

**PART—A**  
**SYNONYMS**

**Directions :** Each item in this section consists of a sentence with an underlined word followed by four words (a), (b), (c) and (d). Select the option that is nearest in meaning to the underlined word and mark your response in your Answer Sheet accordingly.

1. After a good meal, it is important to pay a compliment to the chef.  
(a) tip  
(b) praise  
(c) admonish  
(d) revile
2. His work is laudable.  
(a) praiseworthy  
(b) laughable  
(c) bold  
(d) loud
3. Raj is a competent carpenter.  
(a) capable  
(b) exceptional  
(c) inadequate  
(d) clumsy
4. He is diligent in submitting assignments.  
(a) dilly-dallying  
(b) procrastinating  
(c) intelligent  
(d) conscientious
5. He appears to be reticent.  
(a) expansive  
(b) jolly  
(c) silent  
(d) withdrawn
6. He is always joyful.  
(a) cheerful  
(b) callous  
(c) garrulous  
(d) credulous
7. Mohan remains morose these days.  
(a) introspective  
(b) generous  
(c) chirpy  
(d) sullen
8. He was a reluctant learner.  
(a) enthusiastic  
(b) eager  
(c) unwilling  
(d) fearful
9. Amit is optimistic about the prospects of his investments.  
(a) pessimistic  
(b) uncaring  
(c) carefree  
(d) sanguine
10. Sachin is very cooperative by nature.  
(a) complaisant  
(b) covert  
(c) complacent  
(d) conniving

## ANTONYMS

**Directions :** Each item in this section consists of a sentence with an underlined word followed by four words (a), (b), (c) and (d). Select the option that is opposite in meaning to the underlined word and mark your response in your Answer Sheet accordingly.

11. He is essentially a crude person.

- (a) coarse
- (b) refined
- (c) eager
- (d) balanced

12. His confidence is high.

- (a) diffidence
- (b) eagerness
- (c) steadfastness
- (d) endurance

13. His integrity is noticed.

- (a) skilfulness
- (b) ability
- (c) dependability
- (d) dishonesty

14. She is a benevolent individual.

- (a) clever
- (b) muddled
- (c) malevolent
- (d) ambivalent

15. His sartorial manner is judged.

- (a) unstylish
- (b) uncompromising
- (c) common
- (d) crude

16. This piece of art is authentic.

- (a) genuine
- (b) expensive
- (c) rare
- (d) fake

17. The deluge affected the population.

- (a) cloudburst
- (b) drought
- (c) deforestation
- (d) drizzle

18. His dedication is known to all.

- (a) clarity
- (b) hostility
- (c) apathy
- (d) anger

19. His perspicacity was remarkable.

- (a) smartness
- (b) dullness
- (c) dedication
- (d) deviousness

20. He has a penchant for spicy food.

- (a) tendency
- (b) affinity
- (c) fear
- (d) dislike

## SPOTTING ERRORS

**Directions :** Each item in this section has a sentence with three underlined parts labelled (a), (b) and (c). Read each sentence to determine whether there is any error in any underlined part and indicate your response in the Answer Sheet against the corresponding letter, i.e., (a) or (b) or (c). If you find no error, your response should be indicated as (d).

21. A company of five thousand soldiers, having marched tirelessly for over five days,  
(a) (b)

have just moved into their cantonment. No error  
(c) (d)

22. Every person who believes in principles must stand up to fight  
(a) (b)

for their convictions. No error  
(c) (d)

23. The Olympic Games reflects the highest spirit of  
(a) (b)

human endeavour and achievement. No error  
(c) (d)

24. The principal of the school stressed the need for discipline amongst the students.  
(a) (b) (c)

No error  
(d)

25. Failure is the stepping stone to success; however, successive failures are not  
(a) (b)

successive stepping stones to success. No error  
(c) (d)

26. India's strengths are its diversity of culture and  
(a) (b)

the spirit of tolerance in it's people. No error  
(c) (d)

27. Once considered ninth planet of the solar system, Pluto is today listed as the  
(a) (b)

largest dwarf planet of the solar system. No error  
(c) (d)

28. The greatest glory in life is to be able to realize ones dreams and ambitions  
(a) (b)

without trampling on those of others. No error  
(c) (d)

29. To be able to manage one's anger is a reflection of an individual's  
(a) (b)

psychological maturity. No error  
(c) (d)

30. A honest mistake is no more than that; just an honest mistake. No error  
(a) (b) (c) (d)

## IDIOMS AND PHRASES

**Directions :** Given below are some idioms/phrases followed by four alternative meanings to Choose the most appropriate answer from among the options (a), (b), (c) and (d).

