

Section 1 - Paper I - General English

1) Select the correct sentence from the following.

- A) The mother break into when she heard the bad news.
 - B) The cupboard break into the house.
 - C) The burglar broke into the big house last night.
 - D) The crockery broke into the kitchen.
-

2) Fill in the blank with an appropriate option.

In spite of his broken leg, he managed toup all his strength to save the puppy from the fire.

- A) hunt
 - B) think
 - C) rule
 - D) muster
-

3) 'To have a reputation of the worst kind', what does this phrase mean?

- A) Notorious
 - B) Popular
 - C) Graceful
 - D) Respectable
-

4) Fill in the blank with an appropriate option.
Wow! She found her dream man and has now landed an amazing job: she really does have.....

- A) apple of the eye
 - B) to pick a quarrel
 - C) pillar to post
 - D) best of both worlds
-

5) Fill in the blank with an appropriate option.

We say 'when someone is a legend', it means he is a/an.....

- A) oblivion
- B) obscure
- C) phenomenon
- D) anonymity

Read the below passage and answer the questions that follow:

A recent report shows that about 70% of the water in the country is contaminated. This is a matter of grave concern. Inadequate access to potable water leads to the loss of thousands of lives each year. Access to water that is free of pathogens and other contaminants is of paramount importance to the health of people of the country. In this respect, the Government must take up harvesting rain water on a serious scale.

Rainwater is allowed to run free, inundating various places across the country annually, whereas people suffer for the want of water each summer. It is thus important to divert water during the monsoons to tank bunds. Once adequate facilities are created for storing water, necessary steps should also be taken to purify and distribute it among people.

6) Which of these words in the passage means 'drinkable'?

- A) Contaminated
 - B) Harvesting
 - C) Potable
 - D) Pathogens
-

7) Why is 70% of water in the country unsafe to drink?

- A) It is free of pathogens
 - B) The rainwater is not purified
 - C) The water is contaminated
 - D) The water tanks are not cleaned
-

8) Where should water be diverted to during monsoons?

- A) Irrigation canals
- B) Rivers and lakes
- C) Tank bunds
- D) Underground drains

9) What reason has been given for the loss of thousands of lives each year?

- A) Inadequate access to potable water
 - B) Rations are pilfered by middlemen
 - C) Severe drought during summer
 - D) Infant mortality rate is high
-

10) What remedy has been suggested that, the government must take up?

- A) Harvesting rain water
- B) Building dams
- C) Improving the water supply system
- D) Setting up water purification plants

Section 2 - Paper I - Education and General Awareness

11) As of June 2018, who among the following is the Vice President of India?

- A) Ram Nath Kovind
 - B) Dr. D. Subbarao
 - C) Sarbananda Sonowal
 - D) M. Venkaiah Naidu
-

12) Which gland in the human body is called the '**Master Gland**'?

- A) Thyroid
 - B) Pituitary gland
 - C) Pancreas
 - D) Adrenal gland
-

13) The Ministry of Human Resources Development, Govt. of India had constituted the Yashpal committee in February 2008 to

- A) raise the standard of Elementary Education in India
 - B) encourage the new ideas and research activities in India
 - C) advise renovation and rejuvenation of Higher Education in India
 - D) separate research activities from teaching in India
-

14) After witnessing a sharp decline in the sex-ratio in some districts of India, the Government of India introduced a programme in January 2015. Identify this programme from the following options.

- A) BetiBachao, Betipadhao
 - B) BetiPaalo, Bethi padhao
 - C) Sukanya Samridhi Yojna
 - D) Mukhyamantri Rajshri Yojna
-

15) Which of the following is a nodal agency for overall planning and management and funding of Adult Education Programmes and institutions in India?

- A) National Literacy Mission Authority
- B) Department of Secondary Education
- C) National Bureau of Adult Education
- D) Department of Literacy of India

Section 3 - PaperI-Reasoning

16) Komal is the maternal aunt of Kriti. Kriti's sister is the niece of Pankaj. Kriti's mother has no brothers. Pankaj is

- A) Komal's husband
 - B) Kriti's husband
 - C) Komal's brother
 - D) Kriti's father
-

17) If the speed of the boat is 8 kmph and that of the stream is 6 kmph, then the downstream speed in kmph is

- A) 14
 - B) 38
 - C) 31
 - D) 41
-

18) In the following question, 4th number is related to the 3rd number in a similar way, like the way 2nd number related to the 1st number. Which is the 4th number among the four options?

