c) Both i and ii
d) Neither i nor ii
60. Which of the following is the usage of Diffraction techniques in geology?
a) Estimate age of rocks, fossils and earth
b) Study the crystal structure of rocks
c) Study about the planets
d) Estimating the Nuclear activity
61. Which of these are measured by the Oceanographers to understand the physical and chemical process of Oceans?
a) Current speed
b) Salinity
c) Chemical components
d) All the above
62. Choose the correct statements.
i) The process of measurement is basically a process of comparison with a reference standard.
ii) The standard measure is known as the unit of the quantity.
a) i only
b) ii only

- c) Both i and ii
d) Neither i nor ii
63. Which is not a metric system?
a) fps
b) mks
c) SI
d) cgs
64. Which of the following country uses the FPS system for measurement?
a) South Asian countries
b) British Engineering systems
c) The United States customary system
d) Indian Standards
65. Which of these denotes the time measurement in the m.k.s system?
a) m
b) s
c) k
d) g
66. Which of the following is not a metric system?
a) c.g.s
b) m.k.s
c) f.p.s
d) SI
67. From which year the common metric system was used by the scientists and engineers?
a) 1935
b) 1956
c) 1960
d) 1982
68. Which of this system uses the c.g.s for measurement?
a) The Gaussian system
b) The SI system
c) The British Engineering systems
d) The United States customary systems
69. Which is the common system of units used by the scientists and engineers around the world?
a) International system
b) Metric system
c) Système International
d) All the above
70. Which of the following is not an advantage of using a SI system?
a) Uses only one unit for one physical quantity.
b) All the derived units can be easily obtained from basic units.
c) Non-coherent and Non-rational system of units.
d) The multiples and submultiples are expressed as powers of 10.
71. What is the value of triple point temperature of water?
a) 233 F
b) 0°K
c) 100°C
d) 273.16K
72. Which of the following is not a physical quantity?
a) Length
b) Mass
c) Atomic number
d) Energy
73. Which of the following is not a fundamental or base quantity?
a) Mass
b) Time
c) Magnetic Induction
d) Electric Current
74. Which of this metal is used in the prototype cylinder to define kilogram value?
a) Aluminium
b) Tin
c) Platinum Iridium alloy
d) Copper
75. Which of the following is not an advantage of using a SI system?
a) Uses only one unit for one physical quantity.
b) All the derived units can be easily obtained from basic units.
c) Used for Non-coherent and Non-rational system of units.
d) The multiples and submultiples are expressed as powers of 10.

76. What is the fraction value of thermodynamic temperature of water that defines a kelvin?

- a) $1/273.16$
- b) 35
- c) 273.16
- d) 300

77. What is the SI unit for defining the Luminous intensity?

- a) mg
- b) c
- c) cd
- d) s

78. Which of this expression defines moment of force or torque?

- a) Force x Distance
- b) Force / Area
- c) Force x Time
- d) Force / Length

79. Which of this physical quantity is expressed in tesla?

- a) Surface Tension
- b) Moment of Inertia
- c) Magnetic Induction
- d) Current Density

80. Identify the Incorrect match.

- A. Energy- i) N m
- B. Impulse- ii) N m^{-1}
- C. Current density- iii) A m^{-2}
- D. Specific Heat- iv) $\text{J kg}^{-1} \text{K}^{-1}$

- a) i only
- b) ii only
- c) iii only
- d) iv only

81. Which of this constant value defines the energy of photon per frequency?

- a) Coulomb's constant
- b) Plank's constant
- c) Gravitational constant
- d) Boltzmann constant

82. What is the value of one radian value in degrees?

- a) 57.27°

b) 180°

c) 360°

d) 60°

83. Which of these distances constitutes a macrocosm?

- a) Stars
- b) Sun
- c) Moon
- d) All the above

84. Choose the correct statements.

i) One radian is the angle subtended at the center of a circle by an arc of equal length of its circumference.

ii) One steradian is the solid angle subtended at the center of the sphere which has equal in area to the square of radius of the sphere.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

