

# SINDH MDCAT PAPER 2018

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# NTS past paper 2018

## ENGLISH

**Identify the word or phrase that needs to be changed for the sentence to be correct.**

1. It's too late to go for a walk now; besides, it's beginning to rain.

- A. It's
- B. Go
- C. Besides
- D. Beginning
- E. No Error

2. The quests broke a dozen glass at the party.

- A. The guests
- B. Broke
- C. Glass
- D. At :
- E. No error

**Complete the sentences by choosing the most appropriate option, from the given lettered choices (A to D/E) below each.**

3. He would like \_\_\_\_\_ have a job in the same office as his brother.

- A. too
- B. to
- C. of to
- D. get 4.

4. **The road is wet. It must \_\_\_\_\_ raining.**

- A. have been
- B. had
- C. has
- D. have

**Choose the word most similar in meaning to the capitalized one.**

**5. SHABBY:**

- A. organized
- B. untidy
- C. reluctant
- D. sensible

**6. FORBID:**

- A. prohibit
- B. chide
- C. permit
- D. constraint

**Questions 7-8**

**Television is typical of many new scientific words which are deliberately invented from old Greek and Latin words. In this case the prefix 'tele' is Greek and means 'far' (of telephone, telegram), while the root 'vision' is derived from the Latin verb meaning 'to see'.**

**7. The word "Television" is invented from:**

- A. English and Spanish
- B. French and Arabic
- C. Dutch and German
- D. Greek and Latin

**8. Which of the following gives the meaning of the prefix "tele"?**

- A. near
- B. close
- C. far
- D. away

**Choose the lettered word or phrase that is most nearly opposite in meaning to the word in capital letters.**

**9. SUPREMACY:**

- A. excellency
- B. sovereignty
- C. inferiority
- D. influence

**10. PATRIOTISM:**

- A. nationalism
- B. socialism
- c. obsession
- D. disloyalty

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## **BIOLOGY**

**11. In which of the following growth phases, the number of bacteria increases the most rapidly?**

- A. Lag phase
- B. Log phase
- C. Stationary phase
- D. Death/decline phase

**12. Which of the following is the simplest form of pathogens causing diseases?**

- A. Viruses
- B. Prions
- C. Fungus
- D. Amoeba

**13. The category of organisms which are able to make their own food is called:**

- A. Heterotrophs
- B. Autotrophs
- C. Consumers
- D. Decomposers
- E. Saprotrophs

**14. The branch of science dealing with the fossil record is called:**

- A. Genetics
- B. Taxonomy
- C. Archeology
- D. Paleontology
- E. Biochemistry

15. Which of the following is the manipulation of genetic material for practical purposes?

- A. Grafting
- B. Tissue culture
- C. Genetic engineering
- D. Cell culture

16. Which part of the cell does glycolysis occur in?

- A. Mitochondrion
- B. Chloroplast
- C. Cytoplasm
- D. Nucleus
- E. Vacuole

17. The technique used for Identification of criminals is called:

- A. Cloning
- B. DNA fingerprinting
- C. Restriction analysis
- D. Polymorphism
- E. Gene sequencing

18. Which of the following bacteria are able to release oxygen into the environment?

- A. Saprotrophic bacteria
- B. Parasitic bacteria
- C. Cyanobacteria
- D. Pathogenic bacteria

19. Which of the following is NOT the part of RNA?

- A. Nitrogenous bases
- B. Ribose sugars
- C. Deoxyribose sugars
- D. Phosphate groups
- E. Adenine

20. Referring to sexual reproduction, humans are:

- A. Hermaphrodites
- B. Viviparous
- C. Oviparous
- D. Self-fertilized

21. Which of the following is NOT the function of cell membranes?

- A. Protection of cytoplasm
- B. Regulating the passage of different molecules
- C. Protein synthesis
- D. Cellular communication
- E. Cellular transportation

22. Genetic information in the DNA is encoded as:

- A. Deoxyribose sugars
- B. Ribose sugars
- C. Phosphate groups
- D. Sequence of nitrogenous bases
- E. Sequence of phosphate group