12 : 1728 :: 17 : ?

- A) 6859
 - B) 2197
 - C) 4913
 - D) 4096
-

19) If SUIT is coded as TVHS, then MOON will be coded as

- A) NPNN
 - B) NONM
 - C) NPOM
 - D) NPNM
-

20) If PHUKET is coded as OGTLFU, then PANAMA will be coded as

- A) OZMBAC
- B) OZBNBN
- C) OZBMN
- D) OZMBNB

Section 4 - Paper I-Teaching Aptitude

21) When Mrs Shyama, the class teacher realized that she was not being able to help Rani, a student of Class 4, she understood that it was some emotional problem that Rani was facing. She decided to seek help. Who would she approach?

- A) Doctor
 - B) Subject teacher
 - C) School counsellor
 - D) Principal
-

22) "Micro teaching is a scaled down teaching encounter in class size and class time," said

- A) Griffiths
 - B) Shore
 - C) Allen
 - D) Jangira
-

23) At the preschool level, which of the following is a very popular methodology of imparting education to children?

- A) Demonstration
 - B) Self learning method
 - C) The play-way method
 - D) The lecture method
-

24) When education is acquired without any specific purpose, fixed period and place, it is known as

- A) Independent Education
 - B) Informal education
 - C) Formal education
 - D) Direct education
-

25) In India, there are various bodies governing school education system such as Islamic Madrasah schools, whose boards are controlled by local state governments, or autonomous, or affiliated with

- A) Al-Maqar, Darul Aman
- B) Al-Azhar
- C) Darul Uloom Deoband.
- D) Jamia Nizamia

26) Which of the following is a source of physical discomfort which acts as a major deterrent in the secondary education, especially for girls?

- A) Absence of toilets and sanitary requirements
 - B) Long school hours
 - C) Corporal Punishment
 - D) Poor communication skills
-

27) The cognitive framework that is present in the mind of a learner is called

- A) blue print
 - B) pillars
 - C) schema
 - D) designs
-

28) Ms Preet, the new class teacher always reinforced the girls in her class even if they were wrong but not the boys even when they gave correct responses. This was a case of

- A) Gender popularity
 - B) Gender strength
 - C) Gender survival
 - D) Gender bias
-

29) Which of the following words are by Woodworth?

- A) The principal factor in the process of development is the child himself, and that he can make what use he will of his hereditary endowment and his educational opportunities
- B) The Environment is everything that affects the individual except the genes
- C) Heredity may be defined as what one gets from his ancestral stock through his parents
- D) Heredity covers all the factors that were present in the individual when he began life not at birth but at the time of conception about nine months before birth

30) In North India, who started a movement with the main aim of introducing Western education to the Muslims?

- A) Dr. Zakir Hussain
- B) Fakhruddin Ahmed
- C) Sir Syed Ahmed khan
- D) Abul Kalam Azad

Section 5 - PaperII-Physical Science

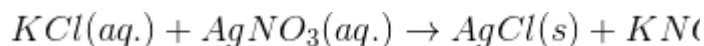
31) Which force will act on the player, when a football player who is moving northward suddenly turns westward with the same speed to avoid an opponent?

- A) Muscle force along southward
 - B) Frictional force along westward
 - C) Frictional force along south west
 - D) Muscle force along southwest
-

32) Which of the following formula chemically represents *rust*?

- A) FeO
 - B) Fe₂O₃
 - C) FeO.3H₂O
 - D) FeOOH
-

33) Which of the following types of reactions does the following reaction depict?



- A) Substitution reaction
 - B) Metathesis reaction
 - C) Combination reaction
 - D) Redox reaction
-

34) A body of 2kg is initially at rest. If a constant force of 5 N acts on it for 10 seconds, then what will be the average power of the force?

