1) DTERT is expanded as

A) Directorate of Teaching, Education and Training

B) Directorate of Teacher Education,Research and Training

C) Distance Teaching Education, Research and Training

D) Distance Teacher Education, Re- Training

2) The theory on 'Hierarchy of Needs' was propunded by

a) Abraham Maslow   b) Jean Piaget

c) Bertrand Russell   c) McLeland

3) Formula to calculate Intelligence Quotient is

a)$IQ = \frac{MA}{CA} \times 100$ B) $IQ = \frac{MA}{CA} \times 100 \pm 5$

C)$IQ = \frac{CA}{MA} \times 100 \pm 5$ D)$IQ = \frac{CA}{MA} \times 100$

4) Fredirick J.McDonald established

a) Sainik schools   b) Community schools

c) Mobile schools   d) Public schools

5) The floating University (S.S universe) visited the Madras Harbour in the year

a) 1977   b)1978

c)1979   d)1980

6) In the word 'Personality' Persona means

a) The physical features of the actor

b) the actor

c) the mask worn by the actor

d) the dress worn by the actor

7) The child's first Teacher is

a) The Pre- Primary Teacher   b) Primary Teacher

c) The parent   d) The society

8) The book titled "Education for a Better Social Order" was written by

a) Rousseau   b) Russell

c) Maslow   d) Aurobindo

9) Education should be aimed at the gross root level of any nation "- This slogan was stressed by

a) Nehru b) Abul Kalam Azad

c) Gandhi   d) Montessori

10) Diversified curriculum at the Higher Secondary level was implemented in the year