23. The chromosomes with equal arms are called:

- A. Metacentric
- B. Submetacentric
- C. Acrocentric
- D. Telocentric

24. The disease arises due to age is:

- A. Alzheimer's
- B. Hepatitis
- C. Cholera
- D. Malaria
- E. Beriberi

**25. Which of the following endoparasites of humans replicates within human cells? .**

- A. Bacteria
- B. Leech
- C. Fungi
- D. Helminths

**26. The disease caused by Protozoal infection is:**

- A. Rickets
- B. Goitre
- C. Malaria
- D. Beri-beri
- E. Alzheimer's

**27. Which of the following are divided by fission?**

- A. Viruses
- B. Viroids
- C. Bacteria
- D. Fungus

**28. In recombinant DNA technology, the copies of recombinant DNA are increased by:**

- A. Restriction enzyme
- B. Ligase
- C. Selection of host with rDNA
- D. Multiplication of host with rDNA

**29. The disease caused by nutritional deficiency is:**

- A. Hepatitis
- B. Cholera
- C. Malaria
- D. Beriberi
- E. Alzheimer's



30. Which of the following basic structural level of proteins is *indicated* by an association of two alpha and two beta chains *in* the hemoglobin molecule?

- A. Primary structure
- B. Secondary structure
- C. Tertiary structure
- D. Quaternary structure

31. The branch of science dealing with the classification of life forms is called:

- A. Genetics
- B. Taxonomy
- C. Archeology
- D. Paleontology
- E. Biochemistry

32. Which of the following is NOT a part of the immune system?

- A. Phagocytes
- B. Complement proteins
- C. Cytokines
- D. Atherosclerosis

33. The system responsible for fighting the pathogens is:

- A. Muscular system
- B. Endocrine system
- C. Nervous system
- D. Immune system

**34. Which one of the following organelles is required for aerobic respiration?**

- A. Nucleus
- B. Mitochondria
- C. Endoplasmic reticulum
- D. Plastids
- E. Cytoskeleton

**35. Please mark the one Kingdom having the most conspicuous living organisms?**

- A. Monera
- B. Protista
- C. Animalia
- D. Plantae

**36. Which of the following phyla of Kingdom Animalia does human belong to?**

- A. Mollusca
- B. Arthropoda
- C. Echinodermata
- D. Chordata

**37. Carbon dioxide joins the photosynthetic pathway at:**

- A. PSI
- B. PSII
- C. Light reaction
- D. Dark reaction

**38. The enzyme found in saliva responsible for the digestion of carbohydrates is:**

- A. Lysozyme
- B. Amylase
- C. Pepsin
- D. Trypsinogen
- E. Lipase

39. **The process by which one molecule of Glucose splits up into molecules of Pyruvate is called:**

- A. Glycolysis
- B. Oxidative phosphorylation
- C. Electron transport chain
- D. Krebs cycle
- E. Calvin cycle

40. **Which of the following is NOT a viral disease?**

- A. AIDS
- B. Malaria
- C. Influenza
- D. Chicken pox
- E. Rabies

### **PHYSICS**

41. **If in a circuit, 2 ampere current is drawn from the battery in 10 minutes. How much charge will flow through the circuit in this time ?**

- A. 1200 Coulombs
- B. 600 Coulombs
- C. 500 Coulombs
- D. 20 Coulombs

42. **If a car collides with a housefly, what will be the magnitude of the force experienced by the housefly?**

- A. *Much* greater than the car experienced by the housefly
- B. *Much* lesser than the car experienced by the housefly
- C. *Same* as the car experienced by the housefly
- D. 10 times less than the car experienced by the housefly

43. In the photo electric effect, a photon of energy  $h\nu$  is incident on the metal surface. The energy required to eject the valence electron from the surface of the metal is expressed as:

- A. Wave nature of the light
- B. Compton scattering
- c. Melting point of the metal
- D. Work function of the metal

44. Bimetallic thermostat is an example of:

- A. Electric field
- B. Thermal expansion
- C. Heat engine
- D. Isobaric process

45. Let  $B$  be the magnetic field and a conductor of length  $L$  is moved across this field. Due to this activity, a potential difference appears across the ends of the conductor. This type of potential difference is termed as:

- A. Self-Induction
- B. Mutual Induction
- C. Motional E.M.F
- D. Electrostatic potential

46. If a dielectric material is placed between two plates of a capacitor, the net capacitance of the capacitor:

- A. Decreases
- B. Increases
- C. Remains constant
- D. Zero,

47. In free states, the mass of the nucleus is always:

- A Greater than the mass of its constituents
- B. Equal to the mass of its constituents
- C. Less than the mass of its constituents
- D. Far greater than the mass of Its constituents

48. A solar day is the time Interval between two successive appearances of the sun overhead. The time that is referred to rotation of the earth about Its axis is called:

- A., Universal Time
- B. Length of the day
- C. Time Interval
- D. Solar day

49. If the sunlight is Incident on the photocell, the number of electrons emitted from the surface of the cell increases with the:

