SECTION I
ENGLISH (QUESTION 1-20)

Synonyms:
Choose the lettered word that is most nearly same in meaning to the word printed in bold letters at top.

1. Banish
   a) Recall
   b) Black List
   c) Digest
   d) Exonerate

2. Eradicate
   a) Improve
   b) Remove
   c) Discover
   d) Announce

3. Hallucination
   a) Fantasy
   b) Devouring
   c) Mispronunciation
   d) Melodious

4. Immaculate
   a) Flawless
   b) Contaminated
   c) Juvenile
   d) Infinite

5. Labyrinth
   a) Confusion
   b) Model
   c) Muze
   d) Complicated path

Analogy Test:
I. “A” is defining characteristic of “B”
6. Condemnation: Disapproval
   a) Ignorance: patience
   b) Optimism: insight
   c) Humor: Comedian
   d) Sorrow: intention

II. “A” is spurious/defective form of “B”
7. Mumble: Speak
   a) Adorn: denude
   b) Inflame: damage
c) Delimit: expand
d) Plagiarize: write

III. “A” is the same thing as “B” but more extreme
8. Drizzle: Pour
   a) Speak: shout
   b) Forget: learn
   c) Consider: formulate
   d) Sense: Flourish

IV. “A” is a sign of “B”
9. Yawn: boredom
   a) Smile: hatred
   b) Blink: nausea
   c) Sigh: hope
   d) Wince: pain

V. “A” is the study of “B”
10. Botany: plants
    a) Agriculture: herbs
    b) Astronomy: stars
    c) Philosophy: books
    d) Anthropology: religion

Sentence Completion:
11. Death is preferable …………. dishonor.
    a) Than
    b) To
    c) From
    d) Of

12. Urge people who smoke, to ……………the habit.
    a) Surrender
    b) Abandon
    c) Discontinue
    d) Desert

13. It is ………………..to steal
    a) Sinful
    b) Corrupt
    c) Immoral
    d) Wicked

14. The union leader tried to calm down the………..workers.
    a) Turbid
    b) Turgid
    c) Torpid
    d) Turbulent

15. So many servants attended …………….him during his illness.
    a) On
b) At  
c) With  
d) Upon

**Reading comprehension:**

16. Pipes may be painted to keep them from getting oxidized.  
a) Misplaced  
b) Soaked  
c) Rusty  
d) Frozen

17. Sharks must swim all the time to avoid drowning.  
a) Swiftly  
b) Rarely  
c) Precisely  
d) Constantly

18. As soon as the board of elections promulgates, the list of candidates, a ballot is prepared  
a) Informally discusses  
b) Quickly contacts  
c) Officially declares  
d) Critically reviews

19. Rahim had a reputation for being a prudent businessman.  
a) Clever  
b) Wealthy  
c) Careful  
d) Dishonest

20. Keep two pencils handy while taking the examination.  
a) Extra  
b) Secret  
c) Near  
d) Sharp

**SECTION II**

**SUBJECT BASED (QUESTION 21-100)**

21. One important source of Vitamin C is citrus fruit. Vitamin C is:  
a) Ascorbic acid  
b) Citric acid  
c) Salicylic acid  
d) Tricarboxylic acid

22. If you are making soaps and detergents from scratch, one of your starting ingredients will be:
23. Ionic bonds always form between metals and _________.
   a) Nonmetals
   b) Metals
   c) Metalloids
   d) All of above

24. When electrons cannot be gained or lost, they are _________.
   a) Transferred
   b) Shared
   c) Lost
   d) Combined

25. Three states of matter are _________.
   a) Density, volume and weight
   b) Solid, liquid, and gas
   c) Water, metal and gases
   d) All of the above

26. The odour of Ethanoic acid resembles with,
   a) Tomato juice
   b) Kerosene
   c) Orange juice
   d) Vinegar

27. What is the IUPAC name for the following compound?
   \[
   \begin{align*}
   \text{CH}_3 & \quad \text{CH}_3 \\
   \text{CH}_3 & \quad \text{C} - \text{H} \\
   \text{CH}_3 & \quad \text{CH}_3 \\
   \end{align*}
   \]
   a) 1,3-pentamethylpropane
   b) 1,1,3,3-tetramethylbutane
   c) 2,4,4-trimethylpentane
   d) 2,2,4-trimethylpentane