31. Counting your chickens

- (a) confident of success
- (b) greedily accumulating wealth
- (c) being careful about spending money
- (d) getting scared because of danger

32. The icing on the cake

- (a) baked food that is delicate and delicious with a topping
- (b) extra benefit over and above an already good deal
- (c) getting what you asked for
- (d) more than what is needed

33. A stitch in time

- (a) tailoring one's efforts efficiently
- (b) making an effort to succeed
- (c) inability to take timely decision
- (d) timely action that prevents a negative outcome

34. At sixes and sevens

- (a) on top of the situation
- (b) state of denial
- (c) state of total confusion
- (d) well-planned and prepared

35. Talking twenty to the dozen

- (a) talking hurriedly and rapidly
- (b) talking too much
- (c) talking without making sense
- (d) talking out of turn

36. Under the weather

- (a) walking in the rain
- (b) controlled by the elements
- (c) browbeaten by the heat
- (d) unwell

37. To sit on the fence

- (a) to act promptly
- (b) to be lazy
- (c) to be undecided
- (d) to sit without doing anything

38. Once in a blue moon

- (a) romantic moment
- (b) occasionally
- (c) rarely
- (d) often

39. Through thick and thin

- (a) in genuine friendship
- (b) through the best of everything
- (c) among people both fat and slim
- (d) through difficult times

40. Like chalk and cheese

- (a) very different from each other
- (b) without any blemish
- (c) pure white in colour
- (d) very like each other

## ORDERING OF WORDS IN A SENTENCE

**Directions :** Each of the following items in this section consists of a sentence, the parts of which have been jumbled. These parts have been labelled P, Q, R and S. Given below each sentence are four sequences namely (a), (b), (c) and (d). You are required to rearrange the jumbled parts of the sentence and mark your response accordingly.

41. but perhaps the best way is to agree there are many ways of dealing  
P Q  
with them without excessive argumentation with intransigent customers  
R S

The correct sequence should be

- (a) QPRS (b) QSPR  
(c) PSQR (d) RSQP

42. in the years following India achieved remarkable economic development  
P Q  
liberalization in the year 1991 the landmark reforms inaugurated via  
R S

The correct sequence should be

- (a) PQRS (b) PRSQ  
(c) SPRQ (d) QPSR

43. was the victory secured by the women's hockey team in the arena of sport, perhaps  
P Q  
against Australia in the Tokyo Olympics  
R  
the greatest moment in Indian Olympic history  
S

The correct sequence should be

- (a) SPQR (b) RPQS  
(c) QSPR (d) QRPS

44. in terms of GDP and GNP, for gauging the success of a nation  
P Q

which are the two major determinants economic progress is determined  
R S

The correct sequence should be

- (a) SQRP (b) RPQS  
(c) SPRQ (d) QRPS

45. with the aplomb of a stage artist, that they are not men of straw  
P Q

they can twist and shake their wobbly heads mesmerizing the gullible into believing  
R S

The correct sequence should be

- (a) PRQS (b) RPSQ  
(c) SPQR (d) QRPS

46. of its rain-soaked verdure and on the other there are  
P Q

on the one hand there is the immense beauty the artifacts of its visible modernity  
R S