85. Which of the following distances does not fit into a microcosm?

- a) Molecules
- b) Bacteria
- c) Neutron
- d) Human organs

86. What is the value one atto in the powers of 10 ?

- a) 10^6
- b) 10^{-18}
- c) 10^{21}
- d) 10^{-6}

87. Match the Following

- A. exa- i) 10^{-24}
- B. yocto- ii) 10^{15}
- C. femto- iii) 10^{18}
- D. peta- iv) 10^{-15}

- a) iii, i, iv, ii
- b) iv, i, ii, iii
- c) i, iv, ii, iii
- d) ii, iv, i, iii

88. Choose the correct statements about Screw gauge.

i) The basic principle is magnification of linear motion using the circular motion of a screw.

ii) The least count of the screw gauge is 0.01mm

a) i only

b) ii only

c) Both i and ii

d) Neither i nor ii

89. What is the maximum measuring value of the screw gauge?

a) 0.50m

b) 50mm

c) 25mm

d) 500m

90. What is the least count of the Vernier caliper?

a) 0.01cm

b) 0.01mm

c) 0.1cm

d) 0.001m

91. Which of these methods are used to determine very large distances?

a) Triangulation method

b) Parallax method

c) Radar method

d) All the above

92. Which of this distance is measured by the parallax method?

a) Latitude and longitude distances

b) Distance between subatomic particles

c) Distance of a planet from the Earth

d) Half life time of a neutron

93. Calculate the height of a building from a point on the ground top of the building is seen to have an elevation angle of 60° and the distance between the building and point is 100m?

a) 173.2 m

b) 17.32 m

c) 1.732 m

d) 1732 m

94. Choose the correct statements.

i) RADAR denotes the radio detection and ranging methodology to measure the distance of a nearby planet.

ii) Radio waves are sent from transmitters to the distant planet and the reflection is received by the receiver.

iii) The time interval between the sent and received radio waves is used to find the distance of the planet.

a) i only

b) ii only

c) iii only

d) All the above

95. Assertion (A): The distance of the Sun from the earth is 10^{11} m.

Reasoning(R): The Moon is located at the distance of 10^8 m from the Earth.

a) Both A and R is True and R is the correct explanation of A.

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

96. What is the diameter of a Hydrogen atom?

a) 10^{21} m

b) 10^{-2} m

c) 10^{-7} m

d) 10^{-10} m

97. What is the radius of the Earth?

a) 10^{26} m

b) 10^7 m

c) 10^{15} m

d) 10^{11} m

98. Identify the Incorrect Match

A. 10^{-5} - i) Diameter of a red blood cell

B. 10^{-12} - ii) Length of a virus

C. 10^{21} - iii) Size of our galaxy

D. 10^{-15} - iv) Diameter of a proton

a) i only

b) ii only

c) iii only

d) iv only

99. Identify the correct match.

- A. Fermi- i) 10^{-12}m
- B. Micro- ii) 10^{-16}m
- C. Angstrom- iii) 10^{-11}m
- D. Nanometer- iv) 10^{-9}m

- a) i only
- b) ii only
- c) iii only
- d) iv only

100. Choose the incorrect statements.

- i) One light year is defined as the distance travelled by light in vacuum in one year.
- ii) One parsec is the distance at which an arc of length 1AU subtends an angle of 1 second of arc.
- iii) One astronomical unit is the mean distance of the Moon from the Earth.

- a) i only
- b) ii only
- c) iii only
- d) None of the above

101. Which is the largest practical unit?

- a) Astronomical unit
- b) Chandrasekhar Limit
- c) Light year
- d) Parsec

102. What is the value of the smallest practical unit?

- a) 10^{-2}s
- b) 10^{-34}g
- c) 10^{-8}s
- d) 10^{-10}m

103. Which of the following statement is not true regarding the concept of Mass?

- a) It is defined as the quantity of matter contained in a body.
- b) The SI unit of mass is kilogram (kg).
- c) Mass is a property of matter.
- d) Mass value depends on the temperature and pressure variations of the body.

