

PART—A

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 the Answer Sheet accordingly.

1. Human craving for comfort leads to anxiety.
(a) like
(b) dislike
(c) discomfort
(d) complacency
2. His writings on the subject are obscure.
(a) murky
(b) vague
(c) obvious
(d) uncertain
3. The achievements of the team have been monumental in the last ten years.
(a) enormous
(b) memorable
(c) striking
(d) unimpressive
4. His frail appearance was considered a merit.
(a) weak
(b) delicate
(c) sturdy
(d) big
5. The novel depicts the hapless status of certain sections of society.
(a) wretched
(b) miserable
(c) rural
(d) fortunate
6. Her ideas have always been eccentric.
(a) special
(b) strange
(c) normal
(d) local
7. The land appears to be parched.
(a) dry
(b) desiccated
(c) wet
(d) scorched
8. The newly made road was smooth.
(a) rutted
(b) dangerous
(c) winding
(d) silken
9. Plenitude is one major cause for environmental degradation.
(a) abundance
(b) insufficiency
(c) ample
(d) plethora
10. The scholar quoted irrefutable evidence for her thesis.
(a) overwhelming
(b) undeniable
(c) certain
(d) questionable

SYNONYMS

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

11. Ravi told his friend that he had no intention to malign him.
(a) benign
 (b) slander
(c) praise
(d) greet
12. Sheela appeared to be vexed.
(a) clear
(b) calm
(c) displeased
(d) uncomplicated
13. Do not hold any preconception about people.
(a) notion
(b) experiment
(c) great idea
(d) conceit
14. All mortal elements are impermanent.
(a) temporal
(b) immortal
 (c) never-ending
(d) divinely
15. The itinerary of the group's visit to the hills was given to everyone.
(a) invitation
 (b) information
(c) schedule
(d) names
16. The effort was to harness the power of nature.
(a) abuse
 (b) benefit
(c) apply
(d) control
17. The fickle nature of humans is at times the cause of great innovations.
(a) vacillating
(b) consistent
(c) strong
 (d) wily
18. The flood situation during the monsoon this year was calamitous.
(a) abundance
 (b) catastrophic
(c) encouraging
(d) welcome
19. He was appointed as the honorary member of the team.
(a) paid
 (b) invited
(c) accepted
(d) unpaid
20. The church decided to excommunicate him for his actions.
(a) admit
(b) reward
 (c) expel
(d) promote

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.

21. to be successful what it is as a human being have you ever considered
P Q R S

(a) SQPR

(b) RQPS

(c) QRSP

(d) PRSQ

22. there is in all instance a single, surrender to the idea that
P Q

authoritative truth to be discovered and defended many people today are willing to
R S

(a) RPSQ

(b) SPRQ

(c) RPQS

(d) SQPR

23. for yourself the implications of death, if you do not reflect and understand
P Q

from one preacher to another you will go endlessly
R S

(a) SRPQ

(b) QPSR

(c) RSPQ

(d) QRSP

24. a way of understanding the world, a language represents
P Q
and relating them to one another differentiating between things
R S

(a) PSRQ

(b) SRPQ

(c) RSPQ

(d) QPSR

25. for India's future mathematics and mathematical thinking will be very important
P Q R
it is recognized that
S

(a) QRPS

(b) RPSQ

(c) QRSP

(d) SQRP

26. in agriculture and veterinary sciences through will be enhanced sharply
P Q
programmes integrated with general education the preparation of professionals
R S

(a) SRPQ

(b) RQPS

(c) SPRQ

(d) PQRS

27. and should shift the way are certainly very important,
P Q
we think about politics the issues raised by feminists and multiculturalists
R S

(a) RPQS

(b) RSPQ

(c) SPQR

(d) SQPR

28. by which the genetic material of a plant is altered,
P

pests and enhance its nutritional value
Q

perhaps to make it more resistant to
R

genetic modification (GM) is the science
S

(a) QRPS

(b) SPRQ

(c) RSPQ

(d) RPQS

29. a much wider array of perspectives
P

the editors of the present work
Q

the history of social reforms from
R

argue the need to understand
S

(a) QSRP

(b) QPRS

(c) RSQP

(d) SQRP

30. for which she fought till the end
P

as a champion of women's rights,
Q

Pandita Ramabai was truly remarkable
R

as a pioneer in women's education and
S

(a) SRQP

(b) QPRS

(c) RSQP

(d) PQRS

SPOTTING ERRORS

Directions : Each item in this section has a sentence with three underlined parts labelled (a), (b) and (c). Read each sentence to find out whether there is any error in any underlined part. 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).

