

Paper II : General Ability Test

Part A — English

ORDERING OF WORDS IN A SENTENCE

Directions (Qs. 1 to 5) : In these items, some parts of a sentence have been jumbled up. You are required to rearrange these jumbled parts labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence from the alternatives (a), (b), (c) and (d).

1. The Government wants to know when the patient was admitted to hospital/ (P) and/ (Q) got totally paralysed / (R) as per your instructions / (S)

The proper sequence should be

- (a) P Q R S (b) P S Q R
(c) S R Q P (d) R S Q P

2. I feel that the civic administration/ (P) is one proof / (Q) of the efficiency of / (R) cleanliness in the city / (S)

The proper sequence should be

- (a) P Q R S (b) S R P Q
(c) R S Q P (d) S Q R P

3. Today science has progressed barely conceivable / (P) at a rate / (Q) prior to our century / (R) to most people / (S)

The proper sequence should be

- (a) Q P S R (b) R Q P S
(c) Q P R S (d) S R Q P

4. The police who were stealing from the shop / (P) red-handed/ (Q) caught/ (R) the thieves / (S)

The proper sequence should be

- (a) R S Q P (b) Q R S P
(c) R Q P S (d) P Q R S

5. India's most important naval battle between the Portuguese and the rulers of Calicut, / (P) with devastating

consequences / (Q) off Diu / (R) was fought in February 1509 / (S)

The proper sequence should be

- (a) P R S Q (b) P Q R S
(c) S R P Q (d) R Q P S

ORDERING OF SENTENCES

Directions (Qs. 6 to 10) : In these items, each passage consists of six sentences. The first and the sixth sentences are given in the beginning. The middle four sentences in each passage have been removed and jumbled up. These jumbled sentences are labelled P, Q, R and S. Choose the proper sequence out of the four sentences P, Q, R and S from the alternatives (a), (b), (c) and (d).

6. S₁ : Water is a precious commodity.

S₆ : That would be the end of all life which depends on clean, fresh water.

P : We do not realise that the sources of water fit for human use are limited.

Q : Yet we waste it and pollute it carelessly.

R : If we were to go on wasting and polluting water, a day would come when there would not be sufficient wholesome water.

S : There can be no life without water.

The proper sequence should be

- (a) Q R S P (b) R Q P S
(c) S Q P R (d) S R Q P

7. S₁ : After graduating from

Cambridge, Jagdish Chandra Bose came back to India.

S₆ : After three years, he won his point and began receiving the full salary.

P : Later even that was reduced to half.

Q : He was appointed Professor of Physics in the Presidency College, Calcutta.

R : Bose refused to draw the salary and began to fight against this discrimination.

S : But he was paid only two-thirds of the salary to which a European Professor was entitled.

The proper sequence should be

- (a) Q S P R (b) S P R Q
(c) Q R S P (d) S R Q P

8. S₁ : A word about vocational training.

S₆ : And, therefore, we had a small class in carpentry.

P : I learnt it from him and taught the art to those who were ready to take it up.

Q : For this purpose Mr. Kallenbach went to a Trappist monastery and returned having learnt shoe-making.

R : It was my intention to teach everyone of the youngsters some useful manual vocation.

S : Mr. Kallenbach had some experience of carpentry, and there was another inmate who knew it.

The proper sequence should be

- (a) R S Q P (b) R Q P S
(c) S R Q P (d) R P S Q

9. S₁ : Space is, for the most part, emptiness.

S₆ : Only in the course of many thousands of years it is appreciable.

P : But they are not really fixed, they are all moving about in space.

Q : They are called fixed stars.

R : In this emptiness there are bright centres of heat and light.

S : It is because of their very big size and very long distances that their motion is not perceived.

The proper sequence should be

- (a) R P Q S (b) Q P S R
(c) R Q P S (d) S Q P R

10. S₁ : In 326 B.C. Alexander the Great invaded India.

S₆ : So Alexander defeated Porus in a bloody battle at Karri.

P : The King of Taxila welcomed him and his men.

Q : Porus, however, did not oblige.

R : He crossed the river Indus and advanced towards Taxila.

S : Then Alexander challenged King Porus and asked for his submission.

The proper sequence should be

- (a) R S P Q (b) R P S Q
(c) P R S Q (d) S Q R P

SELECTING WORDS

Directions (Qs. 11 to 16) : In these questions, following passage, you are given blank spaces marked 11 to 16. Against each of these numbers, below the passage, a choice of three words marked (a), (b) and (c) is suggested. Choose the best word from these three as your answer.

The Industrial Revolution of Europe led to the production of vast quantities of goods and workers began to be disillusioned with their poverty. The

factory owners needed ...(11)... workers and had to show goodwill to them so that they would stay on ...(12)... business. As in many other reforms, ...(13)... employers their workers better, and the ...(14)... slowly spread that workers were entitled to ...(15)... consideration. Since men were free to work ...(16)... any master they chose, good masters soon had the pick of the workers.

11. (a) Disciplined (b) Skilled
(c) Honest
12. (a) For (b) At
(c) In
13. (a) Some (b) Few
(c) All
14. (a) Plan (b) Idea
(c) Strategy
15. (a) No (b) Full
(c) Some
16. (a) Against (b) With
(c) For

SPOTTING ERRORS

Directions (Qs. 17 to 22) : In each of these questions, six sentences are given. Each sentence has three underlined parts, indicated by (a), (b) and (c). Read each sentence to find out whether there is an error. If you find an error in any one of the underlined parts (a), (b) and (c), indicate that part as your answer. If a sentence has no error, indicate this by the letter 'd', which stands for "No error". Errors may belong to grammar, usage or idiom.

