

PART - A
Fill in the blanks

Directions : Each of the following sentences in this section has a blank space and four words or group of words given after the sentence. Select the word or group of words you consider most appropriate for the blank space and indicate your response on the Answer Sheet accordingly.

1. The Election Commission on Saturday _____ that the Assembly elections in five States will be held from November 12 to December 7.
(a) pronounced
(b) announced
(c) promulgated
(d) issued
2. The victims were fruit vendors and they were going in an auto when they _____ an accident on the way.
(a) met with
(b) ran into
(c) experienced
(d) heard
3. Scores of villagers are _____ a sit-in protest against the construction of a new underpass.
(a) performing
(b) sitting
(c) staging
(d) standing
4. It is common for patients to stop _____ medicine as soon as they start feeling better.
(a) eating
(b) gulping
(c) swallowing
(d) taking
5. A four-year-old girl got a new lease of life after doctors at a hospital _____ a cancerous tumour from one of her kidneys.
(a) rejuvenated
(b) removed
(c) displaced
(d) replaced

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 re-arrange the jumbled parts of the sentence and mark your response accordingly.

6. closely monitor the situation by the disturbing allegations

P

Q

we are deeply concerned and will continue to

R

S

(a) R Q S P

(b) S P Q R

(c) S P R Q

(d) P R S Q

7. relieve nausea, pain and stress aromatherapy may also help

P

Q

using lavender oil on their skin but patients are cautioned against

R

S

(a) R Q P S

(b) S Q P R

(c) Q P S R

(d) R P S Q

8. without any mandate of law the plea filed through the advocate

P

Q

online is illegal and

submitted that the sale of drugs and prescription medicines

R

S

(a) R Q S P

(b) Q S R P

(c) Q R S P

(d) P R S Q

9. humans and machines have co-existed dating back to the invention of

P

Q

the potter's wheel in ancient Mesopotamia

at the physical level for millennia

R

S

(a) R S P Q

(b) Q S P R

(c) Q R P S

(d) P S Q R

10. a sell-off as US Treasury yields surged to multi-year highs

P

Q

on robust economic data

global markets also witnessed

R

S

(a) R S Q P

(b) P Q S R

(c) Q R P S

(d) S P Q R

Comprehension

Directions : In this section you have a short passage. After the passage, you will find some items based on the passage. First read the passage and then answer the items based on it. You are required to select your answers based on the contents of the passage and opinion of the author only.

Studies serve for delight, for ornament, and for ability. Their chief use for delight, is in privateness and retiring; for ornament, is in discourse; and for ability, is in the judgment, and disposition of business. For expert men can execute, and perhaps judge of particulars, one by one; but the general counsels, and the plots and marshalling of affairs, come best from those that are learned. To spend too much time in studies is sloth; to use them too much for ornament, is affectation; to make judgment wholly by their rules, is the humor of a scholar. They perfect nature, and are perfected by experience: for natural abilities are like natural plants, that need pruning, by study; and studies themselves do give forth directions too much at large, except they be bounded in by experience. Crafty men condemn studies, simple men admire them, and wise men use them; for they teach not their own use; but that is a wisdom without them, and above them, won by observation. Read not to contradict and confute; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider.

- | | |
|---|---|
| <p>11. According to the author, why should one study ?</p> <ul style="list-style-type: none">(a) To gather information about the world(b) To pass the time in a creative way(c) For pleasure, enhanced capability and holistic growth(d) To become only worldly wise <p>12. Why does the author not recommend too much of studies ?</p> <ul style="list-style-type: none">(a) Because it reflects idleness(b) Because it requires too much money(c) Because it is dangerous for the health of the mind(d) Because it makes men crafty | <p>13. According to the author, how can the studies be perfected ?</p> <ul style="list-style-type: none">(a) By reflection(b) By application(c) By conversation(d) By experience <p>14. Which kind of human beings denounce studies ?</p> <ul style="list-style-type: none">(a) Innocent(b) Cunning(c) Stupid(d) Wise <p>15. According to the author, one should read to</p> <ul style="list-style-type: none">(a) only argue(b) only believe(c) evaluate and understand(d) preach and believe |
|---|---|