31. Our greatest glory is not in never falling but in raising every time we fall.
(a) (b) (c)

No error
(d)

32. Rahim was one of that selected for the award. No error
(a) (b) (c) (d)

33. Sujini has met her old friend Guru before she shifted to Hyderabad two years ago.
(a) (b) (c)

No error
(d)

34. This monument happens to be one of the old monument in the city.
(a) (b) (c)

No error
(d)

35. Amit told to Divya that he would come with a reward for her. No error
(a) (b) (c) (d)

36. If you have asked me for the truth I would have told you at that time.
(a) (b) (c)

No error
~~(d)~~

37. If I will be the millionaire I would eradicate poverty from the country.
(a) (b) (c)

No error
(d)

38. A bird in hand is better than two in the bush. No error
(a) (b) (c) (d)

39. The opportunity to attain foundational literacy and pursue a honest livelihood
(a) (b)

must be viewed as basic right of every citizen. No error
(c) (d)

40. Though there is progress for different directions, why is there no brotherhood?
(a) (b) (c)

No error
(d)

IDIOMS AND PHRASES

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

41. A queer fish

- (a) A strange person
- (b) A good person
- (c) An unlucky person
- (d) A lucky person

42. Eat like a bird

- (a) Eat very quickly
- (b) Eat a lot
- (c) Eat continuously
- (d) Eat very little

43. Lock horns

- (a) Be like a bull
- (b) Argue about something
- (c) Agree with someone
- (d) Think about the horns

44. Early bird

- (a) Low flying
- (b) Latest
- (c) Ancient avian
- (d) First arrival

45. Be in the pink

- (a) To be very healthy
- (b) To be very colourful
- (c) To be very sad
- (d) To be very rich

46. Be in the running

- (a) In a very bad state to speak
- (b) In a powerful position
- (c) In a good position to win
- (d) In a losing position

47. A sea change

- (a) Change in the sea tides
- (b) A complete change
- (c) Change like sea
- (d) Changed sea with pollution

48. A pearl of wisdom

- (a) An important event in one's life
- (b) An important person of wisdom
- (c) An important piece of advice
- (d) An important thing in one's life

49. Be in seventh heaven

- (a) To be extremely sorry
- (b) To be extremely wise
- (c) To be extremely sad
- (d) To be extremely happy

50. Be in the red

- (a) To owe money to a bank
- (b) To get money from one's family
- (c) To be in danger of being caught
- (d) To be in favour of needy people

PART—B

51. Which one of the following was composed by Harishena?

- (a) Nashik Inscription of Gautami Balashri
- (b) Prayaga Prashasti of Samudragupta
- (c) Deopara Prashasti of Vijayasena
- (d) Hathigumpha Inscription of Kharavela

52. Consider the following events :

1. Establishment of the Planning Commission
2. Formation of the National Development Council (NDC)
3. Approval of the First Five-Year Plan by the NDC
4. Constitution of the National Planning Committee

Which one of the following is the correct sequence of the above events?

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

53. Which one of the following battles could be seen as laying the formal foundation of the British Raj in India?

- (a) Third Battle of Panipat
- (b) Battle of Plassey
- (c) Battle of Buxar
- (d) Revolt of 1857

54. Where in South India did the British East India Company construct a trading post in 1639?

- (a) Cuddalore
- (b) Madraspatam
- (c) Kalahasti
- (d) Karwar

55. Which of the following statements is/are correct?

1. The Dutch East India Company was formed after the formation of the British East India Company.
2. Vasco da Gama reached Calicut in 1498.