The correct sequence should be

- (a) PRQS (b) QRSP  
(c) SPQR (d) RPQS

47. are often rooted the causes of extreme poverty  
P Q R

in the inequalities of social systems  
S

The correct sequence should be

- (a) QRPS (b) QRSP  
(c) SRQP (d) SRPQ



## PART—B

51. Which one of the following reactions is an example of decomposition reaction?
- (a)  $\text{CH}_4(\text{g}) + 2\text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{g})$
- (b)  $2\text{AgCl}(\text{s}) \xrightarrow{\text{Sunlight}} 2\text{Ag}(\text{s}) + \text{Cl}_2(\text{g})$
- (c)  $\text{CuO} + \text{H}_2 \xrightarrow{\text{Heat}} \text{Cu} + \text{H}_2\text{O}$
- (d)  $\text{Fe}(\text{s}) + \text{CuSO}_4(\text{aq}) \rightarrow \text{FeSO}_4(\text{aq}) + \text{Cu}(\text{s})$
52. Which one of the following is the mechanism of action of oral contraceptive pills?
- (a) They kill the egg.
- (b) They kill the sperm.
- (c) They kill the zygote.
- (d) They inhibit the release of egg.
53. Which one of the following plants has unisexual flowers?
- (a) Papaya
- (b) Hibiscus
- (c) Mustard
- (d) Sunflower
54. A cell is unable to synthesize lipids. Which of its cell organelles might be defective?
- (a) Smooth endoplasmic reticulum
- (b) Golgi bodies
- (c) Lysosomes
- (d) Mitochondria
55. All objects experience a buoyancy when they are immersed in a fluid. Buoyancy is
- (a) a downward force
- (b) a downward pressure
- (c) an upward force
- (d) an upward pressure
56. According to Fleming's right-hand rule, if the forefinger indicates the direction of magnetic field and thumb shows the direction of motion of conductor, then the stretched middle finger will predict the direction of
- (a) force acting on the conductor
- (b) electric field
- (c) induced current
- (d) current
57. Two resistors  $R_1$  and  $R_2$  arranged in parallel combination in an electrical closed circuit are made of the same material and of same thickness. If the length of  $R_2$  is twice the length of  $R_1$ , then the total resistance  $R$  satisfies
- (a)  $3R = 2R_1$
- (b)  $3R = 2R_2$
- (c)  $2R = 3R_1$
- (d)  $2R = 3R_2$
58. What is the magnification produced by a concave lens of focal length 10 cm, when an image is formed at a distance of 5 cm from the lens?
- (a) 2.0
- (b) 1.0
- (c) 0.5
- (d) 0.33

[ P.T.O. ]

59. A wooden box of mass 2 kg and dimensions (30 cm × 15 cm × 10 cm) is placed on a table with sides 30 cm and 10 cm touching the tabletop. Which one of the following is the approximate pressure exerted on the table?

(a)  $111.1 \text{ N/m}^2$

(b)  $222.2 \text{ N/m}^2$

(c)  $333.3 \text{ N/m}^2$

(d)  $666.6 \text{ N/m}^2$

60. Why are the tyres of aircrafts made of conducting rubber?

1. So that the charge accumulated on the aircraft in flight, by rubbing the air, can easily be transferred to ground on landing.

2. So that the charge accumulated due to the operation of various electronic equipments in the aircraft in flight can easily be transferred to ground on landing.

Select the correct answer using the code given below.

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

61. *Arthashastra*, the classical work of Indian political thought, focuses primarily on

(a) economy

(b) culture

(c) statecraft

(d) monarchy

62. When did *Charaka Samhita* originate?

(a) 6th Century BCE

(b) 3rd to 2nd Century BCE

(c) 4th Century BCE

(d) 5th Century BCE

63. Early Buddhist sculptors did not show Buddha in human form. Through which of the following symbols was Buddha's presence shown by the early sculptors?