17. The mother, in spite of the protests from the child, / (a) made it to drink the medicine / (b) three times a day. / (c) No error / (d)

18. The milk / (a) is very good for / (b) growing children of all ages. / (c)

No error. / (d)

19. That young boy from Brazil remained / (a) the foremost figure of the football world / (b) for about one and half decade. / (c) No error. / (d)

20. Now that / (a) their annual examination over / (b) they want to go on a tour. / (c) No error / (d)

21. Santosh Khanna, whom everybody thought / (a) would win the match / (b) actually lost in the first round. / (c) No error. / (d)

22. The shirt I bought from Mumbai / (a) is superior and / (b) costlier than the one you are wearing. / (c) No error. / (d)

SENTENCE IMPROVEMENT

Directions (Qs. 23 to 28) : In these questions, look at the underlined part of each sentence. Below each sentence three possible substitutions (a), (b) and (c) for the underlined part are given. If one of them is better than the underlined part, indicate your response against the corresponding letter (a), (b) or (c). If none of the substitutions improves the sentence, indicate (d) as your response. Thus, a 'No improvement' response will be signified by the letter (d).

23. When we reached the theatre, the film began already.

- (a) Was beginning
(b) Has begun
(c) Had begun
(d) No improvement

24. He made a long speech, but it was irrelevant of the subject of the seminar.

- (a) To (b) For
(c) About (d) No improvement

25. The inspector said that he was going to give the thieves a lesson.

- (a) Offer (b) Learn
(c) Teach (d) No improvement

26. My hen laid four eggs yesterday.

- (a) Lay (b) Lain
(c) Lied (d) No improvement

27. Will you come to me in the evening, if you will have time ?

- (a) Shall have the time
(b) Have the time
(c) Could have the time
(d) No improvement

28. I could not tell them why did not he attend the lecture.

- (a) Did he not attend
(b) He not attended
(c) He did not attend
(d) No improvement

SYNONYMS

Directions (Qs. 29 to 33) : In each of these questions, you find a sentence, a part of which is underlined. For each underlined part, four words/phrases are listed below each of the sentences given in Qs. 29 to 33. Choose the word/phrase nearest in meaning to the underlined part.

29. Students should never flout the examination rules.

- (a) Scorn (b) Mock
(c) Disobey (d) Insult

30. I almost collapsed on the bed after a gruelling three-hour walk.

- (a) Demanding (b) Laborious
(c) Compelling (d) Exhausting

31. He always gives lame excuses for his absence from the office.

- (a) Illogical (b) Unbelievable
(c) Flimsy (d) Inconsistent

32. The situation is more grave now than it ever was.

- (a) Dangerous (b) Serious
(c) Complicated (d) Uncontrollable

33. The scheme is not as fanciful as it sounds.

- (a) Imaginative (b) Funny

- (c) Ridiculous (d) Ambitious

ANTONYMS

Directions (Qs. 34 to 38) : In this section, each item consists of a word or a phrase which is underlined in the given sentence. It is followed by four words or phrases (a), (b), (c) and (d). Choose the word or phrase which is closest to the opposite in meaning of the underlined word or phrase.

34. Some of his actions are detrimental to the cause of communal harmony.

- (a) Useful (b) Important
(c) Beneficial (d) Crucial

35. He has a weakness for foreign goods.

- (a) Hand-crafted (b) Indigenous
(c) Fashionable (d) Exotic

36. He used the meagre resources well to further his studies.

- (a) Abundant (b) Collective
(c) Natural (d) Borrowed

37. Most of the machines in this factory are obsolete.

- (a) Functional (b) Efficient
(c) Modern (d) Damaged

38. His short but philosophical speech was applauded by the audience.

- (a) Misunderstood (b) Jeered
(c) Rejected (d) Praised

COMPREHENSION

Directions (Qs. 39 to 50) : In this section, you have four short passages. After each passage, you will find several questions based on it. First, read Passage I and answer the questions based on it. Then go on to the other passages.

PASSAGE I

Anaemia is a word used to describe many different conditions having to do with disorders of the blood. These conditions exist when the blood does not contain the normal number of red cells, or when the cells do not have the

normal amount of haemoglobin.

Anaemia can be caused by poor blood formation, the destruction of cells, or by too much loss of blood. And these conditions, in turn, may be caused by different body disorders. So when a doctor treats 'anaemia', he has to know exactly which type he is dealing with.

39. When we talk of anaemia, we are concerned with

- (a) Blood pressure and blood cells
- (b) The quality and quantity of blood in our body
- (c) The nature of flow of blood in our body
- (d) The number of white cells in the blood

40. According to the passage which one of the following is not the cause of anaemia ?

- (a) Poor blood formation
- (b) Loss of blood
- (c) Improper intake of oxygen
- (d) Destruction of cells

41. It is difficult to treat anaemia because

- (a) It is a rare blood disorder
- (b) It demands a long-term treatment
- (c) Diagnosis is rather difficult
- (d) There are no definite causes

PASSAGE II

When I accepted an invitation to become a visiting professor at a certain Mid-Western University, I had no clear notion as to what it meant. I also asked my friends, but in vain. I had accepted it after warning my sponsors that I was a mere novice in academic matters and that it'd be up to them to see that I did not make a fool of myself on their campus. On stepping into my very first class I felt startled, as it consisted of elderly women, each one holding a copy

of The Guide in her hand. I was pleased no doubt at finding my book in so many hands, but I also felt uneasy. If they cross-examined me on my book, I should feel lost; they had the advantage over me of being up-to-date with the details of my story. I stiffened into a defensive attitude.