104. Which of these has an order of mass as 10^2 in kg?

- a) Frog
- b) Human

c) Ship

d) A cell

105. Which of these is used to measure the small masses of atomic/ subatomic particles?

- a) Mass Spectrograph
- b) Spring Balance
- c) Electronic Balance
- d) All the above

106. Which of this atom is considered for the atomic standard of time?

- a) Tungsten
- b) Titanium
- c) Cesium
- d) Carbon

107. Match

- A. Wink of eye- i) 10^{17}s
- B. Period of X-rays- ii) 10^{-1}s
- C. Age of Universe- iii) 10^4s
- D. Time period of a satellite- iv) 10^{-19}s

- a) iii, i, ii, iv
- b) ii, iv, i, iii
- c) ii, i, iv, iii
- d) i, iv, ii, iii

108. What is the time period of a satellite?

- a) 10^9
- b) 10^{12}
- c) 10^4
- d) 10^{17}

109. Which of these events has a value of 100?

- a) Wink of an eye
- b) Time interval between two successful heart beats
- c) Travel time of light from Sun to earth
- d) Lifespan of most unstable particle

110. Which of this organization in India is responsible for maintenance and improvement of physical standards?

- a) The National Physical Laboratory
- b) Indian Physical Society
- c) National Informatics Center
- d) Center for Development of Advanced Computing

111. Which of the following factor is not related to systematic error?

- a) Reproducible
- b) Same direction errors
- c) Average value of independent errors.
- d) Persists throughout the experiment.

112. Which of these are the systematic errors?

- a) Instrumental error
- b) Random error
- c) Least count error
- d) Personal error

113. Which of these variations will effect in random errors?

- a) Pressure
- b) Temperature
- c) Voltage supply
- d) All the above

114. What is the other name for the random errors?

- a) Precise error
- b) Absolute error
- c) Chance error
- d) Average error

115. What are the sources of gross error?

- a) Carelessness of observer.
- b) Taking observations without the sources of errors and precautions.
- c) Recording wrong observations and using wrong values in calculations.
- d) All the above

116. Choose the correct statements about the systematic error.

- i) Easily detected and analyzed by the statistical methods.
 - ii) All the data is in the same direction either too high or too low.
- a) i only
 - b) ii only
 - c) Both i and ii
 - d) Neither i nor ii

117. Which is called as the arithmetic mean of absolute errors in all the measurements?

- a) Mean absolute error

b) Mean value

- c) Total error value
- d) Relative error

118. What is the range of the quantity if the true value is a_m and the mean absolute error is Δa_m ?

- a) $a_m + \Delta a_m$
- b) $a_m - \Delta a_m$
- c) $a_m + \Delta a_m$ to $a_m - \Delta a_m$
- d) $a_m / \Delta a_m$

119. What is the value of the relative error?

- a) Mean absolute error / Mean value
- b) Total error / Number of measurements
- c) Number of error value / Mean value
- d) Number of measurements * Total error value

120. Choose the Incorrect statements.

- i) Relative error expressed as a percentage is called as percentage error.
- ii) A percentage error close to infinity is good and acceptable.
- iii) The error may be due to impression of equipment or an experimentation mistake.

- a) i only
- b) ii only
- c) iii only
- d) None of the above

121. Which of these factors are combined for accurate calculation of an experiment?

- a) Errors in individual measurements.
- b) Nature of mathematical operations.
- c) Collective measurement of various quantities.
- d) All the above

122. Calculate the error percentage for the physical quantity $x = a^2b^5 \sqrt{cd}$, if the percentage error in measurement of a, b, c, d are 4%, 7%, 2% and 0.5%?

