

PART A  
SPOTTING ERRORS

*Directions* (For the 5 items which follow):

- (i) In this section a number of sentences are given. The sentences are underlined in three separate parts and each one is labelled (a), (b) and (c). Read each sentence to find out whether there is an error in any underlined part. No sentence has more than one error. When you find an error in any one of the underlined parts (a), (b) or (c), indicate your response on the separate Answer Sheet at the appropriate space. You may feel that there is no error in a sentence. In that case letter (d) will signify a 'No error' response.
- (ii) You are to indicate only one response for each item in your Answer Sheet. (If you indicate more than one response, your answer will be considered wrong). Errors may be in grammar, word usage or idioms. There may be a word missing or there may be a word which should be removed.
- (iii) You are **not** required to correct the error. You are required **only** to indicate your response on the Answer Sheet.

Examples 'P' and 'Q' have been solved for you.

P. The young child(a) singed(b) a very sweet song.(c) No error.(d)

Q. We worked(a) very hard(b) throughout the season.(c) No error.(d)

*Explanation:*

In item P, the word 'singed' is wrong. The letter under this part is (b); so (b) is the correct answer. Similarly, for item Q, (d) is the correct answer, as the sentence does not contain any error.

1. The music was so loud(a) that we had to bellow over each(b) other to be heard.(c) No error.(d)

2. When this beautiful girl arrived,(a) all the men in the room(b) gravitated over her.(c) No error.(d)

3. The children are(a) really in their element(b) playing on the beach.(c) No error.(d)

4. The refugees are(a) badly off for blankets,(b) and even worse for food.(c) No error.(d)

5. From their vantage-point on the cliff,(a) the children could watch (b) the ships coming and going.(c) No error.(d)

COMPREHENSION

*Directions* (For the 11 items which follow):

In this section you have **three** short passages. After each passage, you will find several questions based on the passage. First, read a passage, and then answer the questions based on it. You are required to select your answers based on the contents of the passage and opinion of the author only.

Examples 'T' and 'J' are solved for you.

PASSAGE (EXAMPLE)

In our approach to life, be it pragmatic or otherwise, a basic fact that confronts us squarely and unmistakably is the desire for peace, security and happiness. Different forms of

life at different levels of existence make up the teeming denizens of this earth of ours. And, no matter whether they belong to the higher groups such as human beings or to the lower groups such as animals, all beings primarily seek peace, comfort and security. Life is as dear to a mute creature as it is to a man. Even the lowliest insect strives for protection against dangers that threaten its life. Just as each one of us wants to live and not to die, so do all other creatures.

I. The author's main point is that:

- (a) different forms of life are found on earth  
(b) different levels of existence are possible in nature  
(c) peace and security are the chief goals of all living beings  
(d) even the weakest creature struggles to preserve its life

J. Which one of the following assumptions or steps is essential in developing the author's position?

- (a) All forms of life have a single overriding goal  
(b) The will to survive of a creature is identified with a desire for peace  
(c) All beings are divided into higher and lower groups  
(d) A parallel is drawn between happiness and life, and pain and death

*Explanation:*

I. The idea which represents the author's main point is "peace and security are the chief goals of all living beings", which is response (c). So (c) is the correct answer.

J. The best assumption underlying the passage is "The will to survive of a creature is identified with a desire for peace", which is response (b). So (b) is the correct answer.

PASSAGE—I

When a bee, or an ant, beetle, moth or butterfly visits a flower for food, it simultaneously, and without knowing it, performs another vital function by carrying pollen from one plant to another. But not all flowers are visited by insects. A reliable guide to those that are, is their flamboyance. If the petals are large and colourful, if they smell sweet, it is because the plant needs to attract insects. Some plants have flowers which are graceful but not showy and therefore of no interest to insects. In this case the pollen is carried by the wind. Most flowers manufacture these minute grains called pollen which must be transferred to another flower of the same type before they can make seeds.

6. Which one of the following is correct?

Insects visit flowers because they:

- (a) want to carry pollen from one flower to another  
(b) are attracted by the bright colours  
(c) wish to obtain food  
(d) are in search of a mate

7. Which one of the following is correct?

Insects carry pollen from one flower to another:

- (a) deliberately  
(b) unconsciously  
(c) reluctantly

(d) with extreme care

8. Which one of the following is correct?

When insects carry pollen from one flower to another:

- (a) they help the flowers to make seeds
- (b) the flowers become colourful and smell sweet
- (c) the insects find it easy to take food from the flowers
- (d) they help the plants to grow beautiful flowers

9. Which one of the following is correct?

The fact that some flowers are flamboyant implies:

- (a) that some plants do not need pollination
- (b) that we can distinguish between flowers pollinated by insects and those that are not
- (c) that flowers are more important to some plants than they are to others
- (d) that bright colours are important to all flowers

10. Which one of the following is correct?

Plants that do not have showy flowers:

- (a) get their pollen transferred to other flowers by wind
- (b) produce more pollen than others
- (c) don't reproduce easily
- (d) are very few in number

#### PASSAGE—II

Not all sounds made by animals serve for communication, and we have only to turn to that extraordinary discovery of echo-location in bats to see a case in which the voice plays a strictly utilitarian role.