Antonyms

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

16. His conversations are always absurd.
(a) farcical
(b) foolish
(c) preposterous
(d) rational
17. The politician was a dissident.
(a) agitator
(b) rebel
(c) conformist
(d) revolutionary
18. He wrote an incisive article on corruption in politics.
(a) vague
(b) penetrating
(c) trenchant
(d) precise
19. Rakesh is an eccentric prodigal.
(a) extravagant
(b) profligate
(c) wasteful
(d) thrifty
20. Friendship is always reciprocal.
(a) mutual
(b) one-sided
(c) shared
(d) corresponding
21. The debate was highly stimulating.
(a) arousing
(b) invigorating
(c) boring
(d) stirring
22. Malaria is a widespread disease.
(a) endemic
(b) pervasive
(c) common
(d) rare
23. The bill received a vehement resistance from the opposition party in the Parliament.
(a) animated
(b) apathetic
(c) fervent
(d) vigorous
24. He has been obstinate since his childhood.
(a) stubborn
(b) dogged
(c) amenable
(d) rigid
25. Mahatma Gandhi was one of the most prominent leaders of his times.
(a) renowned
(b) distinguishable
(c) eminent
(d) unknown

Synonyms

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

26. He is always anxious.
(a) worried
(b) dispassionate
(c) sluggish
(d) torpid
27. The poems of Kabir are ecstatic in nature.
(a) efficacious
(b) eerie
(c) rapturous
(d) reverential
28. Ravi loves seclusion. Therefore, he lives in the mountains.
(a) nature
(b) scripture
(c) seafaring
(d) solitariness
29. Hitler was a despot.
(a) conservative
(b) dictator
(c) passionate
(d) monstrous
30. The imagery used in the poem is vivid.
(a) lively
(b) inert
(c) ebullient
(d) caustic
31. A human being is always vulnerable to other human beings.
(a) resilient
(b) elastic
(c) defenceless
(d) crude
32. His language is political and vitriolic.
(a) imaginative
(b) sprightly
(c) vivacious
(d) abusive
33. The Managing Director of the company declared that he is broke and there is a need to seek support from the government.
(a) bankrupt
(b) rich
(c) making profit
(d) having liabilities
34. He loves doing nasty things.
(a) nice
(b) fastidious
(c) foul
(d) finicky
35. He could not muster courage to speak the truth before his friend.
(a) injure
(b) spoil
(c) gather
(d) maim

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 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).

36. He had arrived at Cairo a few months before protests shook the Arab world. No error
 (a) (b) (c) (d)
37. Most of us who are older competitive runners are not able to race anywhere at the same speed
as we do when we were 30. No error
 (a) (b) (c) (d)
38. Work hard lest you do not fail. No error
 (a) (b) (c) (d)
39. The Eastern Ghats are home of 2600 plant species and this habitat fragmentation
can pose a serious threat to endemic plants. No error
 (a) (b) (c) (d)
40. Turbidity current is a fast-moving current that sweeps down submarine canyons,
carrying sand and mud into the deep sea. No error
 (a) (b) (c) (d)
41. Every one of the boys love to ride. No error
 (a) (b) (c) (d)
42. Neither praise nor blame seem to affect him. No error
 (a) (b) (c) (d)
43. Many a man has succumbed to this temptation. No error
 (a) (b) (c) (d)
44. A time slot of fifteen minutes are allowed to each speaker. No error
 (a) (b) (c) (d)
45. He asked whether either of the brothers were at home. No error
 (a) (b) (c) (d)

Idioms and Phrases

Directions : Given below are some idioms/phrases followed by four alternative meanings to each. Choose the response (a), (b), (c) or (d) which is the most appropriate expression.

46. Be over the hill

- (a) To be on a mountain top
- (b) To travel in the jungle
- (c) To be too old to do things
- (d) To do something in the most complete way

47. Bite your tongue

- (a) To stop yourself from saying something because it would be better not to
- (b) To bite off your tongue while eating
- (c) To feel sorry
- (d) To ask someone something that you want

48. Turn a blind eye

- (a) To run away
- (b) To begin to behave in a more positive manner
- (c) To change a situation
- (d) To choose to ignore behaviour that you know is wrong

49. Yellow journalism

- (a) Paid storytelling
- (b) Government reports published on yellow coloured papers
- (c) Writings in newspapers that try to influence people's opinion by using strong language and false information
- (d) Journalism which agrees completely with the policies of the governments and capitalists

50. To be in seventh heaven

- (a) To fly in the air
- (b) To be extremely happy
- (c) To be completely alone
- (d) To visit a place which is in the list of the seven wonders of the world

PART - B

Compared to audible sound waves, ultrasound waves have

- (a) higher speed.
- (b) higher frequency.
- (c) longer wavelength.
- (d) both higher speed and frequency.