- a) 13%
- b) 8.5%
- c) 5%
- d) 2.5%

123. State the number of significant figures for the value 6.73×10^5

- a) 3
- b) 5

- c) 4
 - d) 2
124. Which of the following is not an independent base physical quantity?
- a) M
 - b) S
 - c) L
 - d) T

125. Which of this quantity has the dimensional formula as LT^{-2} ?
- a) Volume
 - b) Density
 - c) Force
 - d) Acceleration

126. Match the following.
- A. Dimensional Constant- i) Refractive index

- B. Dimensionless Variables - ii) Acceleration
 - C. Dimensionless Constant - iii) Gravitational constant
 - D. Dimensional Variables- iv) Euler's number
- a) iii, i, iv, ii
 - b) ii, i, iv, iii
 - c) iv, iii, ii, i
 - d) iii, ii, i, iv

127. Which of these is not an application of the method of dimensional analysis?
- a) Convert a physical quantity from one system of units to another.
 - b) Convert a vector quantity to scalar.
 - c) Establish relations among various physical quantities.
 - d) Check the dimensional correctness of a physical equation.

1. Nature of physical world and Measurement																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	D	C	C	B	C	A	B	A	A	D	C	D	A	C	D	B	D	C	C
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	D	B	D	A	B	B	C	B	C	C	D	A	A	A	D	D	C	C	D
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
B	C	B	B	C	B	D	D	A	C	D	C	D	C	C	B	D	A	B	B
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
D	C	A	B	B	C	C	A	D	C	D	C	C	C	C	A	C	A	C	B
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
B	A	D	B	D	B	A	C	B	A	D	C	A	D	A	D	B	B	D	C
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
B	C	D	B	A	C	B	C	B	A	C	B	D	C	D	B	A	C	A	B
121	122	123	124	125	126	127													
D	A	A	B	D	A	A													

11th Science Lesson 2 Questions in English

2] Work, Energy And Power

1. Assertion (A): Physics defines work as the work done by a force when applied on a body.

Reasoning(R): Work refers to both physical and mental work.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True but R is False.
- d) Both A and R is False.

2. Choose the Incorrect statements.

- i) Energy is defined as the ability to do work.
- ii) Work and energy are not same in definition and dimensions.
- iii) Energy exists in various forms as Electrical, Thermal and Mechanical and so on.

- a) i only
- b) ii only
- c) iii only
- d) None of the above

3. Assertion (A): Work is a scalar quantity which has only magnitude and no direction.

Reasoning(R): The scalar product of two vectors is a scalar.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True but R is False.
- d) Both A and R is False.

4. What is the dimensional formula of work done on an object?

- a) MT^{-1}
- b) $ML^{-2}T$
- c) ML^2T^{-2}
- d) ML^2T^{-2}

5. The angle value of the work is calculated between the force and ____.

- a) Velocity
- b) Equilibrium position

- c) Displacement
- d) Center point

6. Which of this value is not related to the work done on an object?

- a) Force
- b) Angular momentum
- c) Displacement
- d) Angle between force and displacement

7. In which of the following cases the work done may not be zero?

- a) Ideal situation
- b) Zero displacement
- c) Minimum gravity
- d) Force value is zero

8. Which of this force does no work on a body if it moves in a horizontal direction?

- a) Elastic force
- b) Gravitational force
- c) Electrostatic force
- d) All the above

9. Choose the incorrect statements.

- i) The value of displacement by a given force to the body decides the work done.
- ii) The goal keeper catching a ball towards him is an example of negative work.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

10. A cart is pulled with a force of 50 N to produce a displacement of 25 m. If the angle between the force and displacement is 45° , find the work done by the force.

- a) 883.86 J
- b) 280.45 N
- c) 885.86 J/ s
- d) 581.72 J

11. Match.

AngleWork

- A. 180° - i) Positive
 B. $0 < \theta < 90^\circ$ - ii) Zero
 C. 0° - iii) Maximum negative
 D. 90° - iv) Maximum positive

- a) i, iv, iii, ii
 b) iii, i, iv, ii
 c) ii, i, iv, iii
 d) iv, i, iii, ii

12. What is the value of angle between the force and displacement if an object is thrown upwards from the ground?

- a) 0°
 b) 90°
 c) 180°
 d) $< 90^\circ$

13. Calculate the work done by the gravity when a weight lifter lifts a mass of 250 kg with a force 5000 N to the height of 5 m.