a) 1947   b)1951

c) 1968   d)1978

11) Klystron is a device is used to generate

a) Ultrosonic waves   b) Microwaves

c) Sound waves   d)Radio waves

12) Intel 8085 microprocessor is a

a) 8 bit device   b) 16 bit device

c) 32 bit device   d) 64 bit device

13) The mnemonic used to transfer contents of one register into another is

a) ADD   b) MVI

c) MOV   d) LXI

14) EEPROM is a

a) Write only memory

b) Read only but non erasable memory

c) Read only but erasable memory   d) R/W memory

15) Video RAM is a

a) Static Memory   b) Dynamic Memory

c) Both static and dynamic Memory

d) Read only Memory

16) Fermi's theory of beta decay is based on the following assumption

a) The rest mass of the neutron is negligible

b) The rest mass of the neutrino is negligible

c) The rest mass of the proton is negligible

d) The rest mass of the electron is negligible

17) Nuclear fission can be successfully explained using

a) Liquid drop model of the nucleus

b) Shell model of the nucleus

c) Collective model of the nucleus

d) None of these

18) The particles which cannot be accelerated by means of cyclotron are

a) proton   b) deuterons

c) α-particles   d) electrons

19) Nuclear radiation can be detected by

a) Cyclotron   b) Synchro- Cyclotron

c) G.M Counter   d) Nuclear reactor

20) The material used as a moderator in a nuclear reactor is

a) Graphhite   b) Cadmium

c) Boron   d) Lead

21) Maxwell's thermodynamic relations make use of

a) Temperature and Entropy

b) Pressure and Volume

c) Temperature and Entropy and Pressure

d) Temperature and Entropy Pressure and and Volume

22) The process which takes place in the liquefaction of gases is

a) Joule-Kelvin effect   b) Joule's heating effect

c) Thermoelectric effect   d) Thomson effect

23) The effective unit of charge in BCS theory is

a) e   b) 2e

c) 3e   d) 4e

24) according to uncertinity principle

1)$\Delta x.\Delta px \geq h$ 2) $\Delta x.\Delta px > h$

3) $\Delta x.\Delta px \leq h$ 4) $\Delta x.\Delta px < h$

25) The zero point energy of a linear harmonic oscillator is equal to

a)$\frac{1}{2}h\gamma$ b) $h\gamma$ c) $\frac{3}{2}h\gamma$ d) $2h\gamma$

26) The lambda point which separate Helium I and Helium II is

a) 218.6 K   b) 21.86 K   c)2.186 K   d) 0.2186 K

28) The value of permittivity of free space $C^2N^{-1}M^{-2}$ is

a) 36л 10^9 b) 36л 10^{-9} c)10^{-9}/36л   d) 36л

29) The total normal electrix flux over a closed surface surrounding a charge is

a) Directly proportional to the charge

b) Inversely proportional to the charge

c) Directly proportional to square of the charge

d) Inversely proportional to the square of the charge

30) Laplace's equation of free space is

a) $\nabla^2 V = 0$ b) $\nabla V = 0$

c) $\nabla^2 V \neq 0$ d) $\nabla V \neq 0$

31)The total inernal energy of a diatomic molecule is made up of

a) Rotational energy only   b) Vibrational energy only

c) Electronic energy only   d) All of these

32) The pure rotation band in the far IR were first noticed in the absorption spectra of

a) Water   b) Ammonia

c) Hydrogen Halides   d) Carbon Dioxide

33) In the case of stokes line observed in Raman effect, the frequency of the line is

a) Less than that of the incident radiation

b) More than that of the incident radiation

c) equal to that of the incident radiation

d) Any of these

34) Raman effect may be considered as the optical analogue of

a) Photo electric effect   b)Zeeman effect

c) Stark effect   d) Compton effect

35) Frank Condon principle explains

a) Chemical reactions   b) Photo electric effect

c) Photo chemical Dissociation d) Thermo electric effect

36) Lagrangian represents the

a) Kinetic energy of a system

b) Potential energy of a system

c) Sum of K.E and P.E

d) Difference between K.E and P.E

37) The equation of a motion of a simple pendulum is

a) $\ddot{\theta} - \frac{g}{l}.\theta = 0$ b)$\ddot{\theta} + \frac{g}{l}.\theta = 0$

c) $\ddot{\theta} + \frac{l}{g}.\theta = 0$ d) $\ddot{\theta} - \frac{l}{g}.\theta = 0$

38) The relation between angular momentum $(\vec{L})$

Angular velocity $(\vec{\omega})$ and moment of enertia (I) is

a) $\vec{L} = I\vec{\omega}$ b) $\vec{\omega} = I\vec{L}$

c)I=$\vec{L}.\vec{\omega}$ d) $\vec{L} = \vec{\omega}/I$

39) Only one phase point can occupy one phase cell according to

a) Classical Statistics   B)Bose-Einstein Statics

c) Fermi Dirac statistics   d)All of these

40) The statistical theory which readily leads to Plank's law of radiation is

a) Maxwell- Boltzman Statistics

b) Bose-Einstein Statics

c) Fermi Dirac statistics

d) None of these

41) If the probability of husband's selection is 1/7 and that of wife's selection is 1/5 in an interview, then the probility for both of them to be selected is

a) 12/35   b)2/35   c)6/355   d)1/35

42) The probability of getting 4 heads in6 tosses of a fair coin is

a) 2/3   b)15/64   c)3/64   d)1/3

43) If m is the means of poisson Distribution, then the standard deviation of the Distribution is

a) m   b) m^2 c) $\sqrt{m}$ d) m^3

44) The mean for normal distribution is

a) Greater than zero   b) Less than zero

c) Equal to zero   d) Infinity

45) The number of some values to be found out in order to fit a straight line to the given points using the method of least squares is

1) 1   b) 2   c) 3   d) 4

46) If a vector function $\vec{V}$ is said to be solenoidal, then

a) $\nabla.\vec{V} = 0$ b) $\nabla \times \vec{V} = 0$

c) both (A) and (B)   d) Either (A) or (B)

47) The condition for a vector Function $\vec{F}$ to be irrotational is

a) $\nabla.\vec{F} = 0$ b) $\nabla \times \vec{F} = 0$

c) Either (A) or (B)   d) both (A) and (B)

48) Stokes theorem relates

a) Line integral with surface integral

b) Surface integral with surface Volume integral

c) Line integral with Volume integral

d) None of these

49) The characteristics roots of a Hermitian matrix are all

a) Imaginary   b) Real

c) Either real or imaginary   d) Zero

50) The rank of the matrix $\begin{pmatrix} 1 & 2 & 3 \\ 2 & 4 & 7 \\ 3 & 6 & 10 \end{pmatrix}$ is

