

COMMON P.G. ENTRANCE TEST-2022 (CPET-2022)

Subject Code : **41**

Test Booklet No.:

Entrance Subject : **Environmental Science**

Hall Ticket No.:

TEST BOOKLET

Time Allowed : **90 Minutes**

Full Marks : **70**

INSTRUCTIONS TO CANDIDATES

1. **Please do not open this Question Booklet until asked to do so.**
2. Check the completeness of the Question Booklet immediately after opening.
3. Enter your **Hall Ticket No.** on the Test Booklet in the box provided alongside. **Do not** write anything else on the Test Booklet.
4. Fill up & darken Hall Ticket No. & Test Booklet No. in the OMR Answer Sheet as well as fill up Test Booklet Serial No. & OMR Answer Sheet Serial No. in the Attendance Sheet carefully. Wrongly filled up OMR Answer Sheets are liable for rejection.
5. Each question has four answer options marked (A), (B), (C) & (D).
6. Answers are to be marked on the Answer Sheet, which is provided separately.
7. Choose the most appropriate answer option and darken the oval completely, corresponding to (A), (B), (C) or (D) against the relevant question number.
8. Use only **Blue/Black Ball Point Pen** to darken the oval for answering.
9. Please do not darken more than one oval against any question, as scanner will read such markings as wrong answer.
10. **Each question carries equal marks. There will be no negative marking for wrong answer.**
11. **Electronic items such as calculator, mobile, etc., are not permitted inside the examination hall.**
12. Don't leave the examination hall until the test is over and permitted by the invigilator.
13. **The candidate is required to handover the original OMR sheet to the invigilator and take the question booklet along with the candidate's copy of OMR sheet after completion of the test.**
14. Sheet for rough work is appended in the Test Booklet at the end.

1. The innermost layer of the earth is made up of
 - (A) Silicon and Iron
 - (B) Silicon and Magnesium
 - (C) Silicon and Nickel
 - (D) Nickel and Iron

2. With increase in temperature, the specific conductivity of water
 - (A) Remains unchanged
 - (B) Increases
 - (C) Decreases
 - (D) Makes the water turbid

3. Eutrophication in wetlands such as lakes is caused by
 - (A) Enrichment of water by chlorides
 - (B) Enrichment of water by phosphates
 - (C) Siltation due to catchment
 - (D) Addition of detritus

4. Blue baby syndrome is caused by
 - (A) Copper
 - (B) Nitrate
 - (C) Fluoride
 - (D) Mercury

5. Which among the following surfaces has maximum albedo?
 - (A) Leafy crops
 - (B) Dry sand
 - (C) Sea water
 - (D) Dark asphalt

6. Which of the following is a major photochemical oxidant?
- (A) PAN
 - (B) Ozone
 - (C) Aldehydes
 - (D) Hydrocarbons
7. A niche of the species where there is no competition from other species is called
- (A) Fundamental Niche
 - (B) Hypervolume Niche
 - (C) Realized Niche
 - (D) All the above
8. Progressive increase in concentration of a xenobiotic compound when it passes through food chain is called
- (A) Biomagnification
 - (B) Hyperaccumulation
 - (C) Bioaccumulation
 - (D) None of the above
9. The net primary productivity of an ecosystem is
- (A) The gross primary productivity minus plant respiration
 - (B) The productivity at herbivore level
 - (C) The productivity at consumer level
 - (D) The productivity at producer, herbivore and consumer level
10. Which of the following is not a type of ex-situ conservation?
- (A) Botanical garden
 - (B) Zoological park
 - (C) Wildlife sanctuaries
 - (D) Gene banks

11. Which of the following is not a soil micronutrient?
- (A) Sulphur
 - (B) Boron
 - (C) Iron
 - (D) Zinc
12. What is the hardest mineral on the Mohs scale?
- (A) Talc
 - (B) Feldspar
 - (C) Calcite
 - (D) Diamond
13. The half life period of radioactive Iodine 131 is
- (A) 30 years
 - (B) 15 years
 - (C) 5 years
 - (D) 8 years
14. The sum of the internal energy and product of pressure and volume is known as
- (A) Enthalpy
 - (B) Gibb's free energy
 - (C) Entropy
 - (D) Helmholtz free energy
15. What is OH^- ion concentration of HCl whose pH is 3?
- (A) -3
 - (B) 3
 - (C) 10^{-3}
 - (D) 10^{-11}