- a) -12.5k J
 b) 0 J
 c) 12.5 k J
 d) 50 J

14. State the component of variable force F acting on a body to do a small work dW?

- a) $F \cos \theta$
 b) $F \, dr$
 c) $F \tan \theta$
 d) F

15. Which of the following is not true regarding energy and work?

- a) The capacity to do work is defined as the energy.
 b) The dimension of the energy is $ML^{-2} T^2$
 c) Work and Energy have the same dimension.
 d) Work done on an object is the manifestation of energy.

16. Which of the following statements are not true?

- a) For an isolated system the sum of all forms of energy is same.
 b) The internal changes will affect the total energy of an isolated system.
 c) Energy disappearing in one form will appear in another form.

d) Law of conservation energy defines for an isolated system.

17. Choose the Incorrect statements.

- i) The Frictional forces are classified into two types as Kinetic and Potential energy.
 ii) Kinetic energy is the energy possessed by a body due to its motion.
 iii) The energy possessed by the body by virtue of its position is known as potential energy.

- a) i only
 b) ii only
 c) iii only
 d) None of the above

18. What is the SI unit of the energy?

- a) N m
 b) J/ s
 c) $N \, m^{-1}$
 d) $J \, s^{-2}$

19. Match

- A. 1 electron volt- i) 4.186 J
 B. 1 erg- ii) $1.6 \times 10^{-19} J$
 C. 1 kilowatt hour- iii) $10^{-7} J$
 D. 1 calorie- iv) $3.6 \times 10^6 J$

- a) iv, iii, i, ii
 b) i, iv, ii, iii
 c) ii, iii, iv, i
 d) iii, i, ii, iv

20. Assertion (A): Kinetic energy is the energy possessed by a body by virtue of its motion.

Reasoning(R): All moving objects have kinetic energy.

- a) Both A and R is True and R is the correct explanation of A.
 b) Both A and R is True but R is not the correct explanation of A.
 c) A is True but R is False.
 d) Both A and R is False.

21. Which of the values are dependent on the Kinetic energy of a body?

- a) Mass of the body
 b) Magnitude of velocity
 c) Potential energy

d) Both a and b

22. What is the expression for a constant force?

a) $F = ma$

b) $F = -dv/dt$

c) $F = g dx$

d) $F = \frac{1}{2} mv^2$

23. State the expression for the kinetic energy with mass m and velocity v .

a) $KE = \frac{1}{2} mv^2$

b) $KE = mv^2$

c) $KE = ma$

d) $KE = \frac{1}{4} mv$

24. Choose the correct statements.

i) The value of the Kinetic energy is always negative.

ii) The Kinetic energy is changed by the work done on the body.

a) i only

b) ii only

c) Both i and ii

d) Neither i nor ii

25. Which of these are implied from the work-kinetic energy theorem?

a) The Kinetic energy is decreases if the work done by the force on the body is positive

b) The Kinetic energy is increased if the work done by force is negative.

c) No work done by the force on the body no change in the kinetic energy.

d) Body moving at a constant speed provides a variable mass.

26. Assertion (A): The magnitude of the momentum is only calculated from the kinetic energy and the mass of the object.

Reasoning (R): The Kinetic energy and the mass are the scalars.

a) Both A and R is True and R is the correct explanation of A.

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

27. Which of these factors is associated with the potential energy of a body?

a) Position and configuration

b) Gravity

c) Atomic structure

d) Mass

28. Which of the following statement is not true regarding the work-kinetic energy theorem?

a) Work done by the force is positive then the kinetic energy is increased.

b) The Kinetic energy is decreased if the work done by the force is negative.

c) If no work is done on the body then no change in its potential energy.

d) The body has a constant speed if its mass remains constant.