(a) Empty Seat and Stupa only

(b) Wheel and Tree only

(c) Wheel, Tree and Stupa only

(d) Empty Seat, Wheel, Tree and Stupa

64. The Parliament of India is primarily based on the model of

- (a) German Parliament
- (b) British Parliament
- (c) American Congress
- (d) French Parliament

65. Who among the following had the shortest span in office as the Prime Minister of India?

- (a) Lal Bahadur Shastri
- (b) Chaudhary Charan Singh
- (c) Chandra Shekhar
- (d) H. D. Deve Gowda

66. Which one of the following does **not** fall under the jurisdiction of the apex court of India?

- (a) Original Jurisdiction
- (b) Appellate Jurisdiction
- (c) Collegiate Jurisdiction
- (d) Advisory Jurisdiction

67. According to the Indian Meteorological Department, which of the following is/are the feature/features of cloudburst?

- 1. Heavy precipitation in short period of time in a limited geographical area
- 2. It occurs generally during monsoon period and triggers flash flood and landslides

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

68. In a group discussion on shape and size of the Earth, three students stated the following points :

- 1. Student 1 : The shape of the Earth is basically an oblate spheroid.
- 2. Student 2 : The polar diameter of the Earth is more than the equatorial diameter.
- 3. Student 3 : Bulge along the equatorial region is due to revolution of the Earth.

Who among the above students is/are correct?

- (a) Student 1 only
- (b) Student 1 and Student 2 only
- (c) Student 2 and Student 3 only
- (d) Student 1, Student 2 and Student 3

69. While watching news, you hear about a place, of which you had never heard earlier. You want to know more about the place and you want to locate it on the map. Which of the following is/are required for you to be able to locate the place on the map?

- (a) Only latitude of the place
- (b) Only longitude of the place
- (c) Both longitude and latitude of the place
- (d) Latitude, longitude and altitude of the place

70. Which one of the following statements with respect to Global Positioning System (GPS) is *not* correct?

- (a) It is based on network of satellites orbiting above the Earth.
- (b) It is based on the system of triangulation.
- (c) GPS receivers provide location in terms of latitude, longitude and altitude.
- (d) It provides information exclusively for military operations.

71. What is the mass of a material, whose specific heat capacity is  $400 \text{ J}/(\text{kg } ^\circ\text{C})$  for a rise in temperature from  $15^\circ\text{C}$  to  $25^\circ\text{C}$ , when heat received is  $20 \text{ kJ}$ ?

- (a)  $0.1 \text{ kg}$
- (b)  $1 \text{ kg}$
- (c)  $10 \text{ kg}$
- (d)  $5 \text{ kg}$

72. The specific latent heat of vaporization of a substance is the quantity of heat needed to change unit mass from

- (a) liquid to vapour with a change of temperature
- (b) liquid to vapour without a change of temperature
- (c) vapour to liquid without a change of temperature
- (d) vapour to liquid with a change of temperature

73. Evaporation from the surface of a given liquid takes place more rapidly when

- (a) the temperature is high and the surface area of the liquid is large
- (b) the temperature is low and the surface area of the liquid is large
- (c) the temperature is low and the surface area of the liquid is small
- (d) the temperature is high and the surface area of the liquid is small

74. Which of the following statements correctly explains/explain the existence of a positive force between two electric charges?

1. Both the charges are positive.
2. Both the charges are negative.
3. Both the charges are oppositely charged.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

75. An electric wire of resistance 50 ohm is cut into five equal wires. These wires are then connected in parallel. What is the equivalent resistance of this combination?

- (a) 2 ohm
- (b) 10 ohm
- (c) 0.5 ohm
- (d) 5 ohm

76. The electric field lines from an isolated positively charged conducting sphere are

- (a) tangential to the conducting surface
- (b) at right angles to the conducting surface and towards the centre of the sphere
- (c) at any angle to the conducting surface
- (d) at right angles to the conducting surface and outwards from the centre of the sphere

77. Which one of the following is **not** a solution?

- (a) Alloy
- (b) Milk
- (c) Air
- (d) Sugar

78. Refining of petroleum is carried out using which one of the following techniques?

- (a) Evaporation
- (b) Fractional distillation
- (c) Separating funnel
- (d) Sublimation

79. Which one of the following is a chemical change?

- (a) Dissolving sugar in water
- (b) Melting of ice
- (c) Crystallization
- (d) Milk turning sour

80. Which one of the following is the correct molecular formula of ammonium carbonate if the valency of ammonium ion is (+1) and carbonate anion is (-2)?