- A) 62.5 Watt
 - B) 50 Watt
 - C) 125 Watt
 - D) 25 Watt
-

35) If a_0 is the Bohr radius of the hydrogen atom, then the radius of the Bohr's first orbit of Li^{2+} is

- A) $3a_0$
- B) a_0
- C) $\frac{a_0}{3}$

D) $\frac{a_0}{9}$

36) What will be the potential gradient if specific resistance of a potentiometer wire is 10^{-7} ohm meter and current in the primary circuit of a potentiometer wire is 0.1A? (cross section area of the potentiometer wire is $10^{-6} m^2$)

- A) 10^{-8} V/M
 - B) 10^{-4} V/M
 - C) 10^{-2} V /M
 - D) 10^{-6} V/M
-

37) Baking soda is widely used in baking. The chemical formula of baking soda is

- A) Na₂CO₃
 - B) NaOH
 - C) CaCO₃
 - D) NaHCO₃
-

38) Arrange the following metal in the decreasing order of their reactivity:

Mg, K, Pb, Cu, Au

- A) Au, Cu, K, Mg, Pb
 - B) K, Mg, Pb, Cu, Au
 - C) Au, K, Cu, Mg, Pb
 - D) Mg, K, Cu, Pb, Au
-

39) A compound contains 54.52% C, 9.17% H and 36.31% O. Find its empirical formula.

- A) C₂H₄O
- B) C₂H₂O
- C) C₂H₂O₂
- D) C₆H₁₂O₆

40) Specific charge of an electron is

- A) $1.76 \times 10^{11} C/kg$
 - B) $1.6 \times 10^{-19} C$
 - C) $9.11 \times 10^{-31} kg$
 - D) $5.69 \times 10^{-12} kg/C$
-

41) When copper metal is treated with dilute nitric acid, copper(II)nitrate and nitric oxide forms. Find the coefficient of copper(II)nitrate in the balanced equation of this reaction.

- A) 2
 - B) 4
 - C) 1
 - D) 3
-

42) Which of the following transitions of the hydrogen atom gives an absorption line of highest frequency?

- A) $n = 3$ to $n = 4$
 - B) $n = 1$ to $n = 4$
 - C) $n = 6$ to $n = 3$
 - D) $n = 3$ to $n = 1$
-

43) What is the molality of a 3 M solution of NaCl having a density 1.25 g/mL. The molar mass of NaCl is 58.5 g/mL

- A) 2.79 m
 - B) 4.23 m
 - C) 1.5 m
 - D) 3.92 m
-

44) Which of the following has the higher ionisation energy number in terms of Enthalpy / kJ mol^{-1}

- (i) Fluorine
- (ii) Chlorine

- A) (i) and (ii) have equal ionisation energies
- B) (i) only
- C) (ii) only
- D) There is no ionisation enthalpy in (i) or (ii)

45) How many moles of methane are required to produce 22 g of CO_2 after combustion?

- A) 1
 - B) 2
 - C) 1.5
 - D) 0.5
-

46) If in a voltmeter there are 20 divisions between 0 to 0.5, what is the least count of voltmeter?

- A) 0.025
 - B) 0.05
 - C) 0.25
 - D) 0.002
-

47) Two liquids of equal masses one at 20°C and the other at 40°C are mixed together. The temperature of the mixture is 32°C . The ratio of their specific heats is

- A) 3:2
 - B) 1:1
 - C) 1:3
 - D) 2:3
-

48) What is the unit of Rydberg constant?

- A) s^{-1}
 - B) m^{-1}
 - C) ms^{-1}
 - D) ms^{-2}
-

49) If a person in an elevator accelerating upwards with an acceleration of 2ms^{-2} tosses a coin vertically upwards with a speed of 20ms^{-1} , then after how much time will the coin fall back in to his hand? ($g=10\text{ms}^{-2}$)

- A) 5.55 S
- B) 1.55S
- C) 25.5 S
- D) 3.33 S

50) Hund's Rule states that if two or more empty orbitals of equal energy are available,

- A) one electron must be placed in each orbital until they are all filled
- B) two electrons must be placed in each orbital until they are all filled
- C) one electron must be placed in each orbital until they are all half-filled
- D) two electrons must be placed in each orbital until they are all half-filled

Section 6 - PaperII-Biological Science

51) As per five kingdom classification, bacteria are included in the kingdom of

- A) Protista
 - B) Plantae
 - C) Monera
 - D) Fungi
-

52) Which one of the following is NOT a main approach for conservation of water?

- A) Recycling of used water in industries
 - B) Overuse of water
 - C) Harvesting of rain water
 - D) Reduction in domestic water wastage
-

53) Name the conventional sources of energy from the following

- A) Water
 - B) Nuclear energy
 - C) Natural gas
 - D) Solar energy
-

54) Which of the following statements is FALSE regarding Angiosperms?