42. When the author accepted the invitation to become a visiting Professor, he

- (a) Knew everything about his job
- (b) Had a vague idea of his job
- (c) Knew nothing about his job
- (d) Did not know where the Mid-Western University was located

43. The author was afraid that he might make a fool of himself in the University because he had

- (a) No command of English
- (b) To face native speakers in the class
- (c) To teach at a new University
- (d) No experience of teaching

44. The author adopted a defensive attitude because he was afraid that the students might

- (a) Ask him awkward and irrelevant questions
- (b) Criticise his book
- (c) Play some mischievous trick on him
- (d) Question him thoroughly on his book

PASSAGE III

It must have been a hard life to live for man in the early days, specially before tribes were formed. He had no house, no clothes except perhaps some skins and must have been continually fighting. To get his daily food he had to hunt and kill animals or gather nuts and fruits. He must have felt that he had enemies everywhere. Even nature must

have seemed to him an enemy, sending hail and snow and earthquakes. Poor little slave he was, creeping about the earth, afraid of everything because he could understand nothing. If the hail came he thought that some god in the clouds was trying to hit him. And he became frightened and wanted to do something to please this person who sent the hail, the rain and the snow.

45. According to the author the early man

- (a) Did not have clothes
- (b) Liked to wear dresses made of skin
- (c) Fought for clothes
- (d) Worked hard for clothes

46. The author thinks that the early man

- (a) Could sense where his enemies were
- (b) Thought everything was against him
- (c) Liked to fight everybody
- (d) Made enemies wherever he went

47. From this passage it is clear that early man's life was governed by

- (a) A search for knowledge
- (b) Hunger and fear
- (c) Hope and despair
- (d) Blind faith

PASSAGE IV

Gandhi's aim in life was to improve the condition of poor and suffering people and to aid people in any way he could, but always without using force. He was against every sort of evil no matter of what kind. When he tried to find out about the condition of poor farm workers in Champaran, the people crowded around him by the hundreds. A friend had come among them, someone who wanted to help them and to them this was something new. When

the police ordered Gandhi to leave the place, he refused and in the court he explained why he could not obey. Then he asked the court to punish him for breaking the law. The court did not know what verdict to give in such a case and so let him go free. This was the first step in what came to be an important and common event in many parts of India, to refuse to obey a law considered to be unjust, and at the same time calmly accept any punishment that might be given and never retaliate.

48. The farm workers crowded around Gandhi because they thought that he was

- (a) Like a God to them
- (b) A stranger
- (c) Their friend
- (d) An enemy of the British

49. When the police ordered him to leave the place, Gandhi

- (a) Did so peacefully
- (b) Disobeyed the orders
- (c) Asked the people to attack the police
- (d) Asked the police to punish him

50. In the case against Gandhi, the court

- (a) Did not pass any verdict
- (b) Found him guilty
- (c) Pointed out that his action was wrong
- (d) Praised him for his action

ANSWERS

1. (b) 2. (d) 3. (a) 4. (a)
5. (c) 6. (c) 7. (a) 8. (a)
9. (c) 10. (c) 11. (b) 12. (c)
13. (a) 14. (b) 15. (c) 16. (b)
17. (b) : (b) should be "made it to take the medicine."
18. (a) : (a) should be "Milk".

19. (c) : (c) should be "for about one and a half decade".

20. (b) : (b) should be "their annual examination is over".

21. (a) : (a) should be "who every body thought".

22. (b) : (b) should be "is superior to and".

23. (c) 24. (a) 25. (c) 26. (d)

27. (b) 28. (c) 29. (c) 30. (d)

31. (c) 32. (b) 33. (a) 34. (c)

35. (b) 36. (a) 37. (c) 38. (b)

39. (b) 40. (c) 41. (b) 42. (b)

General Ability Test : Part B — General Knowledge

51. If high tide had occurred at a particular place at 11.00 AM, then the next high tide would occur at the same place at

- (a) 11.00 PM (b) 11.26 PM
(c) 11.53 PM (d) 11.53 AM

52. The South-West winds between 30° S and 50° S latitude blow with a high speed because the

- (a) Low pressure area in the North has a steep gradient
(b) High pressure area over the South Pole is most intense
(c) Southern hemisphere has more water and less land areas
(d) Southern hemisphere reflects lesser temperature contrast

53. A cyclone in the modern hemisphere is a

- (a) High pressure system with clockwise winds
(b) Low pressure system with anti-clockwise winds
(c) High pressure system with anti-clockwise winds
(d) Low pressure system with clockwise winds

54. Consider the following statements :

Assertion (A) :

Over the land, absolute humidity is the highest near the equator and

43. (d) 44. (d) 45. (a) 46. (b)

47. (d) 48. (c) 49. (b) 50. (a)

it is the lowest in Central Asia in winter.

Reason (R) :

The amount of water vapours held by a body of air is determined by the temperature of the air.

Of these statements :

- (a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

55. Which one of the following phenomena occurs when water vapour condenses around a particle of smoke ?

- (a) Fog (b) Hail
(c) Mist (d) Smog

56. Between the tropical rain forest and the desert lies a vast region known as the

- (a) Prairie (b) Savannah
(c) Tundra (d) Taiga

57. The critical temperature at which an unsaturated air becomes saturated is called

- (a) Absolute humidity
(b) Condensation
(c) Dew point
(d) Frost

58.



The type of climate found in the shaded area in the above rough outline map is

- (a) Tropical hot and dry
- (b) Sub-tropical hot and humid
- (c) Tropical hot and humid
- (d) Sub-tropical hot and dry

59. Consider the following statements :

Assertion (A) :

Natural vegetation is the true index of climate.

Reason (R) :

Different types of plants need different amounts of moisture and heat to grow.