- A. Increase of light frequency
- B. Increase of light Intensity
- C. Decrease of light frequency
- D. Decrease of light intensity

50. In electronic circuits, a PN Junction diode is used to convert alternating current Into direct current. This process is called:

- A. Rectification
- B. Amplification
- C. Doping
- D. Integrated circuit

51. The process in which light bands around an obstacle is called:

- A. Diffraction of light
- B. Interference of light
- C. Reflection of light
- D. Polarization of light

52. Let X be a radioactive element having  $N_0$  nuclei. The time required to decay this element to one half of its initial number  $N_0$  is known as:

- A. Law of radioactive decay
- B. Decay constant
- C. Half life
- D. Decay Time

53. When an electron and its anti-particle positron come close enough to each other, they completely convert into radiation energy in the form of photons, this process is called:

- A. Photo electric effect
- B. Pair production
- C. Annihilation of matter
- D. Compton effect

54. There are different types of waves that exist in this universe. Which of the following waves do NOT need any material medium to travel?

- A. Sound waves
- B. Waves produced on a string
- C. Electromagnetic waves
- D. Waves produced on the water surface

55. A cyclist moving towards right with an acceleration of  $4\text{m}/\text{Sec}^2$ . At  $t=0$ , he has travelled  $5\text{m}$  moving towards the right at  $15\text{m}/\text{Sec}$ . What will be his position at  $t=2$  seconds?

- A. 36
- B. 38
- C. 41
- D. 43

56. In pure semiconductor materials, some impurities are added to change the properties of these semiconductors. This process is called:

- A. Crystallography
- B. Rectification
- C. Intrinsic defects
- D. Doping

57. **Two forces equal in magnitude but opposite in direction and not acting along the same line constitute a couple. The movement of this couple will be:**

- A. Dependent on the location of the origin
- B. Independent of the location of origin
- C. Zero
- D. Scalar product

58. **In electromagnetic spectrum of radiations, the wavelength spectrum that is visible to humans lies in the range of:**

- A. 100-400 nm
- B. 400-700 nm
- C. 700-1000 nm
- D. 1000-1500 nm

59. **Equations of kinetics are valid only when the acceleration is:**

- A. Increasing
- B. Decreasing
- C. Constant
- D. Vary with time

60. **The process of natural decay of some heavy nuclides is because of the \_\_\_\_\_ phenomenon.**

- A. Emission spectra.
- B. Nuclear fusion
- C. Nuclear fission
- D. Radioactivity

61. **If constant temperature conditions are applied to a gas container, then the volume of the mass of that gas tends to Increase by:**

- A. Decreasing the applied pressure .
- B. Increasing the applied pressure
- C. Increasing applied pressure with double force
- D. Increasing the weight

62. **The atomic number  $Z$  of an atom represents the:**

- A. Number of protons
- B. Number of electrons and protons
- c. Number of neutrons
- D. Sum of protons and neutrons

63. **If constant current is flowing through a coil then flux through that coil will become constant. In such type of arrangements, the electromotive force emf induced in coil will be :**

- A. Self-inductance
- B. Zero
- C. Mutual-Inductance
- D. Back emf

64. **In simple harmonic motion, a particle is oscillating in such a way that its total energy remains conserved. When this particle reaches its two extreme positions, Its potential energy at extreme positions becomes:**

- A. Minimum
- B. Maximum
- c. Zero
- D. Greater than its kinetic energy

65. **If we increase the area of a cross section of a conductor having a length  $L$ , the resistance  $R$  of that conductor will be:**

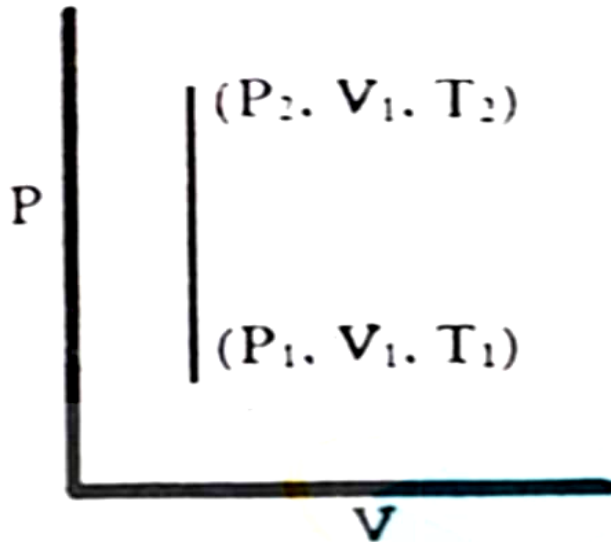
- A. Zero
- B. Constant
- C. Increasing
- D. Decreasing