A rigid body of mass 2 kg is dropped from a stationary balloon kept at a height of 50 m from the ground. The speed of the body when it just touches the ground and the total energy when it is dropped from the balloon are respectively

(acceleration due to gravity = 9.8 m/s^2)

- (a) 980 m.s^{-1} and 980 J
- (b) $\sqrt{980} \text{ m.s}^{-1}$ and $\sqrt{980} \text{ J}$
- (c) 980 m.s^{-1} and $\sqrt{980} \text{ J}$
- (d) $\sqrt{980} \text{ m.s}^{-1}$ and 980 J

The temperature of a place on one sunny day is 113 in Fahrenheit scale. The Kelvin scale reading of this temperature will be

- (a) 318 K
- (b) 45 K
- (c) 62.8 K
- (d) 335.8 K

1. Radiations coming from the Sun are mostly in the form of

- (a) light only.
- (b) light and long wavelength infrared.
- (c) light and short wavelength infrared.
- (d) both short and long wavelength infrared.

55. Which of the following are the characteristics of electromagnetic waves ?

1. They are elastic waves.
2. They can also move in vacuum.
3. They have electric and magnetic components which are mutually perpendicular.
4. They move with a speed equal to 3 lakh meters per second.

Select the correct answer using the code given below :

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

56. Which one of the following is a non-metallic mineral ?

- (a) Iron
- (b) Mica
- (c) Copper
- (d) Bauxite

57. Which one of the following is a Rabi crop in the Northern States of India ?

- (a) Rice
- (b) Bajra
- (c) Barley
- (d) Ragi

58. The rivers of North-West Europe are good examples of

- (a) parallel pattern of drainage.
- (b) radial pattern of drainage.
- (c) barbed pattern of drainage.
- (d) trellis pattern of drainage.

59. Which one of the following ocean currents is a cold current ?

- (a) South Atlantic Drift
- (b) Mozambique Current
- (c) East Australian Current
- (d) Caribbean Current

Paradeep Port is located on the delta of river

- (a) Rihand
- (b) Ganga
- (c) Mahanadi
- (d) Baitarani

Which one of the following hypothesis/theory explains the origin of the universe ?

- (a) Nebular hypothesis
- (b) Binary theory
- (c) Big Bang theory
- (d) Planetesimal hypothesis

Which among the following struggles, based on Gandhi's philosophy of Satyagraha, involved the industrial working class ?

- (a) Champaran
- (b) Kheda
- (c) Ahmedabad
- (d) Bardoli

Consider the following statements related to the Virashaiva tradition in Karnataka :

1. The Virashaiva movement was led by a Brahmana named Basavanna, a minister in the court of the Kalachuri ruler in the twelfth century.
2. The Virashaivas encouraged practices, approved by the Dharmashastras, like post-puberty marriages and remarriage of widows.

Which of the statement/s given above is/are correct ?

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

64. Consider the following statements related to Wellesley's administration :

1. In the six years of Wellesley's administration, the army accounted for 42.5 percent of the Company's total expenditure.
2. Wellesley's administrative measures were restricted to the affairs of the Company and had nothing to do with the commercial and military affairs of the Indian ruling families.

Which of the statement/s given above is/are correct ?

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

65. Consider the following statements concerning the Russian Revolution :

1. The Bolsheviks believed that in a repressive society like Tsarist Russia, the party should be disciplined and should control the number of its members.
2. The Mensheviks believed that the party should be opened to all (as in Germany).

Which of the statement/s given above is/are correct ?

