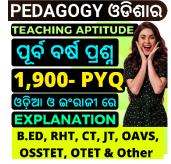




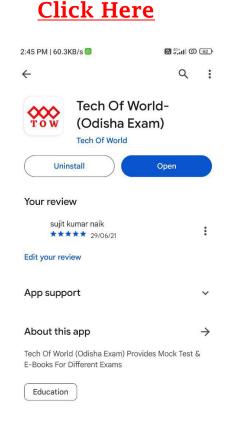


JT, RHT & Other Exams









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- The quantitative definition of force can be obtained from which of the Newton's laws of motion?
 - (A) 1st law
 - (B) 2nd law
 - (C) 3rd law
 - (D) None of the laws
- A body of mass 5 kg moving with velocity 2 m/s comes to rest within a distance of 6 m. The work done during the process is:
 - (A) 10 J
 - (B) 15 J
 - (C) 20 erg
 - (D) 30 erg
- 3. A venturi meter works on the principle of:
 - (A) Newton's law
 - (B) Joule's law
 - (C) Pascal's law
 - (D) Bernoulli's law
- In a dynamo the transformation of energy is:
 - (A) From mechanical to electrical
 - (B) From electrical to mechanical
 - (C) From chemical to electrical
 - (D) From electrical to thermal

- 5. Ohm's law is applicable to a:
 - (A) Semiconductor
 - (B) Superconductor
 - (C) Metallic Conductor
 - (D) Junction diode
- 6. A body of mass 2 kg and electrical charge 5C is moved through a potential difference of 6 V. The energy gained by the body is:
 - (A) 60 J
 - (B) 30 J
 - (C) 300 erg
 - (D) 600 erg
- 7. Lenz's law of electromagnetic induction is consistent with the conservation of:
 - (A) Mass
 - (B) Charge
 - (C) Momentum
 - (D) Energy
- The velocity of sound in air at STP is nearly:
 - (A) 100 m/s
 - (B) 300 m/s
 - (C) 500 m/s
 - (D) 800 m/s









- In Young's double slit experiment, if the separation between the slits is doubled (within the wavelength range), then the fringe width is:
 - (A) Unchanged
 - (B) Halved
 - (C) Doubled
 - (D) None of the above
- 10. If the temperature of a black body is doubled, then its radiant emittance becomes:
 - (A) Same as original value
 - (B) Twice of the original value
 - (C) Four times the original value
 - (D) Sixteen times the original value
- 11. If Mg atom having atomic no. 12 has an isotope of mass no. 26, then the no. of proton, neutron and electron respectively are:
 - (A) 12, 12, 14
 - (B) 12, 14, 12
 - (C) 14, 12, 12
 - (D) 12, 12, 12
- 12. Iso-electronic species are:
 - (A) CO, CN-, NO+, C2-
 - (B) CO, CN, NO, C2
 - (C) CO+, CO+, NO+, C2
 - (D) CO, CN, NO, C2

- 13. How many σ and π bonds are present in CaC₂?
 - (A) 2σ, no π
 - (B) 3σ , 2π
 - (C) 2σ , 2π
 - (D) 3σ, 1π
- 14. Which of the following has maximum no. of unpaired electrons?
 - (A) Mg²⁺
 - (B) Ti³⁺
 - (C) V3+
 - (D) Fe²⁺
- 15. Which one of the following oxides is neutral?
 - (A) CO
 - (B) SnO₂
 - (C) ZnO
 - (D) SiO₂
- 16. N₃H is represented as



Nitrogen attached with double bonds has oxidation number:

- (A) 0
- (B) + 3
- (C) 2
- (D) 3









17. $2MNO_4^- + aH^+ + bH_2O_2 \rightarrow 2Mn^{2+} + cH_2O + dO_2$

What are the values of a, b, c, and d respectively?

- (A) 3, 5, 4, 5
- (B) 6, 5, 8, 5
- (C) 3, 1, 4, 1
- (D) 1, 5, 4, 5
- 18. Reduction of thiosulfate with iodine gives:
 - (A) Sulfate ion
 - (B) Sulfite ion
 - (C) Tetrathionate ion
 - (D) Sulfide ion
- 19. The indicator used in iodometric titration is:
 - (A) Phenolphthalein
 - (B) Methyl orange
 - (C) Starch
 - (D) Litmus
- 20. For the equation NO₃⁻ + 4H⁺ + e → 2H₂O + NO. The no. of electrons in its balanced form would be:
 - (A) 5
 - (B) 4
 - (C) 3
 - (D) 2

