

Section 1 - Paper1-English Language

1) Choose the most appropriate similar meaning word.
BRIEF

- A) Little
- B) Short
- C) Limited
- D) Small

2) Select the correct option.
There is _____ cat under the table.

- A) an
- B) a
- C) no article
- D) the

3) Select the correct form of verb from the given options.
My sister _____ hamburgers: she thinks they're bad for her.

- A) eats
- B) doesn't eat
- C) is eating
- D) will eat

Read the following passage and answer the questions that follow:

Pink in symbolism and culture

According to public opinion surveys in Europe and the United States, pink is the color most associated with charm, politeness, sensitivity, tenderness, sweetness, softness, childhood, the feminine, and the romantic. Although it did not have any strong negative associations in these surveys, few respondents chose pink as their favorite color. Pink was the favorite color of only two-percent of respondents, compared with forty-five-percent who chose blue. Pink was the least-favorite color of seventeen percent of respondents; the only color more disliked was brown, with twenty percent. There was a notable difference between men and women; three percent of women chose pink as their favorite color, compared with less than one percent of men. Many of the men surveyed were unable to even identify pink correctly, confusing it with mauve.

Pink was also more popular with older people than younger; twenty-five percent of women under twenty-five called pink their least favorite color, compared with only eight percent of women over fifty. Twenty-nine percent of men under the age of twenty-five said pink was their least favorite color, compared with eight percent of men over fifty. In Japan, pink is the color most commonly associated with springtime due to the blooming cherry blossoms. This is different from surveys in the United States and Europe where green is the color most associated with springtime. According to surveys in Europe and the United States, pink is the color most associated with sweet foods and beverages. Pink is also one of the few colors to be strongly associated with a particular aroma, that of roses. Many strawberry and raspberry-flavored foods are colored pink and light red as well, sometimes to distinguish them from cherry-flavored foods that are more commonly colored dark red (although raspberry-flavored foods, particularly in the United States, are often colored blue as well). The drink Tab was packaged in pink cans, presumably to subconsciously convey a sweet taste.

4) According to the survey in the passage, Pink colour was the least favourite among

- A) Twenty-five percent of women under twenty-five
- B) Twenty-nine percent of men over fifty
- C) Twenty-nine percent of women under twenty-five
- D) Twenty-nine percent of women over fifty

5) According to public opinion surveys in Europe and the United States, Pink is associated with

- A) Peace
- B) Sympathy
- C) Agility
- D) Femininity

6) According to the surveys in Europe and the United States, pink is associated with

- A) Beverages
- B) Cherry-flavored foods
- C) Mocktails
- D) Spring time

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7) Pink is the colour of spring in Japan because of the

- A) blooming blossoms
 - B) blossom blue flowers
 - C) blooming cherry blossoms
 - D) springtime red blossoms
-

8) In the passage, the Men surveyed confused the colour pink with:

- A) Light Purple
 - B) Mauve
 - C) Lavender
 - D) Rose
-

9) Select the correct form of plural from the given options.

With the 5 Km marathon walk I did this morning, my _____ are hurting.

- A) feets
 - B) foot
 - C) feet
 - D) foots
-

10) Choose the most appropriate similar meaning word.
SHALLOW

- A) Artificial
- B) Superficial
- C) Worthless
- D) Foolish

Section 2 - Paper I - Education and General Awareness

11) Which of the following options an important component of Sarva Siksha Abhiyan (SSA) to bring out-of-school children in the fold of elementary education?

- A) Kasturba Gandhi Balika Vidyalaya Scheme
- B) District Primary Education Programme
- C) Non-Formal Education Scheme
- D) Education Guarantee Scheme

15) The intensity or the magnitude of the earthquakes is measured using

- A) Secant scale
- B) Kepler scale
- C) Beaufort scale
- D) Richter scale

12) Read the following statements and choose the CORRECT option.

- (i) The Preamble of the Indian Constitution gives its citizens social, economic and political Justice.
- (ii) The Preamble of the Indian Constitution gives its citizens liberty of thought, expression, belief, faith and worship.

- A) (i) is TRUE and (ii) is TRUE
- B) (i) is FALSE and (ii) is FALSE
- C) (i) is FALSE and (ii) is TRUE
- D) (i) is TRUE and (ii) is FALSE

13) The basic recommendations of which of the following Policy/Commission was related to free and compulsory education, development and protection of all the Indian languages, equality of educational opportunities and identification of gifted children?