- A) Seed is produced by flowering plants and is enclosed within ovary
 - B) Reproductive system present in flowers
 - C) Lifecycle of these plants are seasonal
 - D) Seed is produced by non-flowering plants and are unenclosed or naked
-

55) In which of the following ecological pyramid the all ecosystem is always upright?

- A) Pyramid of cycle
- B) Pyramid of biomass
- C) Pyramid of number
- D) Pyramid of energy

56) Which of the following is a type of mitosis in which nuclear membrane is disintegrated and spindle is formed outside nuclear membrane?

- A) Endomitosis
 - B) Eumitosis
 - C) Anastral mitosis
 - D) Dinomitosis
-

57) Which of the following is NOT an example of a fossil fuel?

- A) Coal
 - B) Natural Gas
 - C) Solar energy
 - D) Petroleum
-

58) Which of the following is a precursor of indole-3-acetic acid?

- A) Alanine
 - B) Glycine
 - C) Tryptophan
 - D) Threonine
-

59) 'The study of organisms in relation to their environment'. This definition related to ecology was given by

- A) Elton
 - B) R. Misra
 - C) Warming
 - D) Odum
-

60) The ability of an ecosystem to resist disturbances and maintain its structure and functions intact is termed as

- A) buffer capacity
- B) resilience stability
- C) resistance stability
- D) ecological niche

61) Which of the following type of rocks does NOT belong to the metamorphic rock?

- A) Phyllite
 - B) Shale
 - C) Quartzite
 - D) Slate
-

62) The percentage of usable energy transferred as biomass from one trophic level to the next is referred as

- A) habitat
 - B) ecological niche
 - C) ecological efficiency
 - D) food chain
-

63) Which of the following cell organelle is semi-autonomous in nature?

- A) Chloroplast
 - B) Golgi bodies
 - C) Peroxisomes
 - D) Vacuole
-

64) Which of the following cell organelles is CORRECTLY matched with its function?

- A) Mitochondria – Lipid synthesis
 - B) Lysosomes – Protein synthesis
 - C) Chloroplast – Photosynthesis
 - D) Ribosomes – ATP synthesis
-

65) Which of the following gas protects life on Earth from Sun's ultraviolet radiation?

- A) Hydrogen
 - B) Nitrogen
 - C) Carbon dioxide
 - D) Ozone
-

66) Which of the following cells are specialized to contract and relax so as to move body parts in Animal cells?

- A) Kidney cell
- B) Skin cell
- C) Nerve cell

D) Muscle cell

67) Which of the following statements is FALSE regarding photosynthesis?

- A) It uses carbon dioxide and water
 - B) It occurs in the chloroplasts
 - C) It is an anabolic process
 - D) It is a catabolic process
-

68) The process where ice and snow changes into water vapour without moving through the liquid phase is known as

- A) condensation
 - B) sublimation
 - C) evaporation
 - D) transpiration
-

69) Which of the following Plants is NOT an example of Pteridophytes?

- A) Marsilea
 - B) Horse-tails
 - C) Spirogyra
 - D) Ferns
-

70) "Intramembranous ossification" is a process of bone formation during fetal stage of development and has the following four steps - Identify the INCORRECT step/steps.

- A) Development of periosteum
- B) Formation of cartilage model
- C) Development of ossification center
- D) Formation of trabeculae

Section 7 - PaperII-Mathematics

71) Let R be the relation on the set of natural numbers N defined by $xRy \Leftrightarrow x^2 + 2y = 108$. The relations are given as (a) ${}_{(3/2)}R_{(423/8)}$, (b) ${}_{10}R_4$, (c) ${}_{12}R_{(-18)}$, (d) ${}_9R_{15}$. Which of the following statements is TRUE?