- 21. Which of the following is responsible for modifying and packaging of proteins and lipids?
 - (A) Mitochondria
 - (B) Golgi Complex
 - (C) Endoplasmic Reticulum
 - (D) Peroxisome
- 22. Which of the following Vitamins is not obtained from plants?
 - (A) Thiamine
 - (B) Pyridoxin
 - (C) Cyanocobalamine
 - (D Riboflavin
- 23. In Pteridophytes development of sporophyte from gametophytic tissue without involving gametic fusion is known as:
 - (A) Apospory
 - (B) Parthenocarpy
 - (C) Heterospory
 - (D) Apogamy
- 24. The fungus commonly known as Baker's Yeast is:
 - (A) Saccharomyces octosporus
 - (B) Saccharomyces cerevisial
 - (C) Saccharomyces luduwigii
 - (D) All of the above







- 25. The plant that commonly known as horse tail is:
 - (A) Equisetum
 - (B) Marsilea
 - (C) Selaginella
 - (D) Pteris
- 26. Which of the following is not an inexhaustible resource?
 - (A) Sunlight
 - (B) Wind
 - (C) Tidal energy
 - (D) Coal
- 27. Normally the endosperm in angiosperm is:
 - (A) Diploid
 - (B) Haploid
 - (C) Triploid
 - (D) Hexaploid
- 28. Which of the following is an essential fatty acid?
 - (A) Palmitic Acid
 - (B) Linoleic Acid
 - (C) Acetic Acid
 - (D) Citric Acid
- 29. The type of energy obtained from hot springs is:
 - (A) Geothermal energy
 - (B) Solar energy

- (C) Tidal energy
- (D) Hydro energy
- 30. Which of the following is not a viral disease?
 - (A) Measles
 - (B) Hepatitis
 - (C) Rubella
 - (D) Leprosy
- 31. Zooplanktons are:
 - (A) Producers
 - (B) Primary Consumers
 - (C) Secondary Consumers
 - (D) Decomposers
- 32. Which of the following is a non symbiotic nitrogen fixing aerobic bacteria?
 - (A) Clostridium
 - (B) Frankia
 - (C) Azotobacter
 - (D) Rhizobium
- 33. Minamata disease was caused in Japan due to the poisoning of :
 - (A) Arsenic
 - (B) Nickel
 - (C) Lead
 - (D) Mercury









- 34. How many teeth grow only once in the own that life of a human being?
 - (A) 8
 - (B) 12
 - (C) 20
 - (D) 32
- 35. Which is not a part of alimentary canal?
 - (A) Jejunum
 - (B) Ilium
 - (C) Gizzard
 - (D) Crop
- 36. Deficiency of which hormone causes diuresis?
 - (A) Oxytocin
 - (B) Relaxin
 - (C) Renin
 - (D) Vasopressin
- 37. The clinical term for severe frequent cramping during menstruation is:
 - (A) Amenorrhea
 - (B) Menorrhagia
 - (C) Oligomenorrhea
 - (D) Dysmenorrhea
- 38. The coating of fine hairs on the body of human foetus is called:
 - (A) Lanugo
 - (B) Fur

- (C) Scutes
- (D) Vernix
- 39. During inspiration in mammals, the diaphragm:
 - (A) .Expands
 - (B) Contracts
 - (C) Relaxes
 - (D) Shows no change
- 40. The statement "Eating on the same table" is true for :
 - (A) Amensalism
 - (B) Mutualism
 - (C) Parasitism
 - (D) Commensalism
- 41. A rational number $\frac{p}{q}$ (q ≠ 0) can be expressed as a terminating decimal, if the prime factorization of q is of the form:
 - (A) 2^m3ⁿ (m and n are non-negative integers)
 - (B) 2^m5ⁿ (m and n are non-negative integers)
 - (C) 3^m5ⁿ (m and n are non-negative integers)
 - (D) 5^m7ⁿ (m and n are non-negative integers)









- numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and 15 as the remainder.
 Which one of the following is the smaller number?
 - (A) 360
 - (B) 295
 - (C) 270
 - (D) 240
- 43. What is the number of proper subsets of the set $P \cup Q$, where $P = \{1, 2, 5, 7\}$ and $Q = \{2, 4, 6\}$?
 - (A) 31
 - (B) 63
 - (C) 64
 - (D) 127
- 44. If the set P contains 5 elements and the set Q contains 6 elements, then what is the number of one-one and onto functions from P to Q?
 - (A) 720
 - (B) 120
 - (C) 30
 - (D) 0
- 45. How many equivalence relations can be defined on the set S = { 1, 2, 3}?
 - (A) 3
 - (B) 5