29. Which of these is not a type of the potential energy?

a) Gravitational potential energy

b) Electrostatic potential energy

c) Angular potential energy

d) Elastic potential energy

30. Which of this value is constant in calculating the gravitational potential energy?

a) Velocity

b) Momentum

c) Work

d) Force

31. What is the value of the gravitational potential energy?

a) $U = m g h$

b) $U = ma$

c) $U = \frac{1}{2} mv$

d) $U = v^2$

32. Assertion (A): Potential energy stored in an object is defined by the work done by the external positive force.

Reasoning(R): The external force transfers the energy to the object as potential energy.

a) Both A and R is True and R is the correct explanation of A.

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

33. How can an object move with zero acceleration (constant velocity) when the external force is acting on the object?

- a) Exact opposite force is applied externally to cancel each other.
- b) When the acceleration of the external force is doubled.
- c) When the object is allowed in a vacuum space.
- d) If the gravitational force acting is at maximum value.

34. Which of this value is kept as a constant value when defining the potential energy?

- a) Energy
- b) Acceleration
- c) Velocity
- d) Gravity force

35. Choose the Incorrect statements.

- i) A restoring force is developed in a spring when it is elongated.
- ii) The Kinetic energy possessed by a spring due to deforming force is termed as elastic potential energy.
- iii) The work done against the restoring force of a spring is stored as elastic potential energy.

- a) i only
- b) ii only
- c) iii only
- d) None of the above

36. What is the sign of the restoring force developed in a spring?

- a) Positive
- b) Null
- c) Negative
- d) None of the above

37. Which of this value is dependent on the spring force?

- a) Displacement
- b) Mass
- c) Material
- d) All the above

38. Choose the correct statements.

- i) The applied force and the displacement in the spring action are opposite to each other.

ii) The initial position of the spring is taken as the equilibrium position or mean position.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

39. To which of these values the potential energy of the spring does not depend?

- a) Mass
- b) Velocity
- c) Displacement
- d) All the above

40. Which of the value can be calculated by the Force-displacement graph?

- a) Linear momentum
- b) Elastic potential energy
- c) Kinetic energy
- d) Mass of the spring

41. What is the value of the energy of the spring in a frictionless environment?

- a) Constant
- b) Null
- c) Infinity
- d) Unity

42. Which of the value is dependent on the work done for a conservative force?

- a) Initial and final positions of the body.
- b) Initial and final velocity of the body.
- c) Path followed by the Initial and final positions.
- d) All the above

43. What is the value of the conservative force?

- a) Positive gradient of the Potential energy.
- b) Negative gradient of the Kinetic energy.
- c) Negative gradient of the Potential energy.
- d) Positive gradient of the gravitational energy.

44. Which of the following is not a frictional force?

- a) Elastic spring force
- b) Frictional force
- c) Magnetic force
- d) Gravitational force

45. A Conservative force is,

- i) Work done is independent of the path.
 ii) Work done in a round trip is not zero.
 iii) Completely recoverable work done.
 iv) Total energy is dissipated as heat.
- a) i, ii, iv only
 b) ii, iii, iv only
 c) i, iii only
 d) ii, iv only
46. Which of the following is not true regarding the Non-conservative forces?
- a) Work done is completely recoverable.
 b) Work done in a round trip is not zero.
 c) Work done depends upon the path.
 d) Energy dissipated as heat energy.
47. Which of this force is the negative gradient of the potential energy?
- a) Conservative forces
 b) Non-conservative forces
 c) Both a and b
 d) Neither a nor b
48. To which of this value the work done is dependent for a non-conservative force?
- a) Potential energy of the body
 b) Initial velocity of the body
 c) Path between the initial and final positions.
 d) Total energy dissipated.
49. Which of the forces are classified as non-conservative forces?
- a) Frictional forces
 b) Air resistance force
 c) Viscous force
 d) All the above
50. Which of the energy is at highest point of an object thrown upwards?
- a) Potential energy
 b) Gravitational energy
 c) Kinetic energy
 d) None of the above
51. What is the intermediate point value of an object falling from a height?
- a) Potential energy