Of these statements :

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

60. Which one of the following pairs of cities is connected by National Highway No. 5 ?

- (a) Calcutta and Mumbai
- (b) Calcutta and Chennai
- (c) Calcutta and Delhi
- (d) Calcutta and Guwahati

61. Consider the following statements :

Assertion (A) :

The problem of unemployment, particularly in rural areas of India, is stupendous.

Reason (R) :

The bulk of India's population lives in rural areas.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

62. Which one of the following States in India has the highest density of population as per the 1991 census ?

- (a) Uttar Pradesh (b) Bihar
- (c) West Bengal (d) Kerala

63. Which one of the following rivers passes through a rift valley ?

- (a) Sutlej (b) Godavari
- (c) Jamuna (d) Narmada

64. Consider the following statements :

Assertion (A) :

The southern slope of the Himalayas is warmer than its northern slope.

Reason (R) :

The southern slope of Himalayas receives direct rays of the sun.

Of these statements

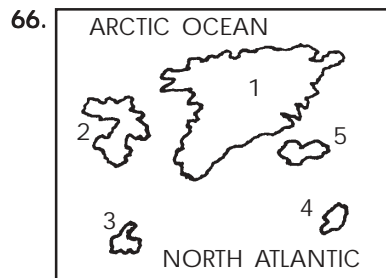
- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

65. Consider the following political parties :

1. Telugu Desam
2. Samata Party
3. Indian National Lok Dal
4. Trinamool Congress
5. DMK

Which of these political parties are supporting the government of Atal Bihari Vajpayee without actually sharing power ?

- (a) 1 and 2 (b) 1 and 3
- (c) 1, 3 and 4 (d) 2 and 5



Five islands have been marked as 1, 2, 3, 4 and 5 in the above map. Match them with the following names :

- A. Newfoundland B. Ireland
C. Iceland D. Baffin Islands

Select the correct answer using the codes given below :

- | | A | B | C | D |
|-----|---|---|---|---|
| (a) | 5 | 4 | 3 | 2 |
| (b) | 4 | 5 | 2 | 1 |
| (c) | 3 | 4 | 5 | 2 |
| (d) | 4 | 3 | 1 | 2 |

67. Who among the following leaders is known for her work in the field of the empowerment of women ?

- (a) Mary Robinson (b) Benazir Bhutto
(c) Sheikh Hasina
(d) Chandrika Kumaratunga

68. The Jnanpith Award for 1999 went to

- (a) Harbhajan Singh
(b) Gurdayal Singh
(c) Mahashweta Devi
(d) Amrita Preetam

69. South Africa was readmitted to the UN General Assembly after a gap of

- (a) 10 years (b) 15 years
(c) 20 years (d) 25 years

70. Begum Akhtar was

- (a) An exponent of Thumri
(b) A Ghazal singer
(c) Associated with Bhajans
(d) A well-known Playback Singer

71. In which one of the following pairs of States the government is not run by a coalition ?

- (a) West Bengal and Orissa
(b) MP and Rajasthan
(c) Karnataka and Maharashtra
(d) Maharashtra and Punjab

72. Kalinga Prize is awarded by

- (a) UNESCO
(b) Government of India
(c) Government of Orissa
(d) SAARC

73. Surveyor 2001 Lander will be having which one of the following pairs of Indian languages besides others ?

- (a) Hindi and Bangla
(b) Telugu and Tamil
(c) Hindi and Tamil
(d) Malayalam and Punjabi

74. The Booker Prize followed by the Pulitzer Prize was bagged by

- (a) Arundhati Roy
(b) Jhumpa Lahiri
(c) Vikram Seth
(d) Sashi Tharoor

75. A recent major local land reform has created social strife and international problem in

- (a) South Africa (b) Ethiopia
(c) Kenya (d) Zimbabwe

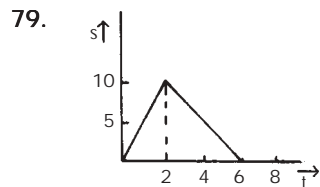
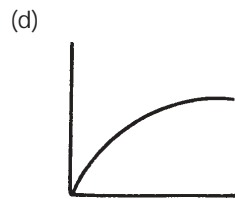
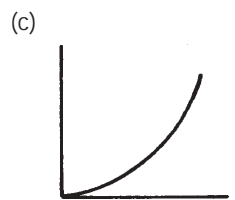
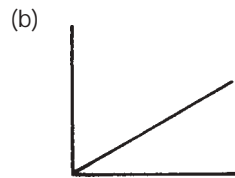
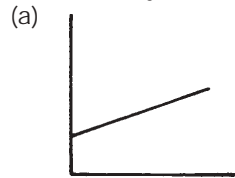
76. A shooting star that flashes across the night sky is really a

- (a) Comet (b) Meteor
(c) Falling planet (d) Falling star

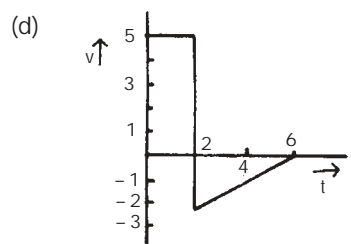
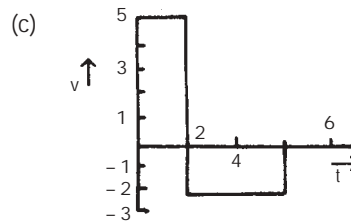
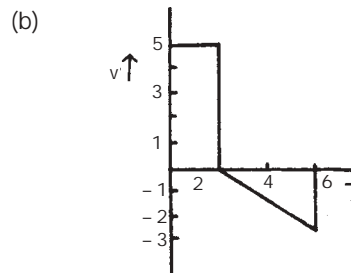
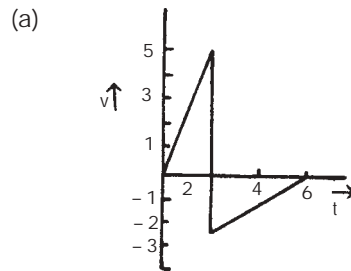
77. When force is applied on a body, its shape and size change. If, after the removal of the external force, the body regains its original shape and size, it is said to be elastic. On this basis one can say that