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

40 2

66. Water is heated with a coil of resistance R connected to domestic supply. The rise of temperature of water will depend on

1. Supply voltage.
2. Current passing through the coil.
3. Time for which voltage is supplied.

Select the correct answer from among the following :

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

67. A pendulum clock is lifted to a height where the gravitational acceleration has a certain value g . Another pendulum clock of same length but of double the mass of the bob is lifted to another height where the gravitational acceleration is $g/2$. The time period of the second pendulum would be : (in terms of period T of the first pendulum)

- (a) $\sqrt{2} T$
- (b) $\frac{1}{\sqrt{2}} T$
- (c) $2\sqrt{2} T$
- (d) T

68. The loudness of sound depends upon the

- (a) velocity of sound waves in the medium.
- (b) amplitude of the sound waves.
- (c) frequency of the sound waves.
- (d) frequency and velocity of the sound waves.

69. Two bodies of mass M each are placed R distance apart. In another system, two bodies of mass $2M$ each are placed $\frac{R}{2}$ distance apart.

If F be the gravitational force between the bodies in the first system, then the gravitational force between the bodies in the second system will be

- (a) $16 F$
- (b) $1 F$
- (c) $4 F$
- (d) None of the above

70. Light rays move in straight lines. But through an optical fibre, they can move in any type of zigzag path because

- (a) the holes through the fibre are extremely fine.
- (b) light rays are absorbed at the entry end and relieved at the exit end of the fibre.
- (c) scattering of light occurs inside the fibre.
- (d) successive total internal reflections occur as a ray moves through the fibre.

71. Which one of the following statements regarding cathode rays is **not** correct ?

- (a) Cathode ray particles are electrons.
- (b) Cathode ray particles start from anode and move towards cathode.
- (c) In the absence of electrical and magnetic fields, cathode rays travel in straight lines.
- (d) Television picture tubes are cathode ray tubes.

72. A very large volume of hydrogen can be accommodated by making
- non-metallic hydrides.
 - hydrogen peroxide.
 - non-stoichiometric hydrides.
 - alkali metal hydrides.
73. Which one of the following is **not** a monatomic element?
- Copper
 - Helium
 - Iodine
 - Barium
74. Which one of the following represents the correct order of electron releasing tendency of metals?
- $Zn > Cu > Ag$
 - $Ag > Cu > Zn$
 - $Cu > Zn > Ag$
 - $Cu > Ag > Zn$
75. Which one of the following is the major constituent of biogas?
- Carbon dioxide
 - Nitrous oxide
 - Methane
 - Oxygen
76. Thyroid gland produces a hormone called "Thyroxine" which
- controls blood glucose levels.
 - controls ovulation.
 - controls metabolic rate.
 - maintains pregnancy.
77. Which one of the following is a bacterium that causes disease in the human body?
- Varicella zoster*
 - Trypanosoma gambiense*
 - Salmonella typhi*
 - Plasmodium falciparum*
78. Which one of the following statements regarding viruses is **not** true?
- Viruses need living cells to reproduce.
 - All viruses are parasites.
 - Viruses can synthesize their food through photosynthesis.
 - Viruses are similar to chemical substances outside the host.
79. Which one of the following diseases may be caused by the deficiency of vitamin C?
- Rickets
 - Rabies
 - Hepatitis
 - Scurvy

80. A car starts from Bengaluru, goes 50 km in a straight line towards south, immediately turns around and returns to Bengaluru. The time taken for this round trip is 2 hours. The magnitude of the average velocity of the car for this round trip

- (a) is 0.
- (b) is 50 km/hr.
- (c) is 25 km/hr.
- (d) cannot be calculated without knowing acceleration.

81. "The sum of emf's and potential differences around a closed loop equals zero" is a consequence of

- (a) Ohm's law.
- (b) Conservation of charge.
- (c) Conservation of momentum.
- (d) Conservation of energy.

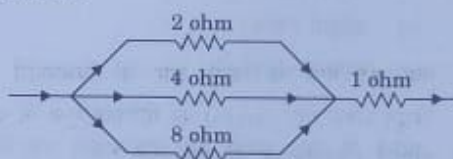
82. A student measures certain lengths using a meter scale having least count equal to 1 mm. Which one of the following measurements is more precise?

- (a) 0.50 mm
- (b) 29.07 cm
- (c) 0.925 m
- (d) 910 mm

83. If the work done on the system or by the system is zero, which one of the following statements for a gas kept at a certain temperature is correct?

- (a) Change in internal energy of the system is equal to flow of heat in or out of the system.
- (b) Change in internal energy of the system is less than heat transferred.
- (c) Change in internal energy of the system is more than the heat flow.
- (d) Cannot be determined.