- A) National Commission of Education
- B) New Educational Policy
- C) The Education Commission
- D) National Policy on Education

14) Which of the following commissions was appointed to study the problem of university education in the country and to suggest measures for its reforms?

- A) University Education Commission
- B) Secondary Education Commission
- C) University Higher Education Commission
- D) Indian Education Commission

Section 3 - Paper I-Reasoning

16) What is the Highest Common Factor of 8, 9 and 12?

- A) 1
- B) 72
- C) 2
- D) 3

17) Instruction: Below mentioned are statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements:

All the ministers are presidents.
All the presidents are governors.
Some governors are representatives.

Conclusions:

- I) Some ministers are representatives.
- II) Some representatives are presidents.
- III) All the ministers are governors.
- IV) Some representatives are governors.

- A) Only II and III follow
- B) Only III and IV follow
- C) Only I and IV follow
- D) Only I and II follow

18) Instruction: In the following questions mark:

- 1, if the question can be answered with the help of statement I alone.
- 2, if the question can be answered with the help of statement II alone.
- 3, if the question can be answered with the help of both I and II.
- 4, if the question can't be answered at all.

At what time did the bus arrive at the bus stand today?

Statement I. Today, the bus arrived 10 minutes early.

Statement II. The scheduled arrival of the bus is at 10:20 A.M

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

19) In a certain code language BROWSING is written as BMHRVNQG. How is SWITCHING written in that code language?

- A) SMHGBSHVG
- B) GMHGBSHVG
- C) GNIHCTIWSR
- D) SNIHCTIWG

20) Instruction: Below mentioned are statements followed by some conclusions. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Statements:

All rings are bangles
All bangles are ornaments

Conclusions:

- I) All the ornaments are bangles
- II) All rings are ornaments

- A) Both I & II follow
- B) None of the conclusions follow
- C) Only I follows
- D) Only II follows

Section 4 - Paper1-Teaching Aptitude

21) Students deeply involved with their work. The climate of the classroom is work-oriented, relaxed and pleasant. What would you call such a classroom?

- A) Controlled classroom
- B) Well-Managed classroom
- C) Lecture classroom
- D) Interactive classroom

22) Which of the following is one of the short-term consequences of hitting and shouting at a student in a classroom?

- A) The influence of teachers in the class is strengthened
- B) The students will completely stop misbehaving
- C) Students fail to show permanent improvement in their behaviour.
- D) The students will become aware and accountable for their behaviour

23) Which of the following methods involves exposing a child to a variety of research-based educational interventions and using data points to monitor progress to see how he/she responds?

- A) Flipped Classroom Model
- B) Personalized Learning Method
- C) Functional Assessment Model
- D) The Standard Protocol RTI Model

24) Which of the following options is never considered as a function of NCTE (National Council for Teacher Education) under the Government of India?

- A) Laying down guidelines in respect of minimum qualifications for a person to be employed as a teacher in schools or in recognised institutions
- B) Laying down guidelines regarding tuition fees and other fees chargeable by recognised institutions
- C) Laying down standards in respect of examinations leading to teacher education qualifications, criteria for admission to such examinations and schemes of courses or training
- D) Taking all necessary steps to promote commercialisation of teacher education

25) 'Two or more skills combined, sequenced and performed consistently and with ease', refers to which of the following psychomotor skill as per Dave's taxonomy (1970)?

- A) Imitation
- B) Naturalisation
- C) Articulation
- D) Precision

26) Which of the following objectives related to school education is NOT served by NCERT?

- A) Develop and disseminate innovative educational techniques and practices
- B) Act as a nodal agency for deciding the career path of children
- C) Promote and coordinate research in areas related to school education
- D) Organize pre-service and in-service training of teachers

27) All-India Radio introduced programmes in the year 1929 for children from which of the following stations?

- A) Madras station
- B) Delhi station
- C) Bombay station
- D) Kolkata station

28) Which one of the following is NOT a part of 4 C's of the learning skills of 21st century?

- A) Critical thinking skill
- B) Communication skill
- C) Conceptualising skill
- D) Creative thinking skill

29) Which of the following policies lay special emphasis on removal of disparities and equalizing educational opportunities by attending to the specific needs of those who have remained educationally backward so far?