16. The Ramsar Convention is about the conservation of

- (A) Wetlands
- (B) Wildlife
- (C) Forests
- (D) Biodiversity

17. World Biodiversity day is celebrated every year on

- (A) March 22
- (B) May 22
- (C) July 22
- (D) November 22

18. Noise level can range from

- (A) 0 to 120 dB
- (B) 120 to 240 dB
- (C) 0 to 12 dB
- (D) 0 to 240 dB

19. Temperate region is

- (A) 60° - 80° latitude
- (B) 40° - 60° latitude
- (C) 0° - 20° latitude
- (D) 20° - 40° latitude

20. Appiko movement took place in

- (A) Andhra Pradesh
- (B) Karnataka
- (C) Uttar Pradesh
- (D) Madhya Pradesh

21. Population growth rate depends on
- (A) Birth rate
 - (B) Death rate
 - (C) Migration
 - (D) All the above
22. The hymn “ What of thee I dig out , let that quickly grow over, let me not hit thy vitals or thy heart” is from
- (A) Rig Veda
 - (B) Atharva Veda
 - (C) Sama Veda
 - (D) Yajur Veda
23. What are the variables whose calculation is done according to the weight, height, and length?
- (A) Flowchart variables
 - (B) Discrete variables
 - (C) Continuous variables
 - (D) Measuring variables
24. What is the scale applied in statistics, which imparts a difference of magnitude and proportions?
- (A) Exponential scale
 - (B) Goodness scale
 - (C) Ratio scale
 - (D) Satisfactory scale
25. The runs scored by a batsman in 5 ODIs are 31,97,112, 63, and 12. The standard deviation is
- (A) 24.79
 - (B) 23.79
 - (C) 25.79
 - (D) 26.79

26. Find the mode of the call received on 7 consecutive days 11, 13, 13, 17, 19, 23, 25
- (A) 11
 - (B) 13
 - (C) 17
 - (D) 23
27. Calculate the geometric Mean of 1,3,9,3
- (A) 1
 - (B) 2
 - (C) 3
 - (D) 4
28. Variance of a constant 'x' is
- (A) 0
 - (B) $x/2$
 - (C) x
 - (D) 1
29. Find the Variance of the constant 'K'
- (A) 1
 - (B) 0
 - (C) K^2
 - (D) $K/2$
30. Who put forward the view that plant community behaves like a super-organism which arises, grows, matures and dies?
- (A) F.E. Clements
 - (B) H. Gleason
 - (C) J.T. Curtis
 - (D) R.F. Daubenmire

31. In both terrestrial and aquatic ecosystems energy pyramid is
- (A) Always inverted
 - (B) Sometime inverted
 - (C) Always upright
 - (D) Sometime upright
32. The Earth's atmospheric CO₂ concentration is estimated to be about
- (A) 410 ppmv
 - (B) 300 ppmv
 - (C) 280 ppmv
 - (D) 350 ppmv
33. MAB program stands for
- (A) Man and Biotechnology program
 - (B) Man and Biology program
 - (C) Man and Biodiversity program
 - (D) Man and Biosphere program
34. Which among the following constitutes the largest ecosystem in the world?
- (A) Forests
 - (B) Rivers
 - (C) Oceans
 - (D) Deserts
35. Renewable source of energy is
- (A) Petroleum
 - (B) Coal
 - (C) Natural gas
 - (D) Solar energy
36. CPCB stands for
- (A) Central Pollution Control Board
 - (B) Central Power Control Board
 - (C) Corporate Pollution Control Board
 - (D) Corporate Power Control Board

37. Which one of the following is a primary producer?
- (A) Birds
 - (B) Tiger
 - (C) Gaur
 - (D) Plants
38. Landslide prone state of India is
- (A) Uttar Pradesh
 - (B) Uttarakhand
 - (C) Rajasthan
 - (D) Odisha
39. Mangroves are found in
- (A) Coastal areas
 - (B) Ponds and Lakes
 - (C) Dry Forest and Arid areas
 - (D) Flood plains
40. Which one of the following is an endangered migratory bird?
- (A) Peacock
 - (B) Eagle
 - (C) Crow
 - (D) Siberian Crane
41. Which one of the following elements exhibits both +3 and +4 oxidation states?
- (A) La
 - (B) Ce
 - (C) Nd
 - (D) Lu
42. The ability of a solvent to dissolve ionic solids strongly depends on its
- (A) Wide liquid range
 - (B) High dielectric constant
 - (C) Nature of autoionization
 - (D) Donor and acceptor properties