- (C) 7
- (D) 8
- 46. Suresh, Dinesh and Ramesh became partners in a business by investing money in the ratio 3:6:8. If their investments are increased by 5%, 15% and 20% respectively, then what will be the ratio of their profits in one year?
 - (A) 7:46:64
 - (B) 19:46:64
 - (C) 21:46:64
 - (D) 35:46:64
- 47. In a bag, there are coins of 5 ps, 10 ps and 25 ps in the ratio 3 : 2 : 1. If all the coins in the bag amounts to Rs. 60.00, then how many 5 ps coins are there?
 - (A) 100
 - (B) 200
 - (C) 300
 - (D) 400
- 48. If $\log_x y = 100$ and $\log_2 x = 10$, then what is the value of y?
 - (A) 2
 - (B) 2^{10}
 - (C) 2¹⁰⁰
 - (D) 2¹⁰⁰⁰









- 49. What is the value of $(256)^{0.16}$ × $(256)^{0.09}$?
 - (A) 256.25
 - (B) 64
 - (C) 16
 - (D) 4
- 50. If $\tan \theta = \frac{3}{4}$ for some θ (0 < θ < 90°), then what is the value of $\sin \theta$?
 - (A) $\frac{1}{5}$
 - (B) $\frac{2}{5}$
 - (C) $\frac{3}{5}$
 - (D) $\frac{4}{5}$
- 51. If $\log_3 (x^4 x^3) \log_3 (x 1) = 3$, then what is the value of x?
 - (A) 9
 - (B) 6
 - (C) 3
 - (D) 1
- 52. What is the value of the expression: $\sin^2(1^\circ) + \sin^2(11^\circ) + \sin^2(21^\circ) + \sin^2(31^\circ) + \sin^2(41^\circ) + \sin^2(45^\circ) + \sin^2(49^\circ) + \sin^2(59^\circ) + \sin^2(69^\circ) + \sin^2(79^\circ) + \sin^2(89^\circ)?$
 - (A) 4
 - (B) $4\frac{1}{2}$

- er(C) 5
 - (D) $5\frac{1}{2}$
- - 4, 5, 6}, then what is the total number of elements in S?
 - (A) 21
 - (B) 23
 - (C) 32
 - (D) 36
- 54. The angle of elevation of a ladder leaning against a wall is 60°. If the foot of the ladder is 4.6 m away from the wall, then what is the length / height of the ladder?
 - (A) 2.3 m
 - (B) 4.7 m
 - (C) 7.8 m
 - (D) 9.2 m
- 55. If one of the roots of the equation $3x^2 + px + 3 = 0$ (p > 0) is the square of the other root, then what is the value of p?
 - (A) 3
 - (B) 1
 - (C) $\frac{2}{3}$
 - (D) $\frac{1}{3}$









- 56. What is the remainder when the polynomial $x^{200} + 1$ is divided by $x^2 + 1$?
 - (A) $x^2 1$
 - (B) 2x + 1
 - (C) 2
 - (D) 1
- 57. If the system of linear equations

 5x + my = 10 and 4x + ny = 8 (m, n are
 positive integers) have infinitely many
 solutions, then the minimum possible
 value of (m + n) is:
 - (A) 11
 - (B) 9
 - (C) 7
 - (D) 5
- 58. A wire is bent to form a square of side 22 cm. If the wire is rebent to form a circle, then its radius will be?

$$\left(\text{Use }\pi=\frac{22}{7}\right)$$

- (A) 22 cm.
- (B) 14 cm.
- (C) 11 cm.
- (D) 7 cm.
- 59. Which one of the following is an obtuse angle?
 - (A) $\frac{11}{21}$ of a right angle

- (B) $\frac{8}{20}$ of a complete rotation
- (C) $\frac{11}{21}$ of a complete rotation
- (D) $\frac{8}{20}$ of a right angle
- 60. PQR is a right angled triangle right angled at Q with PQ = 6 cm. and QR = 8 cm. What is the radius of the circle with center at O inscribed inside the triangle PQR?
 - (A) 4 cm.
 - (B) 3 cm.
 - (C) 2 cm.
 - (D) 1 cm.

Read the passage carefully and answer the questions (Q. Nos. 61 to 64) choosing the correct alternative:

These days our world seems to be in the grip of speed. Everyone is in a great hurry to reach somewhere; God knows where and why. Out on the roads, fast moving vehicles are driven faster; pedestrians also appear to be running instead of walking, queue or no queue; hefty people push their way through the crowd, injuring or hurting women, old people or even small children. Doctors, lawyers, and even shopkeepers are in such a hurry that they have no time to listen to anyone patiently. People have







at home and so 'superfast' food joints have sprung up. No surprise then that so many suffer from hypertension or heart diseases. Even nature seems to have joined this race. Years, months, weeks and days seem simply to fly away as if to take mankind faster to the new Century promising a brighter and happier era.