- (a)  $(\text{NH}_4)_2\text{CO}_3$
- (b)  $\text{NH}_4(\text{CO}_3)_2$
- (c)  $(\text{NH}_3)_2\text{CO}_3$
- (d)  $\text{NH}_4\text{CO}_3$

81. Which one of the following is a covalent compound?

- (a) Calcium oxide
- (b) Sodium nitride
- (c) Silicon carbide
- (d) Zinc sulphide

82. The mass number of argon is 40. Which one of the following statements is correct?

- (a) The number of protons in argon is 22.
- (b) The number of neutrons in argon is 18.
- (c) The number of electrons in argon is 18.
- (d) The sum of numbers of protons and electrons in argon is 40.

83. Which one of the following is the correct order of the valencies of elements Ne, Si, N and Mg?

- (a)  $\text{Ne} < \text{Mg} < \text{N} < \text{Si}$
- (b)  $\text{Si} < \text{N} < \text{Mg} < \text{Ne}$
- (c)  $\text{Ne} < \text{N} < \text{Si} < \text{Mg}$
- (d)  $\text{Mg} < \text{Ne} < \text{N} < \text{Si}$

84. The frequency of an alternating current is 3 Hz. It implies that

- (a) there are 6 cycles/s
- (b) there are 3 cycles/s
- (c) there are 2 cycles/s
- (d) there is only 1 cycle/s

85. Which one of the following correctly represents the SI unit of resistivity?

- (a)  $\Omega$
- (b)  $\Omega/m$
- (c)  $\Omega \text{ cm}$
- (d)  $\Omega \text{ m}$

86. What is the current required to light a 60 W incandescent bulb in a domestic supply of 240 V?

- (a) 0.5 A
- (b) 0.25 A
- (c) 1.0 A
- (d) 5.0 A

87. The magnetic field produced by a current-carrying straight wire at a point outside the wire depends

- (a) inversely on the distance from it
- (b) directly on the distance from it
- (c) inversely at short distances and directly at large distances from it
- (d) directly on the distance (at short distances) and inversely on the distance (at long distances) from it

88. What is the dimension of gravitational constant?

- (a)  $ML^3T^{-2}$
- (b)  $M^{-1}L^3T^{-2}$
- (c)  $M^2L^{-2}T^{-2}$
- (d)  $M^2L^{-1}T^{-2}$

89. A ball is thrown vertically upward with a speed of 40 m/s. The time taken by the ball to reach the maximum height would be approximately

- (a) 2 s
- (b) 3 s
- (c) 4 s
- (d) 5 s

90. The time period of a 1 m long pendulum approximates to

- (a) 6 s
- (b) 4 s
- (c) 2 s
- (d) 1 s

91. The forests of Uttarakhand, Kullu Valley in Himachal Pradesh and Dzukou Valley in Nagaland and Manipur were in the news on account of which one of the following reasons?

- (a) Deforestation
- (b) Forest fire
- (c) Poaching of wild animals
- (d) Illegal mining

92. Which one of the following is correct in respect of total number of States and Union Territories in India?

- (a) 28 States and 8 Union Territories
- (b) 27 States and 9 Union Territories
- (c) 30 States and 6 Union Territories
- (d) 29 States and 7 Union Territories

93. Snow, sleet and hail are the forms of

- (a) precipitation
- (b) condensation
- (c) transpiration
- (d) evaporation

94. Which one of the following is likely to be the most prevalent form of weathering in hot-tropical desert areas?

- (a) Mechanical
- (b) Chemical
- (c) Biological
- (d) Leaching

95. Which one of the following cities was the first to attain the status of a 'megacity'?

- (a) London
- (b) Paris
- (c) New York
- (d) Washington

96. In India, rigid and stable elevated lands, denuded rocks and series of scarps are the features of which of the following?

- (a) Northern mountains
- (b) Peninsular plateau
- (c) Northern plains
- (d) Coastal plains

97. A person had visited a region in India and found trees, such as Khair, Neem, Khejri and Palas. Which one of the following regions is she/he expected to have visited?