66. **The efficiency of the Carnot engine working between temperatures  $177^{\circ}\text{C}$  and  $77^{\circ}\text{C}$  will be:**

- A. 22.22%
- B. 23.23 %
- C. 25.25 %
- D. 30.30 %



67. Which process is shown in the graph between pressure and volume ?



- A. Adiabatic
- B. Isobaric
- C. Isochoric
- D. Isothermal

68. Which of the following phenomenon represents the wave nature, of light?

- A. Photoelectric effect
- B. Compton scattering
- C. Interference of light
- D. Pair production

69. Law of heat exchange is used to determine:

- A. Coefficient of linear expansion
- B. Coefficient of volume expansion
- C. Ideal gas constant
- D. Specific heat of substance

70. During radioactive decay of a nucleus  ${}^Z\text{X}_4$ ,  $\beta$  emission takes place along with daughter nucleus. Because of this beta particle emission, the mass number A of parent nucleus:

- A. Remains constant
- B. Decreases by 1
- C. Increases by 1
- D. Decreases by 2

**CHEMISTRY**

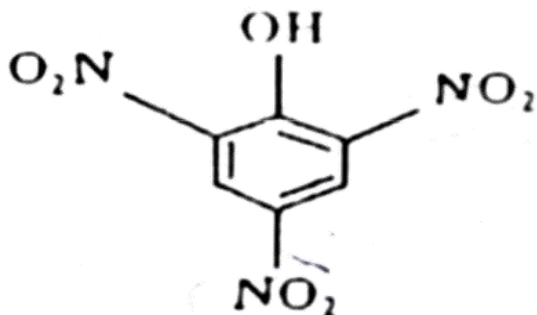
71. In which of the following nitrogen compounds, N has the highest oxidation state?

- A.  $\text{NH}_2\text{OH}$
- B.  $\text{N}_2\text{H}_4$
- C.  $\text{HNO}_3$
- D.  $\text{NH}_3$

72. Real gases behave ideally at:

- A. Low temperature and low pressure
- B. Moderate temperature and low pressure
- C. High temperature and low pressure
- D. High temperature and high pressure

73. The figure mentioned below is commonly known as:



- A. Resorcinol
- B. Aspirin
- C. Picric acid
- D. Mesitol

74. Which alkyl halide has the lowest reactivity for a particular alkyl group?

- A. R-Cl
- B. R-F
- C. R-Br
- D. R-I

75. Which one of the following vitamins is required for normal growth, vision and keeping the skin healthy?

- A. Vitamin D
- B. Vitamin E
- C. Vitamin A
- D. Vitamin K

76. Which one of the following is the pure carbon compound and used as reducing agent in industries?

- A. Coal tar
- B. Petroleum
- C. Coal gas
- D. Coke

77. The alloy Dura lumin is composed of \_\_\_\_\_ of Al.

- A. 95%
- B. 90%
- C. 85%
- D. 80%

78. 106 gram of  $\text{Na}_2\text{CO}_3$  per  $\text{dm}^3$  of solution of  $\text{Na}_2\text{CO}_3$  in water, the concentration of the solution will be:

- A. 1N
- B. 0.1M
- C. 1M
- D. 0.02M

79. For the first time in 1911, Henry Moseley used X-rays for the determination of:

- A. Atomic number
- B. Atomic mass
- C. Molecular mass
- D. Equivalent mass

80. Which of the following properties depends upon the amount of – matter present in the system?

- A. Density
- B. Gibb's free energy
- C. Pressure
- D. Temperature

81. Zwitter ion is formed when proton goes from:

- A. Amino to carboxyl group
- B. Carboxyl to amino group
- C. Carboxyl group only
- D. Amino group only

82. For the following exothermic reaction, decrease in temperature will shift the equilibrium towards:  $2\text{NO}(\text{g}) + \text{O}_2(\text{g}) + 2\text{NO}_2(\text{g})$

- A. Left
- B. The point of equilibrium
- C. Both directions
- D. Right

83. How many significant figures are there in 00.4793?

- A. 3
- B. 4
- C. 5
- D. 6

84. Which one of the following is NOT a meta directing group?

- A.  $\text{COOH}$
- B.  $\text{SO}_3\text{H}$
- C.  $\text{CHO}$
- D.  $\text{OH}$