- (a) Steel is more elastic than rubber
(b) Steel is less elastic than rubber
(c) Both steel and rubber have the same elasticity
(d) Steel is not elastic whereas rubber is elastic

78. A plot of total extension of a metal wire for different loads applied to one end of the wire will be of the form (x-axis : load; y-axis : extension)



The displacement 's' in metres versus time ('t' in seconds) graph for a particle is shown in the above figure. The corresponding velocity (v) - time (t) graph will be as shown in



80. The average force necessary to accelerate a proton of rest mass 1.67×10^{-27} kg from rest to one-tenth the speed of light ($c = 3.0 \times 10^8$ m/s) over a distance of 3.0 cm is

- (a) 2.5×10^{-11} N (b) 2.5×10^{-10} N
(c) 2.5×10^{-9} N (d) 2.5×10^{-8} N

81. A weight suspended from a spring moves up and down. Its acceleration will be the greatest at

- (a) The end points of its travel
- (b) Mid-point
- (c) One-fourth distance from the upper end
- (d) Three-fourths the distance from the upper end

82. The mechanical advantage of a lever will be large if its

- (a) Arms on opposite sides of the fulcrum are equal
- (b) Arms are unequal, one of them is shorter not being material
- (c) Arm on the side of the load is longer than the other arm
- (d) Arm on the side of the load is shorter than the other arm

83.



A hydrometer floats upright with its body in water up to the point marked 'W' as shown in the above figure. If the volume of the stem is one-tenth of the total volume of the hydrometer, then the liquid in which it just sinks will have a specific gravity of

- (a) 0.1 (b) 0.9 (c) 1.1 (d) 9.0

84. The correct sequence in decreasing order of the root mean square velocities, at a given temperature and pressure, of the given set of gases is

- (a) Hydrogen, helium, neon, oxygen
- (b) Helium, neon, oxygen, hydrogen
- (c) Hydrogen, neon, oxygen, helium
- (d) Helium, hydrogen, neon, oxygen

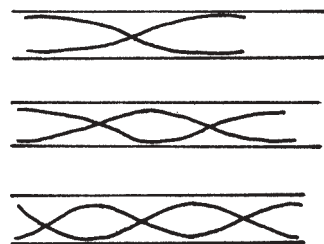
85. Two stars A and B emit maximum radiation at 3500 Angström unit and 4500 Angström unit respectively. The temperatures of the two stars are in the ratio of

- (a) 7 : 9 (b) 9 : 7
- (c) 3 : 1 (d) 1 : 3

86. A tuning fork of unknown frequency makes three beats per second with a standard fork of frequency 384 vib/s. The beat frequency decreases when a small piece of wax is put on a prong of the first fork. The frequency of this fork (in vib/s) will be

- (a) 381 (b) 384 (c) 387 (d) 390

87. In the wind instruments, sound is produced by the vibrations of the air column. In an open-ended organ pipe, the particle amplitudes are represented as follows :



These correspond respectively to

- (a) First, second and third overtones
- (b) Fundamental, first and second overtones
- (c) Second, third and fourth overtones
- (d) Fundamental, second and third overtones

88. A red cross on a white background is illuminated with white light and is observed through a blue filter. It will be seen as a

- (a) Blue cross on a black background
- (b) Red cross on a blue background
- (c) Blue cross on a red background
- (d) Black cross on a dark background

89. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i>		<i>List II</i>	
<i>(Instrument)</i>		<i>(Application/use)</i>	
A. Mariner's compass		1. Detection of direction by sailors	
B. Telescope		2. For sighting distant objects	
C. Periscope		3. To sight objects on the surface by an observer in a trench or submarine	
D. Microscope		4. For seeing small objects or particles	
	A B C D		
(a)	3 2 1 4		
(b)	3 2 4 1		
(c)	1 4 2 3		
(d)	1 2 3 4		

90. A reflecting spherical mirror does not suffer from

- (a) Chromatic aberration
- (b) Spherical aberration
- (c) Coma
- (d) Astigmatism

91. Consider the following statements :

Assertion (A) :

The convex lens in the eye produces an inverted image on the retina of the eye, but we see all objects as erect.

Reason (R) :

The image on the retina is correctly interpreted by the brain.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

92. Consider the following statements :

A given material shows magnetism because of

- 1. The motion of electrons in orbit around the nucleus.
- 2. The rotational motion of electrons about their own axes.
- 3. Vibrations of atoms about their mean positions.
- 4. Occurrence of the material in nature in this form.

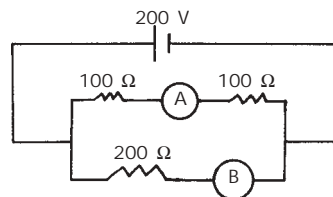
Which of these statements is/are correct ?

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

93. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i>		<i>List II</i>	
<i>(Physical quantity)</i>		<i>(Formula)</i>	
A. Electric potential energy		1. VI	
B. Electrostatic force		2. $\frac{1}{4\pi\epsilon_0} \frac{q_1 q_2}{r}$	
C. Electrostatic energy		3. $\frac{1}{4\pi\epsilon_0} \frac{q_1 q_2}{r^2}$	
D. Electric power		4. $\frac{1}{2} CV^2$	
	A B C D		
(a)	2 1 3 4		
(b)	2 3 4 1		
(c)	1 3 2 4		
(d)	3 2 4 1		

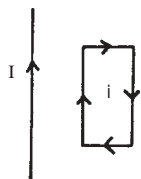
94.