- A) Shiksha aur Vikas
 - B) Sarva Shiksha Abhiyan
 - C) National Policy on Education
 - D) National Literacy Mission
-

30) Which of the following programmes was launched to achieve Universal Elementary Education as envisioned by the United Nations' Millennium Development Goals and thereafter mandated by the 86th amendment of the Constitution of India?

- A) Universal Primary Education Programme
- B) District Primary Education Programme
- C) Sarva Shiksha Abhiyan
- D) Saakshar Bharat Mission

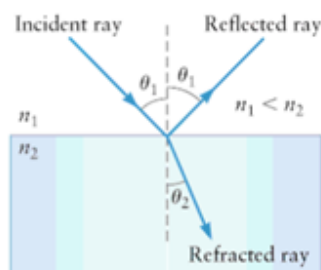


Section 5 - PaperII-Physical Science

31) What is the colour of the electromagnetic radiation emitted during the transition from $n = 4$ state to $n = 2$ state in the hydrogen atom?

- A) Red
- B) Green
- C) Blue
- D) Violet

32) For a given figure, which of the following equation best describes the Snell's law?



- A) $n_2 \sin \theta_1 = n_2 \sin \theta_2$
- B) $n_1 \sin \theta_1 = n_2 \sin \theta_2$
- C) $n_1 \sin \theta_2 = n_2^2 \sin \theta_1$
- D) $n_1 \sin \theta_2 = n_2 \sin \theta_1$

33) Astigmatism, a common eye defect, can be corrected by wearing

- A) Concave lenses
- B) Convex lenses
- C) Cylindrical lenses
- D) Sunglasses

34) Which of the following options is TRUE for an endothermic reaction? (Given, ΔH = Change in Enthalpy; ΔQ = Heat evolved)

- A) $\Delta H = 0$
- B) $\Delta H > 0$
- C) $\Delta H < 0$
- D) $\Delta Q > 0$

35) Which among the following statement is TRUE for ideal voltmeter?

- A) Infinite resistance
- B) Very low resistance
- C) Resistance range is between 10-20 ohm
- D) Zero resistance

36) ^{12}B and ^{13}C nuclei are

- A) isotones
- B) isotopes
- C) isomers
- D) isobars

37) A force $F = i + 5j + 7k$ acts on a particle and it displaces through $S = 6i + 10k$. What is the work done if the force is in newton and distance is in metre?

- A) 69 J
- B) 56 J
- C) 28 J
- D) 76 J

38) The acceleration of a moving particle varies directly proportional to time. The particle starts from rest and at $t = 1\text{ s}$, its position and velocity are 2 m and 2 m/s. Find its equation of motion.

- A) $3x = 2t^3 + 4$
- B) $2x = 3t^3 - 8$
- C) $2x = 3t^3 + 4$
- D) $3x = 2t^3 - 8$

39) What is the molecular mass of glucose? (Given, atomic mass of C = 12.011 amu, H = 1.008 amu, O = 16.00 amu and N = 14.00 amu)

- A) 264.162 amu
- B) 342.308 amu
- C) 43.019 amu
- D) 180.162 amu

40) What is the IUPAC name of the compound having structure $\text{CH}_3\text{-C}\equiv\text{C-CH}_3$?

- A) But-2-yne
- B) Ethyl acetylene
- C) But-1-yne
- D) Dimethyl acetylene

41) The abbreviation 'amu' stands for

- A) Atomic mobility unit
- B) Average molecular unit
- C) Average mass unit
- D) Atomic mass unit

42) Arrange the following in terms of increasing pH value: Milk, Black coffee, Tomato juice and Egg white.

- A) Milk > Egg white > Black coffee > Tomato juice
- B) Milk > Egg white > Tomato Juice > Black coffee
- C) Egg white > Milk > Black coffee > Tomato juice
- D) Egg white > Black coffee > Milk > Tomato juice

43) The chemical formula of Baeyer's reagent is

- A) KMnO_4
- B) CHCl_3
- C) CH_3COOH
- D) $\text{K}_2\text{Cr}_2\text{O}_7$

44) The ratio of molar specific heat capacity of a N_2 gas at constant pressure to that at constant volume is

- A) 1
- B) $\frac{5}{3}$
- C) $\frac{7}{5}$
- D) $\frac{3}{2}$

45) Consider a circular coil of wire consisting of 200 turns, each of radius $10 \times 10^{-2} \text{ m}$, carrying a current of 0.2 A. What is the magnitude of the magnetic field at the center of the coil?