84. Consider the following part of an electric circuit:



The total electrical resistance in the given part of the electric circuit is

- (a) $\frac{15}{8}$ ohm
- (b) $\frac{15}{7}$ ohm
- (c) 15 ohm
- (d) $\frac{17}{3}$ ohm

$$\frac{2+4+8}{8} = 3 + \frac{1}{8}$$

85. Which one of the following statements regarding lenses is **not** correct?

- (a) A convex lens produces both real and virtual images.
- (b) A concave lens produces both real and virtual images.
- (c) A convex lens can produce images equal, greater and smaller than the size of the object.
- (d) A concave lens always produces images smaller than the size of the object.

86. 10 g of ice at -10°C is mixed with 10 g of water at 0°C . The amount of heat required to raise the temperature of mixture to 10°C is
- 400 cal
 - 550 cal
 - 1050 cal
 - 1200 cal
87. Which one of the following does **not** represent the salt, Calcium carbonate?
- Lime water
 - Limestone
 - Chalk
 - Marble
88. Soaps clean surfaces on the principle based on
- Viscosity
 - Floatation
 - Elasticity
 - Surface tension
89. Which one of the following substances is **not** a mixture?
- Tin
 - Sea water
 - Soil
 - Air
90. Which one of the following is termed as 'Dry ice'?
- Ice present in ice-cream
 - Solid water at Antarctica
 - Solid state of carbon dioxide
 - Solid water of ionosphere
91. Net movement of water from a dilute to a concentrated solution through a selectively permeable membrane is called
- Diffusion
 - Dispersion
 - Osmosis
 - Absorption
92. Blood is a type of
- Epithelial tissue
 - Muscular tissue
 - Nervous tissue
 - Connective tissue
93. Mitochondria are able to produce their own
- Nucleus
 - Proteins
 - Chloroplasts
 - Digestive enzymes
94. Which one of the following statements is correct?
- Xylem consists of tracheids, vessels, xylem parenchyma and xylem fibres.
 - Flexibility in plants is due to sclerenchyma.
 - Parenchyma have no intercellular spaces.
 - Xylem consists of sieve plate, sieve tube and companion cells.
95. Who among the following popularized the use of embryological characters in taxonomy?
- Carl Linnaeus
 - Panchanan Maheshwari
 - Birbal Sahni
 - Bentham and Hooker

96. Lithosphere consists of

- (a) upper and lower mantle.
- (b) crust and core.
- (c) crust and uppermost solid mantle.
- (d) mantle and core.

97. The principal component(s) of Nehru-Mahalanobis strategy of economic development was/were

- 1. Restructuring economic dependency on metropolitan capitalism into independent economic development.
- 2. Transition from semi-feudal agriculture to capitalist farming.

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

98. The provisions of the Fifth Schedule of the Constitution of India shall **not** apply to the administration and control of the Scheduled Areas and Scheduled Tribes in

- 1. Chhattisgarh, Jharkhand and Odisha
- 2. Assam and Tripura
- 3. Meghalaya and Mizoram

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

99. Consider the following statements related to Dayanand's idea of social reform :

- 1. Dayanand's reform envisaged a social order, where different castes performed functions suitable to their status determined by merit.
- 2. Dayanand's 'robust Vedic counterpart' challenged the masculine West that had enslaved the Aryavarta.

Which of the statement/s given above is/are correct ?

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

100. Consider the following statements concerning the American War of Independence :

- 1. The Americans raised the slogan, 'No taxation without representation'.
- 2. The American merchants resorted to the boycott of the British products.

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

101. The first UDAY (Utkrisht Double Decker Air-Conditioned Yatri) Express train runs between

- (a) Delhi and Kalka
- (b) Bengaluru and Coimbatore
- (c) Chennai and Visakhapatnam
- (d) Chennai and Bengaluru