- 61. Who don't care for others while walking through the crowd?
 - (A) Small children
 - (B) Old men
 - (C) Young women
 - (D) Hefty people
 - 62. How do pedestrians look like on the road?
 - (A) Walking
 - ant (B) Jogging a rain was also sand
 - (C) Running strong and hance to a
 - (D) Gliding
 - 63. Why have 'superfast' foods become popular?
 - (A) People have no time to have their food peacefully at home
 - (B) People have no time to cook food
 - (C) People don't want to cook food
 - (D) People don't like food cooked at

- no time even to have their food peacefully viub 64. What, according to the author, does the new Century seem to promise?
 - (A) A life of comfort
 - (B) An era of hypertension or heart diseases
 - (C) A brighter and happier time
 - (D) Long and noble life

Answer the questions (Q. Nos. 65 to 70) choosing the correct alternative:

- 65. The word which means the same as peaceful is:
 - (A) Noisy
 - (B) Wild
 - (C) Restless
 - (D) Calm
- 66. The word opposite in meaning to 'Bold'
 - (A) Brave
 - (B) Daring
 - (C) Timid
 - (D) Fatal
- 67. One who cannot read and write is
 - (A) Illegible
 - (B) Illiterate
 - (C) Illegal
 - (D) Illicit









68. One should do _____duty sincerely.

Pick out the correct word to complete the sentence:

- (A) his
- (B) her
- (C) their
- (D) one's
- 69. As soon as the siren blew, the firemen dashed towards their vehicle. This sentence can be rewritten using 'No sooner' as:
 - (A) No sooner the siren blew, the firemen dashed towards their vehicle.
 - (B) No sooner the siren blew than the firemen dashed towards their vehicle.
 - (C) No sooner did the siren blow than the firemen dashed towards their vehicle.
 - (D) No sooner than the siren blew the firemen dashed towards their vehicle.
- 70. The workers are not to be blamed for the loss. The supervisor is also not to be of blamed for the loss. Combining these two sentences into a single sentence using 'Neither... nor' we get:
 - (A) Neither the workers nor the supervisor is blamed for the loss.

- (B) Neither the workers nor the supervisor is to be blamed for the loss.
- (C) Neither the workers nor the supervisor are to be blamed for the loss.
- (D) Neither the workers nor the supervisor are blamed for the loss.
- 71. "The Origin of Life" book was written by:
 - (A) Charles Darwin
 - (B) A. I. Oparin
 - (C) G. J. Mendel
 - (D) Louis Pasteur
- 72. World Malaria Day is observed on :
 - (A) 25th January
 - (B) 25th March
 - (C) 25th April
 - (D) 1st December
- 73. In terms of event and year of occurrence identify the wrong pair:
 - (A) Foundation of C.S.I.R.: 1942
 - (B) Demonetisation of Indian Currency notes: 2015
 - (C) Implementation of G.S.T.: 2017
 - (D) Removal of Article 370: 2019







- 74. Name the Union Minister for Science and Technology is:
 - (A) Aswini Vaishnav
 - (B) Nitin Gadkari
 - (C) Jitendra Singh
 - (D) Piyush Goel
- 75. On which day the Constituent Assembly commenced its functioning?
 - (A) 9th December, 1946
 - (B) 26th January, 1947
 - (C) 15th August, 1947
 - (D) 9th December, 1947
- 76. Which country is not a part of Troika of G-20 Summit to be held in 2023?
 - (A) Brazil
 - (B) Indonesia
 - (C) India
 - (D) Italy
- 77. In which of the following cities is NAAC situated?
 - (A) New Delhi
 - (B) Bangalore
 - (C) Mumbai
 - (D) Kolkata
- 78. Who was associated with laying down minimum levels of learning at elementary stage?
 - (A) Prof. R.H.Dave

- (B) Prof. Yashpal
- (C) Prof. Ved Prakash
- (D) Acharya Ramamurthy
- 79. Which of the following Commissions recommended for establishment of U.G.C. in India?
 - (A) Indian University Commission (1902)
 - (B) Calcutta University Commission (1917)
 - (C) University Education
 Commission (1948-49)
 - (D) Mudaliar Commission (1952-53)
- 80. The middle stage of education as per N.E.P-2020 covers which age group of students?
 - (A) Ages 8 to 10
 - (B) Ages 9 to 11
 - (C) Ages 10 to 12
 - (D) Ages 11 to 14
- 81. If the sequence of the letters in English Alphabet is reversed, which letter would be the 10th letter after the 5th letter from right?
 - (A) M
 - (B) L
 - (C) K
 - (D) N









- 82. If 'CAT' and 'BOAT' are written as 'XZG' and 'YLZG' respectively in a code language, how is 'EGG' to be written in the same language?
 - (A) VSS
 - (B) URR
 - (C) VTT
 - (D) UFF
- 83. In the following question, one statement is followed by two arguments. Find the correct answer from the given alternatives:

Statement: 'Nudity be shown in Indian Films'.