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

56. In India, a cultivable land which is left uncultivated for more than a year but less than five years is labelled as

- (a) cultivable wasteland
- (b) current fallow
- (c) fallow other than current fallow
- (d) barren and wasteland

57. The major portion of the Great Artesian Basin in Australia is located in

- (a) Western Australia
- (b) Victoria
- (c) Queensland
- (d) Northern Territory

58. Which of the following statements is/are correct?

1. India has one of the longest navigable inland water networks in the world.
2. Inland waterways presently help in transporting about 25 percent of the total cargo movement.
3. About 111 inland waterways have been declared as National Waterways under the National Waterways Act, 2016.

Select the correct answer using the code given below.

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

59. Match List-I with List-II and select the correct answer using the code given below the Lists :

List-I
(Railway Zone)

List-II
(Headquarters)

- | | |
|-----------------------|--------------|
| A. East Central | 1. Gorakhpur |
| B. North Eastern | 2. Jaipur |
| C. Northeast Frontier | 3. Hajipur |
| D. North Western | 4. Maligaon |

Code :

(a) A B C D
3 4 1 2

(b) A B C D
3 1 4 2

(c) A B C D
2 1 4 3

(d) A B C D
2 4 1 3

60. Which one of the following statements about earthquake waves is **not** correct?

(a) P waves move faster and are the first to arrive at the surface.

(b) P waves can travel through gaseous, liquid and solid materials.

(c) Seismographs located beyond 145° from epicentre can record the arrival of P waves.

(d) P waves have maximum area covered under its shadow zone.

61. The commercial unit of electrical energy is kilowatt-hour (kWh), which is equal to

(a) 3.6×10^6 J

(b) 3.6×10^3 J

(c) 10^3 J

(d) 1 J

62. Which one of the following statements regarding a current-carrying solenoid is **not** correct?

(a) The magnetic field inside the solenoid is uniform.

(b) The current-carrying solenoid behaves like a bar magnet.

(c) The magnetic field inside the solenoid increases with increase in current.

(d) If a soft iron bar is inserted inside the solenoid, the magnetic field remains the same.

63. An object is made of two equal parts by volume; one part has density ρ_0 and the other part has density $2\rho_0$. What is the average density of the object?

(a) $3\rho_0$

(b) $\frac{3}{2}\rho_0$

(c) ρ_0

(d) $\frac{1}{2}\rho_0$

64. A pressure cooker cooks food faster by

(a) increasing the boiling point of water

(b) decreasing the boiling point of water

(c) increasing the melting point of water

(d) decreasing the melting point of water

65. Which one of the following wavelengths corresponds to the wavelength of X-rays?

(a) 500 nm

(b) 5000 nm

(c) 100 nm

(d) 1 nm

66. An electric bulb is connected to 220 V generator. The current drawn is 600 mA. What is the power of the bulb?

(a) 132 W

(b) 13.2 W

(c) 1320 W

(d) 13200 W

67. When the pitch of sound increases, which one of the following increases?

- (a) Intensity
- (b) Loudness
- (c) Wavelength
- (d) Frequency

68. Which one of the following is the correct reactivity series with water?

- (a) Zinc > Iron > Lead > Copper
- (b) Copper > Lead > Zinc > Iron
- (c) Copper > Zinc > Iron > Lead
- (d) Zinc > Copper > Iron > Lead

69. Which one of the following metals floats in cold water?

- (a) Magnesium
- (b) Calcium
- (c) Potassium
- (d) Copper

70. Which one of the following solutions is **not** capable of conducting electricity?

- (a) Copper sulphate
- (b) Sodium chloride
- (c) Sugar
- (d) Sodium hydroxide

71. To help deep-sea divers breathe, they carry cylinders of oxygen mixed with

- (a) chlorine
- (b) helium
- (c) nitrogen
- (d) ozone

72. Which of the following compounds undergoes/undergo thermal decomposition?

- (a) Zinc oxide
- (b) Silver oxide and zinc oxide
- (c) Silver oxide
- (d) Magnesium oxide

73. The transfer of electrical signals by nerve cells in human body is enabled by

- (a) sodium
- (b) potassium
- (c) iron
- (d) sodium and potassium

74. Silver artefacts get tarnished in air due to the formation of

(a) silver chloride

(b) silver oxide

(c) silver sulphide

(d) silver sulphate

75. Human eye can see objects at different distances with contrasting illuminations. This is due to

(a) far-sightedness

(b) near-sightedness

(c) far-sightedness and near-sightedness

(d) accommodation of eye

76. Which one of the following hormones increases the heartbeat in mammals?

(a) Insulin

(b) Melatonin

(c) Thyroxine

(d) Adrenaline

77. The digestion of fat in human intestine is performed by

(a) trypsin

(b) bile and lipase

(c) bile and amylase

(d) bile and pepsin

78. Which one of the following statements about animal cells and plant cells is correct?

(a) Animal cells have only cell membrane not cell wall, whereas plant cells have only cell wall not cell membrane.