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

51) In Tamil Nadu, Sainik School is located in

a) Coimbatore   b) Salem

c) Tirichirapalli   d) Kanyakumari

52) The Sergeant report of 1944 insisted on the establishment of

a) Pre-Primary schools   b) Primary schools

c) Vocational schools   d)Public schools

53) The University at tanjavur offers exclusive courses in

a) Computers   b) Tamil Literature

c) Oriental Languages   d) All subjects

54) 'Tachistoscope' is used to measure

a) Span of attention   b) Span of Learning

c) Span of forgetting   d)Span of teaching

55) Pavlov propounded the theory of

a) Classsical conditioning   b) Operant conditioning

c) General conditioning   d) None of these

56) The new educational policy of 1986 was implemented by

a) Indhira Gandhi   b) Rajiv Gandhi

c) Mahatma Gandhi   d) None of them

57) "India's Destiny is shaped in her classrooms" was the initial statement found in the report of the

a) Kothari Education Commission

b) Indian Education Commission

c) Sampoornananda Committee

d) Malcom Adiseshaiyar,s Committee

58) Navodaya schools are managed by

a)The state governments

b)The central governments

c)Private Authorities

d) Both central and state governments

59) The present system of education is

a) Child centered   b)Subject centered

c) Teacher centered   d)All of these

60) A 'Laissez faire' teacher exercises

a) more control   b) Less control

c) No control   d) Full power

61) The binary equivalent of the decimal number 51 is

a) 101100   b)110001

c) 100110   d)110011

62) The decimal equilent of the hexadecimal number 12A is

a) 325   b)298

c) 123   d)456

63) The correct Boolean equation

A) $\overline{B.B} = \bar{A} + \bar{B}$ B) $\overline{A + B} = \bar{A} + \bar{B}$

C) $\overline{A.B} = \bar{A}.\bar{B}$ D) $\bar{\bar{A}} = \bar{A}$

64) One of the following statement is correct:

a) Half adder can be used to add 3 bits

b)The output of the AND gate in a half adder is the SUM

c) The output of the OR gate in a half adder is the CARRY

d) The output of the XOR gate in a half adder is the CARRY

65) In the case of a JK M/S flip flop

a) If the master sets the slave resets

b) If the master resets, the slave sets

c) If the master sets, the slave sets

d) The slave does not copy the master

66) Who was the first President of the Republic India?

a) Dr.Rajendra Prasad   b) Dr.Rajagopalachari

c) Dr. Radhakrishnan   d) V.V.Giri

67) What is a light year?

a) A kind of year   b)A measure of time

c) A measure of distance

d) The distance travelled by light in a year

68) "Kalingathu Parani" was written by

a) Kambar   b) Jeyankondar

c)Sekkilar   d)Avvaiyar

69) Raja raja chola built

a) Gangaikonda cholapuram b)Brihdeeswara Temple

c) Meenakshi Temple

d)Mahabalipuram shore Temple

70) Marathon Race is

a) 26 miles and 385 yards   b) 21 miles and 385 yards

c) 32 miles and 385 yards   d) 19 miles and 385 yards

71) Fopr j=0, the components of $\vec{J}$ are all represented by null matrices of rank

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

72. If a wave function is normalized, then

a)$\int \Psi^2 \Psi \, d\tau = 0$ b) $\int \Psi^2 \Psi \, d\tau = 1$

c) $\int \Psi^2 \Psi \, d\tau = \infty$ d) $\int \Psi^2 \Psi \, d\tau < 0$

73) Born approximation may be used to find out

a) Transition probability

b) Differential scaterring cross-section

c) Total scaterring cross-section

d) Scattering Amplitude

74) The binding energy per nucleon is maximum for

a) Carbon nucleus   b) Oxygen nucleus

c) Iron nucleus   d) Helium nucleus

75) The strongest available force is

a) Gravitational Force   b) Nuclear Force

c) Electrostatic force   d) Electromotive force

76) According to Debye's theory of specific heats, at very low temperatures, the specific heat capacity is