- (a) Malabar Coast
- (b) Garo Hills
- (c) Sunderban Delta
- (d) Desert Region

98. Consider the following statements :

1. Rocks do not remain in their original form for long and undergo transformation.
2. Transformation of rocks is caused by weathering, erosion and metamorphic action.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

99. Weathering, mass wasting, erosion and transportation are indicators of which one of the following processes?

- (a) Denudation
- (b) Endogenetic process
- (c) Diastrophism
- (d) Mountain building

100. If you want to observe moraines, eskers and outwash plains, which one of the following Union Territories you may have to visit?

- (a) Andaman and Nicobar Islands
- (b) Lakshadweep
- (c) Puducherry
- (d) Ladakh

101. Legendary Kathak dancer Pandit Birju Maharaj died recently. He was the doyen of which one of the following Gharanas of Kathak?

- (a) Jaipur
- (b) Raigarh
- (c) Lucknow
- (d) Banaras

102. In a first, India is to export BrahMos missile to

- (a) Bhutan
- (b) Philippines
- (c) Maldives
- (d) Nepal

103. Who among the following is the Head of the Committee appointed by the Supreme Court of India to enquire into the circumstances that led to the Prime Minister of India's convoy being stuck for several minutes on a flyover in Punjab recently?

- (a) Justice Indu Malhotra
- (b) Justice Ashok Bhushan
- (c) Justice Navin Sinha
- (d) Justice Rohinton Fali Nariman

104. Who among the following retired from test cricket by bagging a wicket on the last ball of his career?

- (a) AB de Villiers
- (b) Michael Hussey
- (c) Quinton de Kock
- (d) Ross Taylor

105. Who among the following is appointed as the tenth Chairman of the Indian Space Research Organization (ISRO) recently?

- (a) A. S. Kiran Kumar
- (b) K. Sivan
- (c) K. Radhakrishnan
- (d) S. Somanath

106. According to the Forest Survey Report, 2021, area-wise which one of the following States has the largest forest cover in India?

- (a) Odisha
- (b) Madhya Pradesh
- (c) Arunachal Pradesh
- (d) Chhattisgarh

107. Who among the following is the Chairperson of the Goods and Services Tax Council?

- (a) The Prime Minister of India
- (b) The Union Finance Minister
- (c) The Speaker of the Lok Sabha
- (d) The President of India

108. The International Union for Conservation of Nature (IUCN) has recently categorized the Red Sanders (Red Sandalwood) into

- (a) deficient category
- (b) endangered category
- (c) near-threatened category
- (d) critically endangered category

109. The Government of India has decided to observe 'Veer Baal Diwas' on

- (a) 6th October
- (b) 26th November
- (c) 26th December
- (d) 6th December

110. On 14th January, 2022, which one of the following ministries has organized a global Surya Namaskar Demonstration programme?

- (a) The Ministry of Culture
- (b) The Ministry of AYUSH
- (c) The Ministry of Health and Family Welfare
- (d) The Ministry of Tourism

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111. Which of the following statements about living and non-living being is/are correct?

1. While living being can demonstrate growth and repair, non-living being cannot.
2. While living being demonstrates metabolic processes, non-living being does not.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

112. Which one of the following plant plastids stores starch, oil and protein granules?

- (a) Chloroplast
- (b) Leucoplast
- (c) Chromoplast
- (d) Xanthoplast

113. Which one of the following statements about 'vacuoles' is **not** correct?

- (a) In plants, there is a large central vacuole that may occupy 90% of total cell volume.
- (b) In plant cells, vacuoles provide turgidity and rigidity.
- (c) In Amoeba, vacuoles have role in nutrition.
- (d) Vacuoles are absent in animal cells.

114. In aquatic plants, large air sacs give them buoyancy effects. These sacs are surrounded by which one of the following types of tissues?