(b) Animal cells have only cell membrane not cell wall, but plant cells have both.

(c) Both animal and plant cells have cell membrane and cell wall.

(d) Only some cells of animals have cell wall and all plant cells have cell membrane.

79. Lymph is a tissue fluid present in intercellular spaces. It resembles to

(a) digestive juice

(b) cytoplasmic fluid

(c) urine

(d) plasma

80. The breakdown of glucose in cytoplasm results in the formation of

- (a) pyruvate and energy
- (b) pyruvate and carbon dioxide
- (c) pyruvate and oxygen
- (d) pyruvate and nitrogen

81. Rafael Nadal defeated whom among the following to win the French Open Tennis Tournament, 2022?

- (a) Austin Krajicek
- (b) Ivan Dodig
- (c) Casper Ruud
- (d) Joran Vliegen

82. eSanjeevani, the free telemedicine service of the Government of India, was recently integrated with the

- (a) Ayushman Bharat Digital Mission
- (b) Aam Aadmi Bima Yojana
- (c) Pradhan Mantri Suraksha Bima Yojana
- (d) Universal Health Insurance Scheme

83. Which of the following statements about 'SHRESHTA' scheme, launched recently by the Government of India, is/are correct?

1. This scheme is for residential education for students in high school in targeted areas.
2. It provides for high quality education for meritorious but poor Scheduled Caste students.

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

84. In a recent judgement, the Supreme Court of India directed that every protected forest, national park and wildlife sanctuary across the country should have a mandatory eco-sensitive zone (ESZ) of a minimum of

- (a) 1 km starting from their demarcated boundaries
- (b) 2 km starting from their demarcated boundaries
- (c) 3 km starting from their demarcated boundaries
- (d) 5 km starting from their demarcated boundaries

85. Who among the following is the author of the book, *Tomb of Sand*?

- (a) Arundhati Roy
- (b) Geetanjali Shree
- (c) Chetan Bhagat
- (d) Jhumpa Lahiri

86. Who among the following invented the flying shuttle?

- (a) James Hargreaves
- (b) John Kay
- (c) Richard Arkwright
- (d) Humphry Davy

87. Where did Netaji Subhas Chandra Bose announce the formation of the Government of Free India in 1943?

- (a) Singapore
- (b) Shanghai
- (c) Berlin
- (d) Mandalay

88. Who among the following introduced the 'Objective Resolution' in the Constituent Assembly on 13th December, 1946?

- (a) Jawaharlal Nehru
- (b) Rajendra Prasad
- (c) B. R. Ambedkar
- (d) Alladi Krishnaswami Aiyar

89. Consider the following historical events :

1. Gandhi-Irwin Pact
2. Second Round Table Conference
3. Peasant Movement in Bardoli
4. Peasant Movement in Kheda

Which one of the following is the correct chronological order (starting from the earliest) of the above events?

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

90. Which of the following statements about the Unionist Party is/are correct?

1. It was a political party representing the interests of landholders in Punjab.
2. It was opposed to the idea of the partition of India as India and Pakistan.

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

91. Which one of the following statements about metamorphic rocks is **not** correct?

(a) Due to segregation of minerals into wavy bands or platy surfaces, some metamorphic rocks develop foliations.

(b) Where the foliations develop into broad mineral bands, the metamorphic rock is extremely hard.

(c) Where the foliations are moderately thin, the metamorphic rock tends to flake apart.

(d) Rocks that originally were composed of one dominant mineral are often foliated by metamorphism.