28. The mixture of common salt and sand can be separated by,
   a) Evaporation
   b) Sedimentation followed by decantation
   c) first dissolving in water followed by filtration and crystallization
   d) Dissolution in water, followed by crystallization

29. Which is not a pure substance?
a) Helium  
b) Copper wire  
c) Air  
d) Sucrose

30. $\text{O}_2$ and $\text{O}_3$ molecules are  
a) Allotropes  
b) Structural isomers  
c) Isotopes  
d) Geometrical isomer

31. Increasing energy of light goes in the order  
a) Ultraviolet, visible, infrared.  
b) Visible, infrared, ultraviolet.  
c) Infrared, visible, ultraviolet.  
d) Ultraviolet, infrared, visible

32. Argon, which comprises almost 1% of the atmosphere, is approximately 27 times more abundant than $\text{CO}_2$, but doesn't contribute to global warming. Which explanation accounts for this fact?  
a) Single atoms do not vibrate.  
b) Argon’s vibrational energy is not excited by infrared radiation.  
c) The mass of argon does not allow it to reach sufficiently high in the atmosphere to interact with the earth’s radiant energy  
d) Argon is transparent to UV radiation

33. A gasoline’s octane rating is  
a) A measure of the gasoline’s resistance to causing knocking in a vehicle’s engine.  
b) A measure of the pollutants produced by burning the gasoline in a vehicle’s engine.  
c) A measure of the energy content of the gasoline; the higher the rating, the better the gas mileage.  
d) A measure of the purity of the gasoline; the higher the rating the smaller the number of components in the mixture.

34. In an exothermic chemical reaction  
a) The mass of the products is greater than the mass of the reactants  
b) The mass of the products is less than the mass of the reactants  
c) Heat is released as the reaction proceeds  
d) Heat is absorbed as the reaction proceeds

35. Petroleum (crude oil) is a complex mixture of thousands of substances, the majority of which are:  
a) Hydrocarbons  
b) Natural gases
c) Complex carbohydrates  
d) Cellulose-based substances

36. What is the molarity of sodium chloride in a solution containing 0.50 mol of sodium chloride in 500 mL of water?
   a) 0.25 M  
   b) 0.50 M  
   c) 1.0 M  
   d) 5.0 M

37. Which of these is *not* a trihalomethane?
   a) CHCl₃  
   b) CHBr₂Cl  
   c) CHF₃  
   d) CH₂Cl

38. Which naturally occurring radioactive particles are negatively charged?
   a) Alpha particles  
   b) Beta particles  
   c) Gamma radiation  
   d) Neutrons

39. If you have 200.0 g of radioisotope with a half-life of 5 days, how much isotope would remain after 15 days?
   a) 12.5 g  
   b) 13.3 g  
   c) 25.0 g  
   d) 40.0 g

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42. Which type of widely used battery is *not* rechargeable?
   a) Alkaline  
   b) Lithium-ion  
   c) Lead-acid (storage batteries)  
   d) Nickel-cadmium (NiCad)
43. Chemical energy is converted directly into electrical energy in
   a) A battery
   b) An electrical power plant
   c) An electrolytic cell
   d) An automobile’s engine

44. Which is the hardest natural substance known today
   a) Graphite
   b) Iron
   c) Steel
   d) Diamond

45. What is the chemical composition of Diamond?
   a) Phosphorous
   b) Steel
   c) Carbon
   d) Nitrogen and Oxygen

46. In northern hemisphere, summer solstices occur during________.
   a) 21st, 22nd June
   b) 21st, 22nd December
   c) 22nd, 23rd March
   d) 22nd, 23rd September

47. What parts of the Earth have the most biologically diverse ecosystems, containing 50 to 90 percent of the world's plant and animal species _________.
   a) Oceans
   b) Deserts
   c) Rain forests
   d) Mountains

48. A particular geographical area where all the plants, animals and decomposers interact with one another, make up___________.
   a) Population
   b) Community
   c) Species
   d) Ecosystem

49. Is ozone good or bad?
   a) Always good.
   b) Always bad.
   c) Good in the upper atmosphere, bad at ground level
   d) Bad in the upper atmosphere, good at ground level.