- A) (b) and (d) are correct.
 - B) Only (d) is correct.
 - C) Only (b) is correct.
 - D) (a) and (c) are correct.
-

72) The salaries of A, B and C are in the ratio 2:3:5. If A's salary is increased by 15%, B's salary is decreased by 10% and C's salary is increased by 20%, then the new ratio of their salaries is

- A) 22 : 33 : 60
 - B) 23 : 33 : 60
 - C) 21 : 33 : 60
 - D) 23 : 27 : 60
-

73) The equation $\log_e x + \log_e (1+x) = 0$ can be written as

- A) $x^2 + x - e = 0$
 - B) $x^2 + x - 1 = 0$
 - C) $x^2 + x + 1 = 0$
 - D) $x^2 + x + e = 0$
-

74) In a Rhombus a diagonal is of length 6 cm and a side of length 5 cm. The area of the Rhombus is

- A) 15 sq. cm
 - B) 48 sq. cm
 - C) 24 sq. cm
 - D) 12 sq. cm
-

75) The values of x by solving the quadratic equation $4x^2 + 36x + 81 = 0$ are

- A) $x = 9/2, x = 9/2$
- B) $x = 9, x = 9$
- C) $x = -9/2, x = 9/2$
- D) $x = -9/2, x = -9/2$

76) The value of $\sin 10^\circ \times \sin 30^\circ \times \sin 50^\circ \times \sin 70^\circ$ is equal to

- A) 2/15
 - B) 1/16
 - C) 1/14
 - D) 1/13
-

77) If $\log_{xy} = 100$ and $\log_3 x = 10$, then the value of y is

- A) 100^{10}
 - B) 3^{1000}
 - C) 100^3
 - D) 3^{10000}
-

78) If A and B are two sets such that $A \cup B = A \cap B$, then

- A) $B = \Phi$
 - B) $A = B$
 - C) $A \neq B$
 - D) $A = \Phi$
-

79) Three numbers are in the ratio 1:2:3. If their HCF is 13, then the LCM of the three numbers is

- A) 13
 - B) 39
 - C) 78
 - D) 91
-

80) If the roots of the quadratic equation $x^2 - 5x + 6 = 0$ are 2 and 3, then the equation whose roots are $1/2$ and $1/3$ is

- A) $6x^2 - 5x + 6 = 0$
 - B) $x^2 + 5x + 1/6 = 0$
 - C) $x^2 - 5x + 6 = 0$
 - D) $6x^2 - 5x + 1 = 0$
-

81) If $8^{(x+1)} - 8^{(x-1)} = 126$, then the value of x is

- A) 5/3
- B) 1

- C) 2
 - D) $\frac{4}{3}$
-

82) Three times the first of three consecutive odd integers is 3 more than twice the third. The second and third integers are respectively

- A) 11 and 13
 - B) 15 and 17
 - C) 13 and 15
 - D) 9 and 11
-

83) The least value of $2\sin^2\theta + 3\cos^2\theta$ is

- A) 2
 - B) 3
 - C) 0
 - D) 1
-

84) The value of $\sin 50^\circ - \sin 70^\circ + \sin 10^\circ$ is equal to

- A) 1
 - B) $\frac{1}{2}$
 - C) 2
 - D) 0
-

85) Logarithm of 'yz' to the base 'x' is equal to

- A) (logarithm to the base 'x' of 'y') + (logarithm to the base 'x' of 'z')
 - B) (logarithm to the base 'x' of 'y') \times (logarithm to the base 'x' of 'z')
 - C) (logarithm to the base 'x' of 'y') - (logarithm to the base 'x' of 'z')
 - D) (logarithm to the base 'y' of 'x') - (logarithm to the base 'z' of 'x')
-

86) A man standing at a point P is watching the top of a tower, which makes an angle of elevation of 30° with the man's eye. The man walks some distance towards the tower to watch its top and the angle of elevation becomes 60° . The distance between the base of the tower and the point P is

- A) 12 units
 - B) $4\sqrt{3}$ units
 - C) 8 units
 - D) NOT possible to determine
-

87) Let N be the set of natural numbers, a relation R defined by aRb if $a+b = 7$ then the relation R on the set N is

- A) Symmetric only
 - B) Reflexive and symmetric
 - C) Equivalence relation
 - D) Reflexive only
-

88) If $x^2 - 7x - a$ has a remainder 1 when divided by $(x + 1)$, then

- A) $a = 7$
 - B) $a = -7$
 - C) $a = 6$
 - D) $a = 5$
-

89) If the sides of a triangle measures 12 cm, 16 cm and 20 cm, then the triangle is

- A) an acute triangle
 - B) an isosceles triangle
 - C) an obtuse triangle
 - D) a right triangle
-

90) ABC is a right angle triangle, with $\angle B = 90^\circ$. If $(AB - BC)^2 = 2BC(AC - BC)$, then $\angle C =$

- A) 30°
- B) 45°
- C) 60°
- D) 15°

Answer Key

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