102. Who among the following were selected for the Rajiv Gandhi Khel Ratna Award 2019 ?
- Vijay Kumar and Yogeshwar Dutt
 - Sakshi Malik and Jitu Rai
 - Virat Kohli and Mirabai Chanu
 - Bajrang Punia and Deepa Malik
103. Betel leaf of which one of the following States has been accorded a GI tag recently ?
- Andhra Pradesh
 - Madhya Pradesh
 - Kerala
 - Mizoram
104. SAMARTH is a flagship skill development scheme of which one of the following Ministries ?
- Ministry of Textiles
 - Ministry of Agriculture and Farmers Welfare
 - Ministry of Skill Development and Entrepreneurship
 - Ministry of Human Resource Development
105. CORAS is a separate Commando Unit of
- National Security Guard
 - Central Industrial Security Force
 - Railway Protection Force
 - Central Reserve Police Force
106. Which one of the following statements is **not** true about Ijarah system ?
- It was a system of revenue farming.
 - It encouraged the role of middlemen.
 - Under this system, land revenue was fixed for the peasant.
 - The ijaradar paid a fixed amount to the State treasury.
107. During the Swadeshi movement, a National College was started in Calcutta under the principalship of
- Rabindranath Tagore
 - Aurobindo Ghosh
 - Rajani Kant Sen
 - Syed Abu Mohammad
108. The ruins of Vijayanagara (Hampi) were brought to public light in the year 1800 by the following British surveyor and engineer :
- James Prinsep
 - Colin Mackenzie
 - James Rennell
 - Charles Metcalfe
109. Which country among the following was **not** a part of the Third Coalition against Napoleon ?
- Russia
 - Prussia
 - Sweden
 - France
110. Which one of the following pairs of travellers and their nationality is **not** correctly matched ?
- Ibn Battuta – Moroccan
 - Duarte Barbosa – Portuguese
 - Jean Baptiste Tavernier – Dutch
 - Niccolao Manucci – Venetian

111. World Humanitarian Day is celebrated on

- (a) 26th June
- (b) 17th July
- (c) 19th August
- (d) 27th September

112. Which one of the following is the name given to the lander of Chandrayaan-2 ?

- (a) Vigyan
- (b) Anusandhan
- (c) Pragyan
- (d) Vikram

113. Along with Pranab Mukherjee, how many more persons were conferred the Bharat Ratna Award in the year 2019 ?

- (a) One
- (b) Two
- (c) Three
- (d) Four

114. Aishwarya Pissay excels in which one of the following sports ?

- (a) Badminton
- (b) Boxing
- (c) Motorsports
- (d) Chess

115. Which one of the following films was adjudged as the Best Feature Film in the 66th National Film Awards ?

- (a) Bulbul Can Sing
- (b) Hellaro
- (c) Badhaai Ho
- (d) Uri

116. A thin disc and a thin ring, both have mass M and radius R . Both rotate about axes through their center of mass and are perpendicular to their surfaces at the same angular velocity. Which of the following is true ?

- (a) The ring has higher kinetic energy
- (b) The disc has higher kinetic energy
- (c) The ring and the disc have the same kinetic energy
- (d) Kinetic energies of both the bodies are zero since they are not in linear motion

117. Let there be an object having some chemicals in it. It starts moving with a uniform velocity v and a chemical reaction starts happening. In this case, which of the following statement/s is/are correct ?

1. Chemical reactions happening in the system cannot change the velocity v of the center of mass of the object.
2. Chemical reactions happening in the system cannot change kinetic energy of the particles inside with respect to the center of mass of object.

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

118. In which of the following phenomena do heat waves travel along a straight line with the speed of light ?

- (a) Thermal conduction
- (b) Thermal convection
- (c) Thermal radiation
- (d) Both, thermal conduction and radiation

119. Which one of the following statements regarding Ohm's law is **not** correct ?

- (a) Ohm's law is an assumption that current through a conductor is always directly proportional to the potential difference applied to it.
- (b) A conducting device obeys Ohm's law when the resistance of a device is independent of magnitude and polarity of applied potential difference.
- (c) A conducting material obeys Ohm's law when the resistance of material is independent of the magnitude and direction of applied electric field.
- (d) All homogeneous materials obey Ohm's law irrespective of whether the field is within range or strong.

120. When a ball bounces off the ground, which of the following changes suddenly ?

(Assume no loss of energy to the floor)

- (a) Its speed
- (b) Its momentum
- (c) Its kinetic energy
- (d) Its potential energy

121. Which one of the following compounds does **not** exhibit a different oxidation number of the same element ?

- (a) Pb_3O_4
- (b) Fe_3O_4
- (c) Fe_2O_3
- (d) Mn_3O_4

122. Which one of the following statements about glass is **not** correct ?

- (a) Glass is often said to be a supercooled liquid.
- (b) Glass has no definite melting point.
- (c) Soda glass is harder than pyrex glass.
- (d) Boron is present in pyrex glass.