50. The lowest layer of the atmosphere where different weather phenomena observe is the _________.
   a) Mesosphere
b) Troposphere  
c) Thermosphere  
d) Stratosphere  

51. The coldest layer of the atmosphere is the ____________.
   a) Thermosphere  
b) Troposphere  
c) Stratosphere  
d) Mesosphere  

52. Latitude measures ________.
   a) Angular distance east and west of the Prime Meridian  
b) Distance in miles east and west of the Prime Meridian  
c) Angular distance east and west of the Equator  
d) Angular distance north and south of the Equator  
e) Distance in kilometers north and south of the Equator  

53. We measure longitudes up to ________ degrees.
   a) 360  
b) 180  
c) 0  
d) 145  
e) 90  

54. Carbon dioxide (CO₂)
   a) is not present in the troposphere  
b) is produced by green plants during photosynthesis  
c) absorbs long-wave terrestrial radiation  
d) is decreasing in concentration in the atmosphere  

c) absorbs long-wave terrestrial radiation  

55. Where do temperatures normally decrease with altitude?
   a) in the stratosphere  
b) in the thermosphere  
c) in the troposphere  
d) in the tropopause  
e) none of the above  

56. The ozone layer in the stratosphere is critical to life because
   a) Ozone provides oxygen for animals to breathe  
b) Ozone absorbs long wave terrestrial radiation, to help keep the atmosphere warm  
c) Ozone absorbs ultraviolet light  
d) Ozone is an essential element for organisms  

c) Ozone absorbs ultraviolet light  

c) Ozone absorbs ultraviolet light  

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c) Ozone absorbs ultraviolet light  

c) Ozone absorbs ultraviolet light  

57. Which of the following electromagnetic wavelengths are the longest?
   a) Radio waves  
b) X rays  
c) Visible light  
d) Infrared light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

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c) Visible light  

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c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

c) Visible light  

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c) Visible light  

58. The Earth's axis is inclined approximately ________ degrees from the perpendicular to the Plane of the Ecliptic.
59. Two gases, oxygen and ________, make up 99% of the volume of dry, clean air.
   a) Nitrogen
   b) Water vapor
   c) Carbon dioxide
   d) Argon

60. The absorption and release of water by plants and trees is known as______.
   a) Runoff
   b) Infiltration
   c) Evapotranspiration

61. An aggregate of mineral is best described by the term___________.
   a) Rock
   b) Element
   c) Compound
   d) Soil

62. The ability of the earth (or a system) to sustain a population in an acceptable standard
   of living is known as _____________.
   a) Carrying capacity.
   b) Ecological maintenance.
   c) Ecological balance.
   d) Comfort capacity

63. The term Big Bang refers to the formation of the
   a) Solar system.
   b) Earth.
   c) Universe.
   d) Sun.

64. A volcano that has no recent eruptive history and appears extensively eroded is
categorized as _____________.
   a) Inactive.
   b) Passive.
   c) Dormant.
   d) Extinct

65. Which of the following alternate energy resource is not considered a renewable energy
   resource?
   a) Solar energy
   b) Tidal energy
   c) Wind energy
   d) Nuclear energy
66. Soil erosion is an important topic because it can _____________.
   a) Increase in rate during droughts  
   b) Result in topsoil loss  
   c) Increase unwanted sediment deposition elsewhere  
   d) All of the above

67. The biome found near equator are_____________.
   a) Tropical rain forest  
   b) Temperate deciduous forest  
   c) Alpine forest  
   d) Coniferous forest

68. A tectonic plate is________.  
   a) A piece of crust floating on the mantle  
   b) A continent  
   c) A piece of land floating in the sea  
   d) An ice sheet on the north pole

69. Which of the following is the thinnest Earth shell?  
   a) Mantle  
   b) Inner core  
   c) Outer core  
   d) Crust

70. From the center of the Earth outward, what are the three layers of Earth?  
   a) core - crust - mantle  
   b) core - mantle - crust  
   c) crust - mantle - core  
   d) mantle - crust - core