- (a) Parenchyma
- (b) Collenchyma
- (c) Sclerenchyma
- (d) Complex tissue

115. Which one of the following belongs to 'Pisces'?

- (a) Dogfish
- (b) Jellyfish
- (c) Silverfish
- (d) Starfish

116. Which one of the following groups is called 'amphibians of plant kingdom'?

- (a) Bryophytes
- (b) Thallophytes
- (c) Pteridophytes
- (d) Gymnosperms

117. Which one of the following is caused by a bacterial pathogen?

- (a) AIDS
- (b) Dengue fever
- (c) COVID-19
- (d) Typhoid fever

118. The twinkling of a star is due to the atmospheric

- (a) diffraction of starlight
- (b) reflection of starlight
- (c) refraction of starlight
- (d) dispersion of starlight

119. A mass  $M$  is dragged by a pulley on a horizontal plane by a force anti-parallel to its displacement. The work done in pulling the mass  $M$  is

- (a) zero
- (b) positive
- (c) infinite
- (d) negative

120. A 5 N force is defined when a mass of 10 kg is accelerated with

- (a)  $5.0 \text{ cm/s}^2$
- (b)  $0.5 \text{ m/s}^2$
- (c)  $0.5 \text{ cm/s}^2$
- (d)  $5.0 \text{ m/s}^2$

121. A boy of mass 52 kg jumps with a horizontal velocity of 2 m/s onto a stationary cart of mass 3 kg. The cart is fixed with frictionless wheels. Which one of the following would be the speed of the cart?

- (a) 2.15 m/s
- (b) 1.89 m/s
- (c) 1.51 m/s
- (d) 2.51 m/s

122. The energy possessed by a body due to its change in position or shape is called

- (a) thermal energy
- (b) potential energy
- (c) kinetic energy
- (d) electric energy

123. A sound wave has a frequency of 1 kHz and wavelength 50 cm. How long will it take to travel 1 km?

- (a) 5 s
- (b) 4 s
- (c) 3 s
- (d) 2 s

124. For an element with atomic number 35, which one of the following will be the correct number of electrons in its valence shell based on Bohr's model of an atom?

- (a) 1
- (b) 3
- (c) 5
- (d) 7

125. Which one of the following is *not* an example of a redox reaction?

- (a)  $\text{AlCl}_3 + 3\text{H}_2\text{O} \rightarrow \text{Al}(\text{OH})_3 + 3\text{HCl}$
- (b)  $2\text{NaH} \rightarrow 2\text{Na} + \text{H}_2$
- (c)  $4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$
- (d)  $\text{CuSO}_4 + \text{Zn} \rightarrow \text{Cu} + \text{ZnSO}_4$

126. Which one of the following allotropes of carbon is isomorphous with crystalline silicon?

- (a) Coke
- (b) Diamond
- (c) Graphite
- (d) Coal

127. Which one of the following is the colour of hydrogen gas?

- (a) Light yellow
- (b) Orange
- (c) Black
- (d) Colourless

128. Which one of the following is *not* a pigment?

- (a) Zinc oxide
- (b) Chalk
- (c) White lead
- (d) Silica

129. Which one of the following statements about fertilizers is *not* correct?

- (a) Urea is a phosphorus-containing fertilizer.
- (b) Application of fertilizer to the soil increases fertility of the soil.
- (c) Urea can be prepared by action of ammonia and carbon dioxide under high pressure and at high temperature.
- (d) Urea contains more nitrogen than other fertilizers.

130. Which one of the following statements is *not* correct?

- (a) Most carbon compounds are good conductors of electricity.
- (b) Bonding in organic compounds is covalent.
- (c) Graphite is used as a lubricant.
- (d) Diamond is an allotrope of carbon.

131. Which one of the following is **not** a Constitutional Commission of India?

- (a) The National Commission for Scheduled Castes
- (b) The National Commission for Scheduled Tribes
- (c) The National Commission for Backward Classes
- (d) The National Commission for Women

132. Which Chinese traveller in ancient India wrote the diary called 'Records of the Travels to Middle India'?

- (a) Wang Xuance
- (b) Xuanzang
- (c) Yijing
- (d) Li Yibiao

133. The elections to the Lower House of the Parliament of India, held in 2019, constituted the

- (a) 14th Lok Sabha
- (b) 15th Lok Sabha
- (c) 16th Lok Sabha
- (d) 17th Lok Sabha

134. Panchayati Raj Institutions are primarily the institutions of

- (a) Popular Government
- (b) Self-Government
- (c) Federal Government
- (d) Quasi-Government

135. Which of the following is/are the right/rights mentioned in the 'American Declaration of Independence'?

1. Life
2. Liberty
3. Pursuit of Happiness
4. Fraternity

Select the correct answer using the code given below.