Arguments: (a) It is being shown all over the world.

- (b) It will damage the moral fibre of Indian Society.
- (A) Only statement(a) is strong.
- (B) Only statement(b) is strong.
- (C) Neither argument(a) nor (b) is strong.
- (D) Both arguments(a) and (b) are strong.
- 84. Naga is taller than Puspa, but not as tall as Manu. Rama is taller than Nita, but not as tall as Puspa. Who among them is tallest?
 - (A) Manu
 - (B) Puspa
 - (C) Naga
 - (D) Rama

- 85. Indra is 7th from the left and Jaya is 5th from the right. When they interchange their positions, Jaya becomes 19th from the right. What is Indra's position from left?
 - (A) 21st
 - (B) 19th
 - (C) 20th
 - (D) 23rd
- 86. If 'BAT' is coded as 283, CAT is coded as 383, ARE is coded as 801, then the code for 'BETTER' is:
 - (A) 213310
 - (B) 213301
 - (C) 012334
 - (D) 123301
- 87. If selling price is doubled, the profit triples. Find the profit percent.
 - (A) 66.6
 - (B) 100
 - (C) 105.3
 - (D) 120
- 88. If the 7th day of a month is 3 days earlier than Friday, what day will it be on the 19th day of the month?
 - (A) Sunday
 - (B) Monday
 - (C) Wednesday
 - (D) Friday









- 89. In how many ways you can post 3 letters in 4 letter boxes?
 - (A) 68
 - (B) 64
 - (C) 81
 - (D) 12
- 90. What least number must be added to 1056 so that the sum is completely divisible by 2, 3 and 5?
 - (A) 24
 - (B) 18
 - (C) 48
 - (D) 56
- 91. Development of which of the following abilities in human beings is facilitated by brainstorming?
 - (A) Positive thinking
 - (B) Divergent thinking
 - (C) Convergent thinking
 - (D) Active thinking
- 92. An explanation involves giving:
 - (A) Antecedents to a subsequent
 - (B) Consequences to an antecedent
 - (C) Antecedents to a consequence
 - (D) Consequences to a subsequent
- 93. A student is solving a problem in Mathematics. What is he/she contributing to?
 - (A) Affective learning

- (B) Cognitive learning
- (C) Conative learning
- (D) Psychomotor learning
- 94. Which of the following is not a characteristic of teaching profession?
 - (A) Social Service
 - (B) Skills
 - (C) Authority
 - (D) Organization
- 95. Which strategy is best applicable for teaching 'skill of asking questions to students'?
 - (A) Personalized system of instruction
 - (B) Programmed instruction
 - (C) Simulation
 - (D) Microteaching
- 96. Student-centric classroom is meant
 - (A) Addressing individual differences
 - (B) Engaging the students of the entire class
 - (C) Helping students to recall their previous knowledge
 - (D) Reducing the teacher-oriented lectures









- 97. During presentation in a classroom, a teacher gives a lot of positive and negative examples. This is related to which level of learning?
 - (A) Reflective level
 - (B) Understanding level
 - (C) Memory level
 - (D) Autonomous development level
- 98. Suppose you are teaching a topic in the class and a student asks a question unrelated to the topic. What will you do?
 - (A) You will encourage him to ask such questions to develop fearlessness in the student.
 - (B) You will disallow him to ask such questions so as to save time for discussion on topic related questions.

- (C) You will consider it as a case of indiscipline and report it to his/ her parents.
- (D) You will answer the question after the class.
- 99. 'Spare the rod and spoil the child' gives the message that:
 - (A) Undesirable behaviour should be punished.
 - (B) The teacher is friendly to the students.
 - (C) It is an activity-centred class.
 - (D) There is more freedom and flexibility in classroom teaching.

100.C.I.E.T. stands for:

- (A) Centre for Integrated Education and Technology
- (B) Central Institute for Engineering and Technology
- (C) Central Institute of Educational Technology
- (D) Centre for Integrated Evaluation
 Techniques