85. The rate of a chemical reaction is directly proportional to the product of active masses of the reactants, it is referred to as:

- A. Law of conservation of energy
- B. Law of mass action
- C. Law of conservation of mass
- D. Active mass law

86. Which one of the following does NOT give iodoform test?

- A.  $\text{CH}_3\text{OH}$
- B.  $\text{CH}_3\text{CH}_2\text{OH}$
- C.  $\text{CH}_3\text{CHO}$
- D.  $\text{CH}_3\text{COCH}_3$

87. The boiling point of water is highest than other hydrides because water molecules can form:

- A. 4 hydrogen bonds
- B. 3 hydrogen bonds
- C. 2 hydrogen bonds
- D. 1 hydrogen bonds

88. When electricity is passed through water in the presence of an acid oxygen \_\_\_\_\_ is produced.

- A. Carbon
- B. CO
- C- CO<sub>2</sub>
- D. Hydrogen

89. The reaction  $2\text{CO} + \text{O}_2 \rightleftharpoons 2\text{CO}_2$  proceeds slower because of - activation energy of CO.

- A. equilibrium
- B. constant
- C. low
- D. high

90. Lithium and beryllium are unique in such a way that they have higher charge densities which produce strong polarizing effects due to:

- A. Nonmetal
- B. Solubility
- C. Small size
- D. Large size

91. The Neutron was discovered by:

- A. Goldstein
- B. Rutherford
- C. J.J Thomson
- D. De Chadwick

92. The normal pH of blood is:

- A. 7.75
- B. 7.35
- C. 7.25
- D. 7.05

93. Which of the following reactions is NOT shown by Ketones?
- A. Reaction with HCN
  - B. Reaction with Fehling solution
  - c. Reaction with  $\text{NaHSO}_3$
  - D. Reaction with 2,4-dinitrophenyl-hydrazine
94. The melting point of NaCl is very high  $801^\circ\text{C}$ , It is reduced to  $600^\circ\text{C}$  by addition of \_\_\_\_\_. In Down's process,
- A. Calcium chloride
  - B. Magnesium chloride
  - C. Aluminum chloride
  - D. Potassium chloride
95. The phenomenon in which certain elements emit invisible radiations is called:
- A. Spectroscopy
  - B Radioactivity
  - c. Gravimetry
  - D. Chromatography
96. The number of bond(s) between carbon and nitrogen atoms in a Nitrile is:
- A. One sigma and one pi
  - B. Two sigma and one pi
  - C. Only sigma
  - D. One sigma and two pi
97. The transparent plastic used to make combs and hair brushes is called:
- A PVA
  - B. PVC
  - c. Bakelite
  - D. Perspex

98. In electrochemical series, elements are arranged in order of their standard electrode potentials, the correct decreasing reactivity order for metals is:

- A. Gold, silver, magnesium, aluminum
- B. Mercury, calcium, sodium, magnesium
- C. Sodium, aluminum, lead, copper
- D. Potassium, silver, magnesium, aluminum

99. Methyl orange is \_\_\_\_\_ in acidic solutions.

- A. yellow
- B. pink .
- C. orange .
- D. red

100. How many chain isomers are shown by  $C_5H_{12}$ ?

- A. 5
- B. 4
- C. 3
- D. 2



**NTS TESTING SERVICE**  
**NTS ANSWERE KEY 2018**

Question#	Correct Choice	Question#	Correct Choice	Question#	Correct Choice	Question#	Correct Choice
1	E	26	C	51	A	76	D
2	C	27	C	52	C	77	A
3	B	28	D	53	C	78	C
4	A	29	D	54	C	79	A
5	B	30	D	55	D	80	B
6	A	31	B	56	D	81	B
7	D	32	D	57	B	82	D
8	C	33	D	58	B	83	B
9	C	34	B	59	C	84	D
10	D	35	C	60	D	85	B
11	B	36	D	61	A	86	A
12	B	37	D	62	A	87	A
13	B	38	B	63	B	88	D
14	D	39	A	64	B	89	D
15	C	40	B	65	D	90	C
16	C	41	A	66	A	91	D
17	B	42	C	67	C	92	B
18	C	43	D	68	C	93	B
19	C	44	B	69	D	94	A
20	B	45	C	70	A	95	B
21	C	46	B	71	C	96	D
22	D	47	C	72	C	97	D
23	A	48	A	73	C	98	C
24	A	49	B	74	B	99	D
25	A	50	A	75	C	100	C