- (a) 1 only
- (b) 1 and 2 only
- (c) 1, 2 and 3
- (d) 2, 3 and 4

136. Who among the following American Presidents described democracy as "Government of the People, for the People and by the People"?

- (a) Abraham Lincoln
- (b) Thomas Jefferson
- (c) George Washington
- (d) John F. Kennedy

137. Inhabitants are unaware of the speed of rotation of the planet Earth because

- 1. the angular velocity is constant for each place on the Earth's surface
- 2. the atmosphere rotates with the Earth
- 3. there are no nearby objects, either stationary or moving at a rate different from that of the Earth

Which of the above is/are the correct explanation(s)?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

138. While travelling to a hilly region, you notice a massive boulder, which was loosened by heavy rains and moved downhill. This has resulted due to which of the following processes?

- 1. Mass wasting
- 2. Erosion
- 3. Weathering

Select the correct answer using the code given below.

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

139. Which of the following statements in respect of landslides are correct?

- 1. These occur only on gentle slopes during rain.
- 2. They generally occur in clay-rich soil.
- 3. Earthquakes trigger landslides.

Select the correct answer using the code given below.

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

140. Consider the following features about a geographical phenomenon :

1. Torrents of snow and ice roaring down a steep mountain side
2. It is hazardous to skiers and mountaineers
3. It involves a mix of falling, rolling, sliding and flowing of materials

Which of the following phenomena can be identified with the above features?

- (a) Slump and earthflow
- (b) Avalanche
- (c) Landslide
- (d) Rockslide

141. The real beginning of western education in India can be dated from

- (a) the Charter Act of 1813
- (b) the Charter Act of 1793
- (c) the Sarda Act of 1929
- (d) the Macaulay's Minute on Indian Education, 1835

142. The term 'Industrial Revolution' was first used by

- (a) J. A. Blanqui
- (b) T. S. Ashton
- (c) Arnold Toynbee
- (d) R. H. Tawney

143. The Khudai Khidmatgar (Servants of the God) was organized by

- (a) Mahatma Gandhi
- (b) Khan Abdul Ghaffar Khan
- (c) M. A. Jinnah
- (d) M. M. Malaviya

144. The Mahad Satyagraha of 1927 was organized by

- (a) B. R. Ambedkar
- (b) Mahatma Gandhi
- (c) S. C. Bose
- (d) Lokmanya Tilak

145. The Satyashodhak Samaj (Truth-Seeking Society) was set up by

- (a) Vinoba Bhave
- (b) Jyotiba Phule
- (c) B. R. Ambedkar
- (d) C. Rajagopalachari

146. The 13th Century text *Lekhapaddhati* gives us information on which one of the following topics?

- (a) Art of writing
- (b) Essay writing
- (c) Legal document
- (d) Epigraphic style

147. Nkrumah was one of the five leaders, who comprised the core of the Non-Aligned Movement (NAM). He was the leader of which country in Africa?

- (a) Nigeria
- (b) Kenya
- (c) Uganda
- (d) Ghana

148. The idea of Planning in Independent India was drawn from

- (a) the Bombay Plan
- (b) the demand made by peasants
- (c) the demand made by workers' unions
- (d) the Gandhian vision of India's future

149. Nisarga, Gati, Nivar, Tauktae and Yaas are names of

- (a) new fighter aircrafts
- (b) tourist places
- (c) weather stations
- (d) cyclones

150. Which one of the following States/UTs was connected with the Indian Railways network in the year 2021?

- (a) Mizoram
- (b) Ladakh
- (c) Manipur
- (d) Sikkim