123. Which one of the following statements is correct ?

- (a) Both boiling and evaporation are surface phenomena.
- (b) Boiling is a surface phenomenon, but evaporation is a bulk phenomenon.
- (c) Both boiling and evaporation are bulk phenomena.
- (d) Boiling is a bulk phenomenon, but evaporation is a surface phenomenon.

124. Which one of the following statements about diamond and graphite is **not** correct?
- Diamond has a tetrahedral structure, whereas graphite has a hexagonal planar structure.
 - Both physical and chemical properties of diamond and graphite are different.
 - Graphite is soft but diamond is hard.
 - Graphite is a good conductor of electricity while diamond is not.
125. The raw materials used for the manufacture of Portland cement are
- Lime, silica and sulphur dioxide
 - Lime, silica and carbon dioxide
 - Lime, silica and alumina
 - Lime, silica and boric acid
126. Which one of the following statements about water is **not** true?
- Hydrogen bonds are present in liquid water.
 - Water has a high boiling point.
 - Water has a high heat of fusion.
 - Water is a non-polar molecule.
127. A sample of 'soft soap' contains
- Caesium
 - Potassium
 - Calcium
 - Magnesium
128. If an object moves at a non-zero constant acceleration for a certain interval of time, then the distance it covers in that time
- depends on its initial velocity.
 - is independent of its initial velocity.
 - increases linearly with time.
 - depends on its initial displacement.
129. A solid disc and a solid sphere have the same mass and same radius. Which one has the higher moment of inertia about its centre of mass?
- The disc
 - The sphere
 - Both have the same moment of inertia
 - The information provided is not sufficient to answer the question
130. Two substances of densities ρ_1 and ρ_2 are mixed in equal volume and their relative density is 4. When they are mixed in equal masses, relative density is 3. The values of ρ_1 and ρ_2 respectively are
- 6, 2
 - 3, 5
 - 12, 4
 - 9, 3

131. Which of the following was/were among the decisions taken by the First Continental Congress held in Philadelphia in September 1774?
- It rejected a plan for a colonial union under the British authority.
 - It drew up a statement of grievances.
 - It agreed upon a scheme to stop trade between the Colonies and England.
- Select the correct answer using the code given below :
- 1 and 3 only
 - 2 only
 - 1 and 2 only
 - 1, 2 and 3
132. Which one of the following land territories of Indonesia is **not** touched by the Equator?
- Sumatra
 - Sulawesi
 - Java
 - Kalimantan
133. Which one of the following sedimentary rocks is organically formed?
- Shale
 - Chert
 - Halite
 - Chalk
134. According to the Köppen climatic classification, the letter code Cfa denotes
- Tropical wet climate.
 - Humid subtropical climate.
 - Tundra climate.
 - Tropical wet and dry climate.
135. In which one of the following folds is the axial plane found to be virtually horizontal?
- Isoclinal
 - Anticlinal
 - Recumbent
 - Monoclinal
136. How many Ramsar conservation sites have been enlisted from India so far?
- 12
 - 16
 - 27
 - 62
137. The Munda language group belongs to which family?
- Austrie
 - Dravidian
 - Sino-Tibetan
 - Indo-European
138. Which one of the following statements about the Suez Canal is **not** correct?
- The Suez Canal was constructed in 1869.
 - It links the Mediterranean Sea and the Red Sea.
 - It has a six lock system and ships cross the different levels through these locks.
 - It has given Europe a new gateway to the Indian Ocean.
139. Which among the following statements is **not** correct about the Reign of Terror?
- The Jacobins dashed out the Girondists with the help of sans-culottes.
 - The Jacobins were in league with the French clergy.
 - The arrest for anti-revolutionary activities was by law restricted to the political class.
 - The Reign of Terror came to an end with the execution of Robespierre by guillotine in July 1794.
140. Who among the following was the first Indian to qualify for the Indian Civil Service?
- Satyendranath Tagore
 - Surendranath Banerjee
 - R.C. Dutt
 - Subhas Chandra Bose