71. The movement of water from cell to cell via plasmadesmata is called:  
   a) Symplastic  
   b) Transmembrane  
   c) Apoplastic  
   d) Facilitated  
   e) None of these

72. In maize plant, the CO₂ fixation mechanism is called:  
   a) C3 pathway  
   b) C4 pathway  
   c) CAM pathway  
   d) C3 – C4 intermediate  
   e) None of these

73. Salt-loving plants are known as:  
   a) Glycophytes  
   b) Halophytes
c) Xerophytes
d) Mesophytes
e) None of these

74. With the addition of solution to a liquid system, the water potential of the system:
a) Increases
b) Decreases
c) Remains stable
d) Remains variable
e) None of these

75. The conversion of pyruvate into acetyl CO₂ is called:
a) Glycolysis
b) Fermentation
c) Oxidative carboxylation
d) B-Oxidation
e) None of these

76. The stage of meiosis in which pairing of homologous chromosomes starts is called:
a) Leptotene
b) Zygotene
c) Diplotene
d) Pachytene
e) None of these

77. The site of chromosome on which a gene is located is called:
a) Allele
b) Locus
c) Site
d) Trait

78. Lamarck’s theory of evolution was published in:
a) 1807
b) 1808
c) 1809
d) 1810
(e) None of these

79. The book “Origin of Species” was written by:
a) Linnaeus
b) Lamarck
c) Mendel
d) Darwin
e) None of these

80. The actual location or place where an organism lives is called:
a) Habitat  
b) Ecosystem  
c) Niche  
d) Biome  
e) None of these

81. The organisms swimming on the surface of water are called  
a) Plankton  
b) Nekton  
c) Neuston  
d) Periphyton

82. The total area of the world covered by Forest is  
a) 30%  
b) 60%  
c) 40%  
d) 20%

83. The Pothohar area mainly serve as  
a) Wood land  
b) Range land  
c) Animal reserve  
d) Recreational area

84. Confer trees are mostly  
a) Monoaocious  
b) Diaceous  
c) Monocot  
d) Non woody

85. The tallest trees of the world are found in  
a) Tropical forest  
b) Red wood forests  
c) Yellow stone forests  
d) Savannas

86. Prunning means cutting trees at  
a) The bottom  
b) At the top  
c) Form the roots  
d) At 10 feet height

87. Thinning means removing  
a) Trees of the same species  
b) Weeds  
c) Herbs  
d) Shrubs
88. Forests are also called the
   a) Lungs of atmosphere
   b) Stomach of atmosphere
   c) Liver of atmosphere
   d) None of these

89. One of the important role of the forests is
   a) To provide wild life shelter
   b) Water shed area
   c) Range land
   d) All of these

90. There are tow main layers in the wood
   a) Heart wood and sap wood
   b) Hard wood and soft wood
   c) White and green
   d) Hard and pulpy

91. Forest is an area having predominantly
   a) Woody trees
   b) Dense vegetation
   c) Mixed vegetation
   d) Having mountains covered with trees

92. One of the hazards to the conifer forests is
   a) Insect attack
   b) Forest fires
   c) Termites
   d) Fungus

93. The branch of biology dealing with interactions among organisms and between organisms and their environment is called
   a) Economy
   b) Modeling
   c) Recycling
   d) Ecology

94. All of the members of a particular species that live in one area are called a (an)
   a) Biome.
   b) Population
   c) Community
   d) Ecosystem

95. What is the original source of almost all the energy in most ecosystems?
   a) Carbohydrates
   b) Sunlight
   c) Water
   d) Carbon
96. The algae at the beginning of the food chain in above figure are
   a) Consumers
   b) Decomposers
   c) Producers
   d) Heterotrophs

97. An organism that uses energy to produce its own food supply from inorganic compounds is called a(an)
   a) Heterotroph
   b) Consumer
   c) Detritivore
   d) Autotroph

98. An organism that cannot make its own food is called a(an)
   a) Heterotroph
   b) Chemotroph
   c) Autotroph
   d) Producer

99. What is an organism that feeds only on plants called?
   a) Carnivore
   b) Herbivore
   c) Omnivore
   d) Detritivore

100. What animals eat both producers and consumers?
    a) Herbivores
    b) Omnivores
    c) Chemotrophs
    d) Autotrophs