43. Predict the number of unpaired electron in $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$
- (A) 1
 - (B) 2
 - (C) 3
 - (D) 0
44. Van der Waals radii are
- (A) Much larger than covalent radii
 - (B) Much shorter than covalent radii
 - (C) Little larger than covalent radii
 - (D) Equal to covalent radii
45. Ionization energy of nitrogen is greater than oxygen because of the
- (A) Smaller electronegativity of nitrogen
 - (B) Smaller atomic number of nitrogen
 - (C) Half filled p-orbitals of nitrogen
 - (D) Smaller electron affinity of the nitrogen
46. Optical isomerism is shown by
- (A) 1-butanol
 - (B) 2-butanol
 - (C) 3-pentanol
 - (D) 4-heptanol
47. The temperature at which a real gas obeys the ideal gas laws over a wide range of pressure is
- (A) Critical temperature
 - (B) Boyle's temperature
 - (C) Inversion temperature
 - (D) Reduced temperature
48. The maximum external work that can be obtained from a system is represented by
- (A) $-\Delta U$
 - (B) $-\Delta G$
 - (C) $-\Delta S$
 - (D) $-\Delta H$

49. In population interaction of two species when both species are adversely affected, the interaction is termed as
- (A) Commensalism
 - (B) Competition
 - (C) Amensalism
 - (D) Epiphytism
50. In ecological succession from pioneer to climax community, the biomass shall
- (A) Decrease
 - (B) Increase and then decrease
 - (C) No relation
 - (D) Increase Continuously
51. Which state of India has maximum area of saline soils?
- (A) Uttar Pradesh
 - (B) Rajasthan
 - (C) West Bengal
 - (D) Haryana
52. Which one of the following is not an in situ approach of biodiversity conservation?
- (A) Biosphere reserves
 - (B) Sanctuaries
 - (C) Nature reserves
 - (D) Botanical gardens
53. Acid rain is defined by pH
- (A) Between 3.5 and 6.5
 - (B) Below 6.5
 - (C) Below 5.6
 - (D) Below 7.0

54. In Down's syndrome of a male child, the sex chromosomes complement will be
- (A) XXX
 - (B) XY
 - (C) XX
 - (D) XO
55. Polarisation of light indicates that light is
- (A) A longitudinal wave
 - (B) A transverse wave
 - (C) A longitudinal and transverse wave simultaneously
 - (D) Not a wave at all
56. With the rise of temperature, the resistivity of a semiconductor
- (A) Remains unchanged
 - (B) Increases
 - (C) Decreases
 - (D) First increases and then decreases
57. A high entropy system should be in great
- (A) Order
 - (B) Disorder
 - (C) Amount
 - (D) Quality
58. The Moho discontinuity is located in between
- (A) Mantle and Core
 - (B) Crust and Mantle
 - (C) Lithosphere and Asthenosphere
 - (D) Lower Mantle and Upper Mantle

59. The study of trace fossils is known as
- (A) Paleoecology
 - (B) Synecology
 - (C) Ichnology
 - (D) Ichthyology
60. Which of the following is a metamorphic rock?
- (A) Marble
 - (B) Granite
 - (C) Basalt
 - (D) Conglomerate
61. Which of the following is a Hot Spot in India?
- (A) Western Ghat
 - (B) Sunderbans
 - (C) Chilka Lagoon
 - (D) Eastern Ghat
62. The food chain in which microorganisms breakdown dead producers is called
- (A) Consumer food chain
 - (B) Predator food chain
 - (C) Parasitic food chain
 - (D) Detritus food chain
63. The chemical responsible for Bhopal Gas Tragedy was
- (A) Methyl isocyanide
 - (B) Oxygen difluoride
 - (C) Diborane
 - (D) Phosgene

64. Which among the following has the highest content of Carbon?
- (A) Peat
 - (B) Lignite
 - (C) Bituminous
 - (D) Anthracite
65. The electrolysis of aqueous NaCl produces
- (A) H_2 at Cathode
 - (B) H_2 at Anode
 - (C) Na at Cathode
 - (D) Cl_2 at Anode
66. Fuel Cell
- (A) Converts chemical energy to electrical energy
 - (B) Converts the energy of slow combustion of a fuel into electrical energy
 - (C) Work reversibly in the thermodynamic sense
 - (D) Inverts in U-shape
67. The rate of reaction between A and B increases by a factor of 100, when the concentration of A increases 10 folds. The order of reaction with respect to A is
- (A) 10
 - (B) 2
 - (C) 1
 - (D) 20
68. Indian lithospheric plate is moving northward and colliding with
- (A) African plate
 - (B) North American plate
 - (C) Eurasian plate
 - (D) Indo-Australian plate

69. Which mineral is most susceptible to weathering?
- (A) Olivine
 - (B) Albite
 - (C) Orthoclase
 - (D) Quartz
70. The transition zone between two communities is known as
- (A) Ecotype
 - (B) Ecophene
 - (C) Ecotone
 - (D) Keystone

ROUGH WORK