92. Which one of the following 'discontinuities' separates the Earth's crust from the mantle?

(a) Gutenberg

(b) Mohorovicic

(c) Conrad

(d) Repetti

93. Which one of the following cities of the world would represent the greatest linear velocity of rotation of the Earth?

(a) Kampala, Uganda

(b) St. Petersburg, Russia

(c) Madrid, Spain

(d) Stockholm, Sweden

94. What will happen if you are flying east across the International Date Line?

(a) You will lose 12 hours

(b) You will gain 12 hours

(c) You will gain 24 hours

(d) You will lose 24 hours

95. The Prime Meridian does **not** pass through which one of the following African countries?

(a) Morocco

(b) Algeria

(c) Mali

(d) Ghana

96. Piecing together the puzzle of geologic time to create and analyze historical maps of the Earth is known as

(a) paleoclimatology

(b) paleogeomorphology

(c) paleolithology

(d) paleogeography

97. What is the nature of velocity-time graph for a car moving with uniform acceleration?

(a) Parabola

(b) Logarithmic

(c) Straight line

(d) Exponential

98. The amplitude of sound waves is measured in the units of
- (a) pressure
 - (b) distance
 - (c) time
 - (d) speed
99. A current of 0.6 A is drawn by an electric bulb for 10 minutes. Which one of the following is the amount of electric charge that flows through the circuit?
- (a) 6 C
 - (b) 0.6 C
 - (c) 360 C
 - (d) 36 C
100. A DC generator works on the principle of
- (a) Ohm's law
 - (b) Joule's law of heating
 - (c) Faraday's laws of electromagnetic induction
 - (d) None of the above
101. The presence of magnetic field can be determined using which one of the following instruments?
- (a) Ammeter
 - (b) Voltmeter
 - (c) Magnetic needle
 - (d) Motor
102. Which one of the following statements about speed and velocity is correct?
- (a) Speed and velocity both are vector quantities.
 - (b) Speed and velocity both are scalar quantities.
 - (c) Speed is vector quantity and velocity is scalar quantity.
 - (d) Speed is scalar quantity and velocity is vector quantity.
103. Bronze is an alloy of
- (a) Cu and Zn
 - (b) Cu and Sn
 - (c) Zn and Mg
 - (d) Fe and Cu
104. Which one of the following salts does **not** possess water of crystallization?
- (a) Potassium permanganate
 - (b) Blue vitriol
 - (c) Washing soda
 - (d) Mohr's salt

105. Bee sting leaves an acid which causes pain and irritation. The acid released is

- (a) tartaric acid
- (b) citric acid
- (c) ethanoic acid
- (d) methanoic acid

106. Liquid vegetable oils are converted to solid margarine by the use of

- (a) hydrogen gas
- (b) chlorine gas
- (c) carbon dioxide gas
- (d) oxygen gas

107. The number of structural isomers of pentane is

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

108. Vapours of sulphur escaping from a volcano often form a crust on the rocks. The process involved is an example of

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

109. Dry ice is used on a performing stage to produce mist in air. The process involved is an example of

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

110. C_4H_8 belongs to the homologous series of

- (a) alkanes
- (b) alkenes
- (c) alkynes
- (d) cycloalkanes

111. The protein-digesting enzyme secreted by the stomach wall in case of mammals is called
- (a) chitinase
 - (b) amylase
 - (c) pepsin
 - (d) trypsin
112. Which one of the following will be resulted when an animal cell is surrounded by a medium with lower concentration of water?
- (a) Cell will lose water
 - (b) No change in movement of water
 - (c) Cell will gain water
 - (d) Cell will swell up
113. The digestive enzymes are present in
- (a) mitochondria
 - (b) vacuoles
 - (c) lysosomes
 - (d) ribosomes
114. After fertilization, the fruit and the seed are produced by
- (a) ovule and ovary, respectively
 - (b) ovary and ovule, respectively
 - (c) ovary, no ovule required
 - (d) ovule, no ovary required
115. Which among the following has initiated a nationwide flagship campaign 'Puneet Sagar Abhiyan' to clean seashores/beaches and other water bodies of plastic and other waste materials?
- (a) Indian Coast Guard
 - (b) National Cadet Corps (NCC)
 - (c) Indian Navy
 - (d) Swachh Bharat Mission
116. Which among the following was the host country of the United Nations World Environment Day, 2022?
- (a) Canada
 - (b) Sweden
 - (c) South Africa
 - (d) Brazil