In the circuit shown in the above figure, (A and B are ammeters), the current through A and B will be respectively

- (a) 2A and 1A
- (b) 1A and 2A
- (c) 1A and 1A
- (d) 2A and 2A

95.



A rectangular loop carrying a current of 'i' amperes is situated near a long straight wire such that the wire is parallel to one of the sides of the loop and is in the plane of the loop. If a steady current I is established in the wire as shown in the above figure, the loop will

- (a) Rotate about an axis parallel to the wire
- (b) Move away from the wire
- (c) Move towards the wire
- (d) Remain stationary

96. Consider the following statements :

Power is transmitted from a power house on high voltage A.C. as

1. Power cannot be generated at low voltage.
2. A precaution against theft of transmission lines.
3. It is more economical due to smaller power losses.
4. High voltage gives minor shocks.

Which of these statements is/are correct ?

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

97. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i> (Effect)	<i>List II</i> (Scientist)
A. Chemical effect of electric current	1. Seebeck
B. Conversion of heat into electric current	2. Kirchoff
C. Heating effect of electric current	3. Faraday

D. Magnetic effect of electric current

5. Oersted

	A	B	C	D
(a)	2	3	4	5
(b)	3	1	4	5
(c)	3	2	1	4
(d)	2	1	4	3

98. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i> (Electromagnetic waves)	<i>List II</i> (Wavelength)
A. Gamma rays	1. 5×10^{-10} m
B. Visible light	2. 100 m
C. Radio waves	3. 10^{-3} m
D. Microwaves	4. 10^{-11} m

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

99. Consider the following statements :

Assertion (A) :

Diamond and graphite represent two different forms of crystallised carbon. Graphite is very soft whereas diamond is extremely hard.

Reason (R) :

In the diamond crystal, the atoms are packed very tightly together. In graphite, the atoms are bound together very tightly into thin monoatomic sheets piled quite loosely one on top of another.

Of these statements :

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

100. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i>	<i>List II</i>
(Work for which Nobel Prize was awarded)	(Scientist to whom it was awarded)

- | | |
|---------------------------------------|-------------|
| A. Discovery of X-rays | 1. Chadwick |
| B. Development of Wireless Telegraphy | 2. Anderson |
| C. Discovery of Neutron | 3. Roentgen |
| D. Discovery of Positron | 4. Marconi |

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

101. Which one of the following statements is true of all chemical reactions ?

- (a) There is always a change in volume
- (b) Heat is generally evolved
- (c) All chemical changes are accompanied by change in mass
- (d) Chemical bonds are broken and/or formed

102. Which one of the following is an ore of lead (Pb) ?

- (a) Pyrolusite
- (b) Ilmenite
- (c) Kimberlite
- (d) Galena

103. Which one of the following pairs of elements and their symbols is not correctly matched ?

- (a) Europium Eu
- (b) Gadolinium Gd
- (c) Palladium Pd
- (d) Rhenium Rh

104. Consider the following statements :

Assertion (A) :

Water exists in three forms – solid, liquid and vapour.

Reason (R) :

These three forms are actually allotropic modifications which differ in bonding characteristics.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

105. Water gas is obtained when steam is passed over

- (a) Red hot iron
- (b) Heated iron oxide
- (c) Red hot coke
- (d) Red hot copper

106. Consider the following statements :

Assertion (A) :

Hydrogen exists in two isotopic forms, one being the ortho hydrogen and the other the para hydrogen.

Reason (R) :

Orientations of nuclear spins are different in ortho and para hydrogen.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

107. Consider the following statements :

Assertion (A) :

Gaseous hydrogen does not decolourise acidified KMnO_4 solution whereas a mixture of Zn and dilute H_2SO_4 does.

Reason (R) :

The mixture of zinc and sulphuric acid contains molecular hydrogen.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

108. Which one of the following sets of carbonates would yield CO_2 on heating ?

- (a) Na_2CO_3 , CaCO_3 , MgCO_3
- (b) CaCO_3 , MgCO_3 , PbCO_3
- (c) CaCO_3 , Na_2CO_3 , ZnCO_3
- (d) Na_2CO_3 , PbCO_3 , ZnCO_3

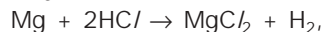
109. Consider the following compounds :

- 1. MnO_2 2. MnCl_2
- 3. K_2MnO_4 4. KMnO_4

The correct sequence of the increasing order of valency of Mn in these compounds is

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

110. In the reaction



the oxidation state of Mg changes from

- (a) Zero to +2 (b) +2 to zero
- (c) Zero to +1 (d) +2 to +1

111. The pH at the equivalence point of a titration involving a weak acid and a strong base is always

- (a) Less than 7 (b) Greater than 7
- (c) 7 (d) Zero

112. Consider the following statements :

Assertion (A) :

Nitrogen compounds are necessary for plant growth.

Reason (R) :

Nitrogen absorbs sun's light energy and converts it into chemical energy to make plant growth possible.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

113. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i>	<i>List II</i>
<i>(Substance)</i>	<i>(Constituent)</i>
A. Soap	1. Stearic acid
B. Paint	2. Linseed oil
C. Cement	3. Calcium silicate
D. Gun powder	4. Potassium nitrate

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

114. If the quantum number l had a value of two, then the number of permitted values of the quantum number m would be

- (a) 2 (b) 4 (c) 5 (d) 7

115. If 100 ml of a gas weighs 0.120 gram at STP, then its molecular weight will be approximately

- (a) 0.27 (b) 2.70
- (c) 27.0 (d) 270.0

116. All the metabolic reactions in the organisms are catalysed by

- (a) Vitamins (b) Hormones
- (c) Enzymes (d) Minerals

117. Consider the following pairs :

- 1. Polyribosomes protein synthesis
- 2. Golgi body formation of secretory vesicle
- 3. Mitochondria respiration
- 4. Endoplasmic formation of reticulum spindle fibres

Which of these pairs is correctly matched ?