- A) $0.31 \times 10^{-3} \text{ T}$
- B) $2.51 \times 10^{-4} \text{ T}$
- C) $1.34 \times 10^{-2} \text{ T}$
- D) $3.14 \times 10^{-5} \text{ T}$

46) Which among the following substances have negative susceptibility?

- A) Superparamagnetic substances
- B) Paramagnetic substances
- C) Diamagnetic substances
- D) Ferromagnetic substances

47) Which of the following is an example of external combustion engine?

- A) Gasoline engine
- B) Steam engine
- C) Diesel engine
- D) Wankel engine

48) A man driving a car with a certain uniform speed applies a brake such that the car slows down at a rate of 2 m/s^2 . If the car stops in 100 m, find the time required by the car to stop.

- A) 5 s
- B) $\sqrt{5} \text{ s}$
- C) $10\sqrt{5} \text{ s}$
- D) 10 s

49) A straight long wire of radius 'a' carries a current 'I' uniformly distributed along its cross-section. The magnetic field B in the region $r < a$ will be proportional to

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

50) A 150 g cricket ball is hit by a batsman with an initial velocity of 40 m/s at an angle 60° with the horizontal. Find its kinetic energy when it reaches its maximum height.

- A) 15 J
- B) 90 J
- C) 120 J
- D) 30 J

Section 6 - PaperII-Biological Science

51) In a mature embryo sac of angiosperms at micropylar end, the cells present on either side of egg cells are termed as

- A) polar nuclei
- B) antipodal cells
- C) central cell
- D) synergids

52) An animal that hunts other animals for food is known as

- A) habitat
- B) biomass
- C) predator
- D) producer

53) Which of the following radioisotope was applied to measure the aquatic primary productivity?

- A) ^3He
- B) ^2H
- C) ^{14}N
- D) ^{14}C

54) In prokaryotic cells glycolysis takes place in the

- A) Cytoplasm
- B) Nucleus
- C) Mitochondria
- D) Ribosomes

55) Which of the following phyla is an example of seedless vascular plants?

- A) Ginkgophyta
- B) Anthophyta
- C) Lycophta
- D) Cycadophyta

56) In potato, which of the following parts of the stem serves as an organ for vegetative reproduction?

- A) Tuber
- B) Bulb
- C) Sucker
- D) Rhizome

57) Which of the following conditions is NOT an effect of Deforestation?

- A) Increased biodiversity
- B) Soil Erosion
- C) Increased Greenhouse Gases
- D) Floods

58) Which of the following options refer to the planned growth with minimum damage to the environment, without compromising the ability of future generations to meet their own needs?

- A) Sustainable development
- B) Monoculture
- C) Evolutionary development
- D) Biodiversity

59) The process of glycolysis occurs within the

- A) lysosome of the cell
- B) cytoplasm of the cell
- C) mitochondria of the cell
- D) chloroplast of the cell

60) In mitochondria, the inner membrane forms a number of infoldings known as

- A) intermembrane space
- B) outer membrane
- C) cristae
- D) matrix

61) The internal body temperature of the human being is regulated by a part of our brain called

- A) hypothalamus
- B) pons
- C) thalamus
- D) corpus callosum

62) Which of the following is an example of non-membranous cell organelles?

- A) Vacuole
- B) Mitochondria
- C) Ribosome
- D) Nucleus

63) In cellulose, the glucose residues are linked by

- A) $\beta(1-6)$ glycosidic bonds
- B) $\alpha(1-4)$ glycosidic bonds
- C) $\alpha(1-6)$ glycosidic bonds
- D) $\beta(1-4)$ glycosidic bonds

64) Which one of the following ecological pyramids explains about "Ten Percent Law"?

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

65) In which of the following phylum, respiratory system is absent?

- A) Mollusca
- B) Echinodermata
- C) Annelida
- D) Chordata

66) The term 'Angiosperm' is derived from two greek words, angio and sperma. What do they mean?

- A) Naked, Seed
- B) Moss, Plant
- C) Young shoot, Plant
- D) Covered, Seed

67) The ability of an ecosystem to recover when the system is disturbed is termed as

- A) food web
- B) food chain
- C) resilience stability
- D) resistance stability

68) The three R's that will help us to conserve natural resource for long term use are

- A) Renew, Recycle, Rate
- B) Reform, Reuse, Renewable
- C) Reduce, Recycle, Reuse
- D) Reproduce, Restore, Reduce

69) In which of the following phyla excretion takes place through malpighian tubules?