- b) Both Kinetic and Potential energy
 c) Kinetic energy
 d) Null
52. Choose the Incorrect statements.
- i) When an object reaches the ground from a height kinetic energy is stored as work done.
 ii) The energy transformation takes place at every point of travel from a height to ground.
 iii) By the law of conservation of energy the total mechanical energy remains constant.
- a) i only
 b) ii only
 c) iii only
 d) None of the above
53. What is the value of the total energy of an isolated system by the law of conservation?
- a) Constant
 b) Zero
 c) Maximum
 d) Minimum
54. Which of the following is not related to power?
- a) Power is the rate of work done or energy delivered.
 b) Power is the ratio of the work done and the time taken.
 c) Power is not an important factor of a moving object.
 d) Power is a measure of how fast or slow a work is done.
55. The average power is the ratio between total work done to the total _____.
- a) Displacement
 b) Energy
 c) Time
 d) None of the above
56. What is the value of the instantaneous power?
- a) $P_{inst} = dV/dt$
 b) $P_{inst} = dW/dt$
 c) $P_{inst} = dM/dt$
 d) $P_{inst} = dA/dt$
57. Choose the correct statements.
- i) Power is a vector quantity.

ii) The dimension of power is $ML^{-2}T^{-3}$

iii) The SI unit of power is watt (W).

- a) i only
- b) ii only
- c) iii only
- d) All the above

58. Which of this value is not a higher unit of energy?

- a) Kilowatt
- b) Megawatt
- c) Watt / hour
- d) Gigawatt

59. How many watts power is equal to one horse power?

- a) 500 W
- b) 746 W
- c) 250 W
- d) 460 W

60. In which of this unit the electrical energy is measured?

- a) Joule
- b) Watt hour
- c) Kilowatt hour
- d) Joule / second

61. Calculate the energy consumed in electrical units when a 50 W fan is used for 5 hours daily for one month (30 days).

- a) 12
- b) 12000
- c) 120
- d) 24k

62. Match

- A. LED- i) 1000hours
- B. Incandescent lamps- ii) 6000 hours
- C. CFL- iii) 50000 hours

- a) iii, i, ii
- b) ii, iii, i
- c) i, iii, ii
- d) ii, i, iii

63. Choose the correct statements.

i) A Collision can happen only between two bodies with physical contacts.

ii) Carom boards, Billiards and Marbles are example for collision.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

64. Which of this factor is changed during a collision time?

- a) Momentum
- b) Mass
- c) Angular displacement
- d) Structure

65. Which of the following is used to find the total momentum in collision?

- a) Vector addition
- b) Scalar subtraction
- c) Vector multiplication
- d) Scalar addition

66. Choose the correct statements.

i) The Total linear momentum, total energy and the total kinetic energy are always conserved in a collision process.

ii) The whole kinetic energy is transformed to other forms of energy after a collision.

- a) i only
- b) ii only
- c) Both I and ii
- d) Neither i nor ii

67. How many types of collision are classified?

- a) 5
- b) 3
- c) 2
- d) 4

68. What is the condition required for an elastic collision?

- a) The total kinetic energy before and after collision are equal.
- b) The total kinetic energy before the collision is less than the kinetic energy after collision.

c) The total kinetic energy before and after collision are equal to infinity.

d) The total kinetic energy before the collision is less than the kinetic energy after collision.

69. Choose the incorrect statements.

i) In an inelastic collision the total kinetic energy of the bodies is not equal to the total kinetic energy of the bodies.

ii) Both the total energy and the kinetic energy and the losses are conserved in a inelastic collision.

a) i only

b) ii only

c) Both i and ii

d) Neither i nor ii

70. Which of the following is known as complete or perfect inelastic collision?

a) The Total energy before and after collision is equal to zero.

b) If the total kinetic energy is transferred to another form of energy.

c) If two colliding bodies stick together after collision.

d) The Total energy is equal to the loss in kinetic energy after collision.