117. Which of the following Indian Naval Ships were decommissioned in June 2022?

- (a) INS Ganga and INS Nipat
- (b) INS Nishank and INS Akshay
- (c) INS Khukri and INS Sandhayak
- (d) INS Gomati and INS Ranjit

118. India signed a deal with which one of the following countries to supply MH-60R helicopters to the Indian Navy?

- (a) Israel
- (b) France
- (c) Russia
- (d) USA

119. With reference to India's defence, the terms 'Surat' and 'Udaygiri' refer to

- (a) coast guard patrol boats
- (b) cargo helicopters
- (c) maritime patrol aircrafts
- (d) warships

120. Who among the following laid the foundation of the Vijayanagara Empire?

- (a) Harihara and Bukka
- (b) Krishnadeva Raya
- (c) Rama Raya
- (d) Virupaksha Raya

121. The book, *Kalila wa Dimna* is an Arabic translation of the

- (a) *Hitopadesha*
- (b) *Panchatantra*
- (c) *Suryasiddhanta*
- (d) *Kathasaritsagar*

122. Who among the following initiated the Bhoodan Movement?

- (a) Ram Prasad Bismil
- (b) Vinoba Bhave
- (c) Mahatma Gandhi
- (d) Kanhu Murmu

123. Which one of the following rivers in India was **not** crossed by Alexander and his army?

(a) Hyphasis

(b) Acesines

(c) Hydraotes

(d) Hydaspes

124. Who among the following has described the medieval Indian postal system as of two kinds—the horse-post called 'Uluq' and the foot-post called 'Dawa'?

(a) Al-Biruni

(b) Duarte Barbosa

(c) Ibn Battuta

(d) Seydi Ali Reis

125. At which among the following Harappan sites are fire altars found?

(a) Kalibangan

(b) Harappa

(c) Mohenjo-daro

(d) Rakhi Garhi

126. Consider the following statements on computation of density :

1. Physiological density can be computed by dividing the total population by the net cultivable area.

2. Agricultural density can be computed by dividing the total agricultural population by the net cultivable area.

3. Population density can be computed by dividing the total population by the total area.

How many of the above statements is/are correct?

(a) 1

(b) 2

(c) 3

(d) None

127. The formation of 'tors' on small rocky hills is associated with which among the following?

(a) Granite

(b) Limestone

(c) Alluvial

(d) Dolomite

128. Consider the following statements about anticyclones :

1. Anticyclones are high pressure systems.
2. Air in the centre of the system must be subsiding.
3. Anticyclones are characterized by converging winds.

How many of the above statements is/are correct?

- (a) 1
(b) 2
(c) 3
(d) None

129. Which of the following statements is/are correct?

1. The Earth's crust is brittle in nature.
2. The mean thickness of the oceanic crust is 15 km, whereas that of the continental crust is around 30 km.

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

130. In January 2020, the administration of which of the following Union Territories has been merged together?

- (a) Daman and Diu and Puducherry
(b) Puducherry and Dadra and Nagar Haveli
(c) Puducherry and Andaman and Nicobar Islands
(d) Dadra and Nagar Haveli and Daman and Diu

131. Two convex lenses have focal lengths of 50 cm and 25 cm, respectively. If these two lenses are placed in contact, then the net power of this combination will be equal to

- (a) +2 dioptre
 (b) +6 dioptre
(c) -6 dioptre
(d) +3 dioptre

132. Which one of the following terms *cannot* represent electrical power in a circuit?

- (a) VI
(b) I^2/R
(c) I^2R
 (d) V^2/R

133. The refractive index of crown glass is close to $3/2$. If the speed of light in air is c , then the speed of light in the crown glass will be close to

- (a) $(3/2)c$
(b) $(4/9)c$
(c) $(2/3)c$
(d) $(9/4)c$

134. The volume of a sealed packet is 1 litre and its mass is 800 g. The packet is first put inside water with density 1 g cm^{-3} and then in another liquid B with density 1.5 g cm^{-3} . Then which one of the following statements holds true?