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

118. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i>		<i>List II</i>	
A. Pineapple		1. Berry	
B. Banana		2. Capsule	
C. Lady's finger		3. Hesperidium	
D. Orange		4. Sorosis	
	A B C D		
(a)	1 4 3 2		
(b)	1 4 2 3		
(c)	4 1 3 2		
(d)	4 1 2 3		

119. Fluorine deficiency in human beings leads to

- (a) Dental caries (b) Fluorosis
(c) Fibrosis (d) Follicular necrosis

120. If a patient has blood group AB and needs blood transfusion, he

- (a) Should be given blood of AB group only
(b) Should be given blood of 'O' group only
(c) Can be given blood of A or B group
(d) Can be given blood of AB or 'O' or A or B group

121. Night blindness can be corrected by the intake of

- (a) Vitamin B Complex (b) Vitamin A
(c) Vitamin E (d) Vitamin K

122. In an experiment related to phloem transport, twigs of an apple tree were treated as follows :

- All the leaves were removed in the case of twig 'A'.
- A ring of bark and a ring of soft tissues external to the wood were removed in the case of twig 'B'.
- Treatments at 1 and 2 above were given to twig 'C'.
- No treatment was given to twig 'D'.

Which of these twigs would give sweeter apples when compared to the other experimental twigs ?

- (a) Twig C alone
(b) Twigs A and D

(c) Twigs A, B and D

(d) Twigs B, C and D

123. The "survival of the fittest" in the "struggle for existence" proposed by Darwin in his theory of Natural Selection means that

- (a) Physically stronger organisms survive at the expense of weaker ones
(b) Numerically strong species have better chances of survival
(c) Organisms that are better adapted to the environment have more survival value
(d) Predators survive while the prey perish

124. Consider the following statements :

Assertion (A) :

Diphtheria, poliomyelitis and tuberculosis are still major diseases of children in India.

Reason (R) :

DPT vaccine given to prevent these diseases is not effective

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is not a correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

125. Ginger is an example of

- (a) Tuber (b) Rhizome
(c) Bulb (d) Corm

126. Consider the following literary works in Tamil :

- Silappadikaram
- Periya puranam
- Manimekalai
- Sivakachintamani

Among these, the extant epics would include

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

127. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i>		<i>List II</i>	
A. Hiuen-Tsang		1. Chandragupta Vikramaditya	
B. Fahien		2. Harsha	
C. Megasthenese		3. Krishnadevaraya	
D. Nicholas Conti		4. Chandragupta Maurya	
	A	B	C
(a)	2	1	4
(b)	2	1	3
(c)	3	4	2
(d)	4	3	2

128.

Assertion (A) :

Akbar adopted the policy of tolerance in religious life.

Reason (R) :

His aim was to consolidate the Mughal empire with the help of both Hindus and Muslims.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
 (b) Both A and R are true but R is not a correct explanation of A
 (c) A is true but R is false
 (d) A is false but R is true

129. Bardoli Kisan Satyagraha was led by

- (a) Vitthalbhai Patel (b) Vinoba Bhave
 (c) Vallabhbhai Patel
 (d) Mahatma Gandhi

130. Consider the following events :
 1. Cabinet Mission. 2. Cripps Mission.
 3. Wavell Plan.

The correct chronological sequence of these events is

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

131. Consider the following pairs of works and authors :

1. A Nation in B. G. Tilak the Making

2. Thoughts on B. R. Ambedkar Pakistan

3. Young India Jawaharlal Nehru

4. India Wins Abul Kalam Freedom Azad

Which of these pairs is correctly matched ?

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

132. Match List I with List II and select the correct answer using the codes given below the Lists :

<i>List I</i>		<i>List II</i>	
A. Rousseau		1. The Spirit of Laws	
B. Karl Marx		2. The Social Contract	
C. Montesque		3. Das Kapital	
D. Adam Smith		4. The Wealth of Nations	
	A	B	C
(a)	4	1	2
(b)	2	3	1
(c)	3	2	4
(d)	2	3	4

133. The storming of the Bastille is associated with

- (a) French Revolution
 (b) Russian Revolution
 (c) American Revolution
 (d) None of the above

134. Consider the following statements :

Assertion (A) :

Five-Year Plans had been the basis of Indian economic development after independence.

Reason (R) :

India was following the erstwhile Soviet Union pattern of economic planning.

Of these statements :

- (a) Both A and R are true and R is the correct explanation of A
 (b) Both A and R are true but R is not a correct explanation of A
 (c) A is true but R is false
 (d) A is false but R is true

135. Consider the following statements:

Assertion (A) :

In India, democracy can be fully achieved only when the Panchayati Raj system is fully vitalised.

Reason (R) :

The Panchayats are the means of giving power to the people through which they can have their say.

Of these statements :

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

136. As per the Constitution of India, which one of the following is not a Fundamental Right ?

- (a) Right to Freedom of Religion
- (b) Right to Equality
- (c) Right to Freedom of Thought and Expression
- (d) Right to Property

137. Which one of the following Articles of the Constitution of India provides constitutional remedies for enforcement of Fundamental Rights ?