71. Which of the following is not true regarding the Elastic collision?

a) Total momentum is conserved.

b) Conservative forces are involved.

c) Total Kinetic energy is not conserved.

d) Mechanical energy is not dissipated.

72. Choose the correct statements regarding the Inelastic collision.

i) Non-conservative forces are involved.

ii) Mechanical energy is not dissipated.

iii) Total kinetic energy is conserved.

a) i only

b) ii only

c) iii only

d) All the above

73. What is the dimension of the coefficient of restitution?

a) m

b) s

c) No dimension

d) f

74. Which of this relative factor is accounted for calculating the Coefficient of restitution?

a) Velocity

b) Mass

c) Momentum

d) Acceleration

75. Choose the correct statements.

i) In ideal condition the value of restitution coefficient is equal to zero.

ii) In any real collision both the potential and kinetic energy have some losses.

iii) If the velocity separation is zero after a collision then the value of coefficient of restitution is also zero.

a) i only

b) ii only

c) iii only

d) All the above

76. What is the range of the restitution coefficient value of a material?

a) $0 < e < 1$

b) $-1 < e < 1$

c) $0 < e < 10$

d) $0 < e < \infty$

77. At which of these conditions the work done will be negative?

a) $\theta = 90^\circ$

b) $\cos \theta = 1$

c) $90^\circ < \theta < 180^\circ$

d) $\theta = 180^\circ$

78. Calculate the work done by the gravitational force on a 5kg object falls from a height of 10 m to the ground if $g = 10 \text{ ms}^{-2}$.

a) 500J

b) 100J/kg

c) 50 J

d) 10J

79. Which of the following statements is correct with respect to the Kinetic energy?

a) Mass and Kinetic energy is not enough to calculate the magnitude of momentum.

b) Kinetic energy is a vector.

c) Direction of momentum can be found by using Kinetic energy.

d) Mass And Kinetic energy are scalar quantities.

80. Two objects of different mass have same momentum then,

a) The Kinetic energy of both masses is same.

b) The Kinetic energy is inversely proportional to the mass.

c) Two objects will have same speed.

d) The kinetic energy of smaller mass will have less kinetic energy.

81. Calculate the potential energy stored in the object of mass 20 kg is taken to a height 15 m from the ground $g=10\text{ms}^{-2}$.

a) 30J

b) 3000J

c) 200J

d) 1500J

82. At which of these given positions the Kinetic energy and potential energy will be equal for a spring in a frictionless environment?

a) Initial position

b) Peak position

c) Mean position

d) All the above

83. In which spring more work has to be done if they are stretched by the same force if the two springs A and B be such that Kinetic energy of A is greater than B?

a) More work is done on B than A.

b) No work is done on A and B.

c) Equal work is done in both A and B.

d) Less work is done on B than A.

84. What is the value of work done by an applied force to the spring attached to the body of mass m elongated from its equilibrium position?

a) Maximum

b) Negative

c) Zero

d) Minimum

85. Calculate the total energy of an object of mass 10 kg is falling from the height $h = 5$ m if $g = 10 \text{ ms}^{-2}$.

a) 0 J

b) 500 J

c) 5 J

d) 100J

86. Choose the correct statement.

i) Electricity bills are generated in units of kWh.

ii) One unit of electrical energy is 100 kWh.

iii) kWh is the unit of power.

a) i only

b) ii only

c) iii only

d) None of the above

87. Which of these are produced due to the impact of collisions?

a) Heat

b) Sound

c) Light

d) All the above

2. Work, Energy, Power

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	B	A	C	C	B	C	B	A	A	B	C	A	A	B	B	A	A	C	A
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
D	A	A	B	C	A	A	C	C	A	A	A	A	C	B	C	A	B	A	B
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A	A	C	B	C	A	A	C	D	A	B	A	A	C	C	B	C	C	B	C
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80

A	A	B	A	A	D	C	A	B	C	C	A	C	A	C	A	C	A	D	B
81	82	83	84	85	86	87													
B	C	A	B	B	A	D													