- (a) The packet will float in both water and liquid B .
(b) The packet will sink in both water and liquid B .
 (c) The packet will sink in water but will float in liquid B .
(d) The packet will float in water and sink in liquid B .

135. A simple pendulum having bob of mass m and length of string l has time period of T . If the mass of the bob is doubled and the length of the string is halved, then the time period of this pendulum will be

- (a) T
- (b) $T/\sqrt{2}$
- (c) $2T$
- (d) $\sqrt{2}T$

136. In which one of the following devices, the light energy is converted into the electrical energy?

- (a) Light-emitting diode
- (b) Laser diode
- (c) Solar cell
- (d) Transistor

137. Which one of the following is **not** a power of Panchayats under Article 243G?

- (a) Land improvement
- (b) Implementation of land reforms
- (c) Land consolidation and soil conservation
- (d) Regulation of land revenue

138. Match List-I with List-II and select the correct answer using the code given below the Lists :

<i>List-I</i> (Mahamatta)	<i>List-II</i> (Function)
A. Anta-mahamatta	1. Women's welfare
B. Ithihakha-mahamatta	2. Spread of Dhamma
C. Dhamma-mahamatta	3. Associated with city administration
D. Nagalaviyohalaka-mahamatta	4. In-charge of frontier areas

Code :

- (a) A B C D
3 2 1 4
- (b) A B C D
3 1 2 4
- (c) A B C D
4 1 2 3
- (d) A B C D
4 2 1 3

139. Who among the following is the author of the *Hastayurveda*?

- (a) Palakapya
- (b) Vagbhata
- (c) Sushruta
- (d) Charaka

140. Which one of the following areas was acquired by the British under the Treaty of Deogaon, 1803?

- (a) Cuttack
- (b) Murshidabad
- (c) Surat
- (d) Calicut

141. Consider the following statements :

1. Maharashtra State has the maximum share of national highways (length in kilometres).
2. The nature of terrain and the level of economic development is one of the reasons for the maximum share of national highways in Maharashtra.

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

142. The activities or services focussed on creation, rearrangement and interpretation of new and existing ideas are referred to as

- (a) quaternary activities
- (b) quinary activities
- (c) tertiary activities
- (d) secondary activities

143. Consider the following statements about 'Ude Desh ka Aam Nagrik (UDAN)' scheme :

1. It is an innovative scheme to develop the regional aviation market.
2. It creates affordability yet economically viable and profitable flight on regional routes.

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

144. Consider the following statements :

1. The Sharavati river creates Jog Falls.
2. The Brahmani river is formed by the confluence of the Kosi and Sankh rivers.
3. The Tamraparni is a river of Tirunelveli district of Tamil Nadu.

How many of the above statements is/are correct?

- (a) 1
- (b) 2
- (c) 3
- (d) None

145. SONAR is a device that is used to measure the distance of underwater objects by a ship. Which of the following types of waves does it use for this purpose?

- (a) Infrasonic waves
- (b) Sound waves in audible range for human beings
- (c) Ultrasonic waves
- (d) All of the above

146. Which one of the following statements about the speed of sound waves is **not** correct?

- (a) The speed of sound waves in steel is higher than that in water.
- (b) The speed of sound waves in air decreases with increase in temperature.
- (c) The speed of sound waves in air increases with increase in temperature.
- (d) The speed of sound waves in water is higher than that in air.

147. The part of the human ear that converts the pressure variations associated with audible sound waves to electrical signals is

- (a) auditory nerve
- (b) cochlea
- (c) eardrum
- (d) eustachian tube

148. Which one of the following metals is most commonly used for making filament of incandescent electric bulbs?

- (a) Aluminium
- (b) Silver
- (c) Copper
- (d) Tungsten

149. A bullet of mass 10 g is horizontally fired with velocity 300 m s^{-1} from a pistol of mass 1 kg. What is the recoil velocity of the pistol?













- (a) 0.3 m s^{-1}
- (b) 3 m s^{-1}
- (c) -3 m s^{-1}
- (d) -0.3 m s^{-1}

150. A microphone converts

- (a) electrical signals to sound waves
- (b) sound waves to electrical signals
- (c) microwaves to sound waves
- (d) sound waves to microwaves

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