a) Directly proportional to the temperature

b) *Inverse*ly proportional to the temperature

c) Directly proportional to the cube of temperature

d) *Inverse*ly proportional to the cube of temperature

77) Widemann-Franz law gives the relation between

a) Thermal conductivity and specific heat capacity

b) Thermal conductivity and electrical conductivity

c) Electrical conductivity and electrical resistance

d) Electrical conductivity and voltage

78) Lorenz number (L) is defined as

a) $L = \frac{KT}{\sigma}$ `b) $L = \frac{K\sigma}{T}$

c) $L = \frac{K}{\sigma T}$ d) $L = \frac{\sigma}{KT}$

79) A pure semiconductor becomes an insulator at

a) 0 K   b) 100 K   c) 0^0 C   d) 100^0 C

80) The eigen functions of the wave equation for a periodic potential may be obtained using

a) Schottky theorem   b) Poynting theorem

c) Bloch theorem   d) Gauss theorem

81) The value of $1\frac{1}{\sqrt{\mu 0 \varepsilon 0}}$ is

a) 3×10^{10} b) 3×10^8

c) 3×10^2 d) 3×10^{18}

82) If a rod of length l moves with velocity C with respect to an observer, then the apparent length of the rod will be

a) More than l b) equal to l

c) equal to zero   d) None of these

83) The proper time of a moving object is always

a) More than the corresponding interval in the clock at rest

b) Less than the corresponding interval in the clock at rest

c) Equal to the corresponding interval in the clock at rest

d) None of these

84) The maximum velocity attainable in nature is

a) 3×10^8 cm/sec   b) 3×10^8 m/sec

c) 3×10^8 km/sec   d) 3×10^8 mm/sec

85) The mass of an object moving with the velocity of light will appear to be

a) equal to zero   b) Less than rest mass

c) Equal to infinity   d) More than the rest mass

86) The statistical theory which supports the zero point energy of a gas even at absolute zero

a) Classical statistics   b) B.E statistics

c) F.D statistic   d) All of these

87) According to M.B statistics, the number of particles in the given energy range is given by

a) $n_i = z_i/(Ae^{Ei/KT})$ b) $n_i = z_i/(Ae^{Ei/KT}-1)$

c) $n_i = z_i/(Ae^{Ei/KT}+1)$ d) $n_i = z_i/(Ae^{Ei/KT}\pm1)$

88) Phase points are endowed with a distinct unchanging individuality of their own, according to

a) Classical statistics   b) B.E statistics

c) F.D statistic   d) None of these

89) The number of dimensions of phase space is

a) 3   b) 4   c) 5   d) 6

90) A divergence in the behavior of an actual gas from that of a perfect gas is referred to as

a) Entropy of the gas   b) Degeneracy of the gas

c) Thermodynamic probability of the gas

d) Pressure of the gas

91) The order of full linear group is

a) 1   b) 2   c) ∞ d) 3

92) Every sub-group of a cyclic group is

a) Cyclic   b) Symmetric

c) Simple   d) Unitary

93) For equilibrium of system, virtual work work of the applied force is

a) Infinity   b) Zero

c) Non –zero   d) Negative

94) Hamiltonian represents the

a) Kinetic energy of a system

b) Potential energy of a system

c) Total energy of a system

d) Difference between K.E and P.E of a system

95) If A represents the action in mechanics, then according to the principle of least in action

a) A=0   b) ΔA=0

c) ΔA$\neq$0 but positive   d) ΔA is negative

96) The matrix which satisfies its own characteristics equation is

a) Row matrix   b) Column matrix

c) Null matrix   d) Square matrix

97) The value of $\Gamma_{(m+1)}$ is

a) n   b) (n+1)

c) n!   d) (n+1)!

98)   The relation between Beta and Gamma functions is

a)$\beta(m,n) = \frac{\Gamma m + \Gamma n}{\Gamma m \Gamma n}$ b) $\beta(m,n) = \frac{\Gamma m \Gamma n}{\Gamma m + \Gamma n}$

c) $\beta(m,n) = \frac{\Gamma m \Gamma n}{\Gamma(m+n)}$ d) $\beta(m,n) = \frac{\Gamma(m+n)}{\Gamma m \Gamma n}$

99) The value of $P_0(x)$ is

a) x   b) x^2 c) $(3x^2-1)/2$ d) 1

100) The probability of getting a king while drawing a card at random from a pack of 52 cards is

a) $\frac{4}{3}$ b) $\frac{1}{13}$ c) $\frac{1}{52}$ d) $\frac{1}{26}$

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