- (a) Article 32 (b) Article 33
- (c) Article 34 (d) Article 35

138. How many members can be nominated to the Lok Sabha by the President ?

- (a) 12 (b) 5
- (c) 2 (d) None

139. Gandhian economy is based on the principle of

- (a) State control (b) Competition
- (c) Trusteeship (d) Surplus value

140. The Champaran Satyagraha, started by Gandhiji, was for the benefit of

- (a) Indentured labour
- (b) Indigo peasantry
- (c) Textile workers
- (d) Farmers in general

141. Consider the following statements:

Assertion (A) :

All the members of the U. N. Security Council have the 'veto' power.

Reason (R) :

The Security Council is the most important organ of the United Nations Organisation.

Of these statements

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

142. Which one of the following is not an essential characteristic of Socialism ?

- (a) Interests of the society are supreme
- (b) Equal opportunity for all
- (c) Just and equal distribution of wealth
- (d) Search for fresh markets

143. The first summit of the Non-Aligned Movement was held in

- (a) Algiers (b) Belgrade
- (c) Jakarta (d) New Delhi

144. The Tashkent agreement was signed in

- (a) 1964 (b) 1965
- (c) 1966 (d) 1967

145. The present methodology of agricultural extension in India is known as

- (a) Training and Visit System
- (b) National Agricultural Extension Scheme
- (c) National Extension Service
- (d) Integrated Rural Development Programme

146. The shape of the earth is best described as

- (a) Spherical (b) Spheroid
- (c) Geoid (d) Oblate spheroid

147. The permanent tilt of the earth's axis and the revolution of the earth in its orbit causes

- (a) Day and night
- (b) Varying lengths of day and night at different times of the year
- (c) The deflection of winds
- (d) Difference in time between places on different meridians

148. The annual range of temperature is the highest in the

- (a) Mediterranean region
- (b) Humid subtropical region
- (c) Dry continental region
- (d) Subarctic region

149. Match List I with List II and select the correct answer using the codes given below the Lists :

List I		List II		
A. Basalt		1. Marble		
B. Clay		2. Gneiss		
C. Limestone		3. Hornblende schist		
D. Granite		4. Phyllites		
	A	B	C	D
(a)	4	3	2	1
(b)	3	4	1	2
(c)	3	2	4	1
(d)	4	3	1	2

150. Lines joining places of the same earthquake intensity are known as

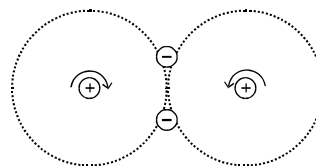
- (a) Isohyets
- (b) Isohels
- (c) Ioseismal lines
- (d) Isohalines

ANSWERS

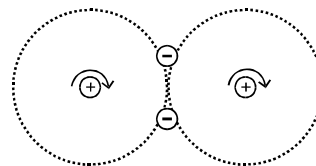
51. (b) : It should be 11.25 pm
 52. (c) 53. (b) 54. (a) 55. (d)
 56. (b) 57. (c) 58. (c) 59. (b)
 60. (b) 61. (a) 62. (c) 63. (d)
 64. (c) 65. (b) 66. (c) 67. (a)
 68. (b) : Along with Nirmal Verma
 69. (b) 70. (b) 71. (b) 72. (a)
 73. (a) 74. (None)

75. (d) 76. (b) 77. (a) 78. (b)
 79. (c) 80. (a) 81. (a) 82. (c)
 83. (a) 84. (a) 85. (b) 86. (c)
 87. (b) 88. (d) 89. (d) 90. (b)
 91. (a) 92. (d) 93. (b) 94. (c)
 95. (c) 96. (c) 97. (b) 98. (c)
 99. (a) 100. (b) 101. (d) 102. (d)
 103. (d) 104. (c) 105. (c)

106. (a) : Orientations of nuclear spins are different in ortho and para hydrogen.



Nuclear spins are in opposite directions (Para hydrogen)



Nuclear spins are in the same direction (Ortho hydrogen)

107. (c) : Gaseous hydrogen does not decolourise acidified KMnO_4 solution because it is in molecular state, whereas mixture of Zn and dilute H_2SO_4 decolourise acidified KMnO_4 because nascent hydrogen is produced which is more active.

'Mixture of zinc and sulphuric acid contains molecular hydrogen' is false.

108. (b) : Only Na_2CO_3 does not give carbon dioxide on heating.

109. (a) : In MnO_2 , the oxidation state of Mn is 4.

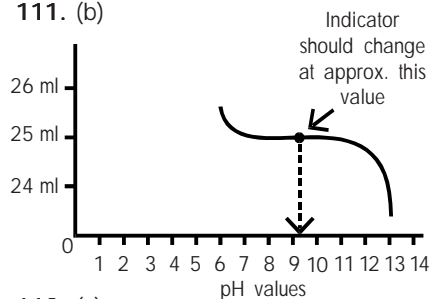
In MnCl_2 , the oxidation state of Mn is 2.

In K_2MnO_4 , the oxidation state of Mn is 6.

In KMnO_4 , the oxidation state of Mn is 7

110. (a)

111. (b)



112. (c)

113. (c)

114. (b) : For $I = 2$, m will have 0, -1, 0 and +1

115. (c) : Given : 100 ml of a gas at STP weighs 0.120g
 \therefore 22400 ml of a gas at STP would weigh

$$\frac{0.120}{100} \times 22400\text{g} = 26.88 \approx 27$$

116. (c) 117. (d) 118. (d) 119. (a)

120. (d) 121. (b) 122. (a) 123. (c)

124. (c) 125. (b) 126. (c) 127. (a)

128. (a) 129. (c) 130. (b) 131. (b)

132. (b) 133. (a) 134. (a) 135. (a)

136. (d) 137. (a) 138. (c) 139. (c)

140. (b) 141. (d) 142. (d) 143. (b)

144. (c) 145. (b) 146. (d) 147. (b)

148. (c) 149. (d) 150. (c) ○