- A) Platyhelminthes
- B) Aschelminthes
- C) Arthropoda
- D) Annelida

70) Read the following statements and choose the CORRECT option:

- (I) Natural gas is used for power generation
- (II) Natural gas can be easily transported through pipes
- (III) Natural gas can be used directly for burning in homes

- A) I, II is FALSE and III is TRUE
- B) I, II and III are FALSE
- C) I is TRUE, II and III are FALSE
- D) I, II and III are TRUE

Section 7 - PaperII-Mathematics

71) If the sum of the roots of the equation $ax^2 - 3x + 2a + 1 = 0$ is 3, then the product of the roots of the equation is

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

72) The value of $1/(1 + \tan^2 \theta)$ is equivalent to

- A) 1
- B) $\sin \theta$
- C) $\cos \theta$
- D) $\cos^2 \theta$

73) The value of $(\log_9 27 + \log_8 32)$ is

- A) 4
- B) 3
- C) $19/6$
- D) $7/2$

74) The solutions of the system of equations $2x + 3y = 8$, $-x + 2y = 3$ are given by

- A) $x = 1, y = 2$
- B) $x = -1, y = 2$
- C) $x = 1, y = -2$
- D) $x = 0, y = 2$

75) Which of the following options is the fraction whose value lies between $3/8$ and $3/4$?

- A) $9/25$
- B) $2/7$
- C) $9/16$
- D) $7/8$

76) $\cot A =$

- A) $\cos A - \sin A$
- B) $\operatorname{cosec} A - \sin A$
- C) $\cos A / \sin A$
- D) $\sin A / \cos A$

77) What is the value of $\log_a 1$?

- A) a
- B) 2
- C) a^2
- D) 0

78) If $\tan x = \sin 90^\circ \cos 60^\circ + \sin 30^\circ$, then the value of 'x' is

- A) 30°
- B) 60°
- C) 45°
- D) 90°

79) An interior angle of a regular polygon is 8 times its exterior angle. What is the number of sides of the polygon?

- A) 18
- B) 10
- C) 15
- D) 12

80) How many natural numbers are there between 3 and 200 which are divisible by 7?

- A) 23
- B) 35
- C) 27
- D) 28

81) The line passing through the centre of a circle with maximum possible length and whose end points lie on the circle is its

- A) circumference
- B) radius
- C) diameter
- D) chord

82) If $p/q = 3/4$, then what is the value of $(5p - 3q) / (7p + 2q)$?

- A) $7/31$
- B) $3/29$
- C) $3/13$
- D) $5/58$

83) Taking 'x', 'y' as variables and 'k' as a constant, if $x = 2y$ and $y + k = 11$ and $x - 2k = -18$, then the value of $(x+y)$ is

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

84) If $2^{x+3} = 4^{3x-3}$, then the value of x is

- A) $11/3$
- B) $12/5$
- C) $5/11$
- D) $9/5$

85) Let $A = \{1, 2, 3, 4\}$ and $B = \{3, 4, 5, 6, 7\}$. What is symmetric difference of sets A and B?

- A) $\{1, 2, 5, 6, 7\}$
- B) $\{1, 2, 3, 4\}$
- C) $\{1, 2, 3, 4, 5, 6, 7\}$
- D) $\{5, 6, 7\}$

86) What is the value of $\log_{10} (0.001)$?

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

87) If $f(x) = 3x^2 - 1$ and $g(x) = -2x + 7$, then $(f + g)(-3) =$

- A) 20
- B) 14
- C) -41
- D) 39

88) In a circle, if PQ is the diameter of the circle and the point R is on the circumference of the circle such that $\angle PQR = 40^\circ$, then $\angle RPQ =$

- A) 30°
- B) 40°
- C) 50°
- D) 45°

89) If N is the set of natural numbers such that the set $B = \{x : x \in N, x \text{ is even and } x < 9\}$, then which of the following is the CORRECT option?

- A) $B = \{0, 1, 3, 5, 7\}$
- B) $B = \{0, 1, 3, 5\}$
- C) $B = \{0, 2, 4, 6, 8\}$
- D) $B = \{2, 4, 6, 8\}$

90) A kite is flying at a height of 15 m from level ground is attached to a string inclined at 30° to the horizontal. The length of the string is

- A) 20 m
- B) 15 m
- C) 25 m
- D) 30 m

Question Paper No:	53553_25
Answer Key	

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