To get a full appreciation of what this means we must turn first to some recent human inventions. Everyone knows that if a person shouts in the vicinity of a wall or a mountain-side, an echo will come back. The further off this solid obstruction, the longer time will elapse for the return of the echo. A sound made by tapping on the hull of a ship will be reflected from the sea bottom, and by measuring the time interval between the taps and the receipt of the echoes, the depth of the sea at that point can be calculated. So was born the echo-sounding apparatus, now in general use in ships. Every solid object will reflect a sound, varying according to the size and nature of the object. A shoal of fish will do this. So it is a comparatively simple step from locating the sea bottom to locating a shoal of fish. With experience, and with improved apparatus, it is now possible not only to locate a shoal, but to tell if it is herring, cod, or other well-known fish, by the pattern of its echo.

A few years ago it was found that certain bats emit squeaks and by receiving the echoes they could locate and steer clear of obstacles or locate flying insects on which they feed. This echo-location in bats is often compared with radar, the principle of which is similar.

11. Which one of the following is correct?

Echo-location was first discovered in

- (a) bats
- (b) cods
- (c) navigation
- (d) radars

12. Which one of the following is correct?

An echo will come back if you shout near:

- (a) solid obstruction
- (b) only wall
- (c) only a mountainside
- (d) the sea

13. Which one of the following is correct?

In the first paragraph, the writer says that bats use sound for:

- (a) communicating with one another
- (b) communicating with animals in general
- (c) some practical purpose
- (d) fun

#### PASSAGE—III

Perhaps the best political epigram of recent years is the saying that this is the century of the common man. The coming of this century can be seen far back in the extension of the suffrage and later in the development of social legislation. For many years all men have been equal before the law, every adult man and woman has the vote. We are slowly creating economic democracy, that is, such a measure of economic freedom that poverty prevents no one from taking his part in public affairs or enjoying the facilities, educational and other which the State provides for all. It might seem that when this is achieved our work is done. In fact, it is only the beginning.

14. What does 'economic democracy' stand for?

- (a) Equal distribution of wealth
- (b) Equal economic opportunity for all
- (c) Application of democratic process in economic institutions
- (d) Importance of money in political activities

15. Which one of the following is correct?

Extension of the suffrage indicates:

- (a) spread of suffering
- (b) suffering of the common man
- (c) right of vote for more and more people
- (d) spread of crime in politics

16. What does the term 'epigram' mean?

- (a) A flattering remark
- (b) An unsuitable remark
- (c) A caustic remark
- (d) A short and precise remark

#### ORDERING OF SENTENCES

Directions (For the 8 items which follow):

In the following items, each passage consists of six sentences. The first sentence (S<sub>1</sub>) and the final sentence (S<sub>6</sub>) are given in the beginning. The middle four sentences in each have been removed and jumbled up. These are labelled P, Q, R and S. You are required to find out the proper sequence of the four sentences and mark accordingly on the Answer Sheet.

Example 'X' has been solved for you.

- X. S<sub>1</sub> : There was a boy named Jack.
- S<sub>6</sub> : At last she turned him out of the house.
- P : So the mother asked him to find work.
- Q : They were very poor.
- R : He lived with his mother.
- S : But Jack refused to work.

Which one of the following is the correct sequence?

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

Explanation:

The correct sequence in this example is R—Q—P—S which is marked by (a). Therefore, (a) is the correct answer.

17. S<sub>1</sub> : The common man spends 50 per cent of his income on food.

S<sub>6</sub> : This will also act as a check on organised retail and deter the sector from overcharging consumers.

P : Therefore, food prices would have to top our long-term approach to combating inflation.

Q : Despite rising food prices, farmers starve while middlemen thrive.

R : These prices have risen as a result of rising population and falling productivity.

S : We should encourage direct marketing by farmers to consumers.

Which one of the following is the correct sequence?

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

- 18.** S<sub>1</sub> : To listen rightly means to listen obediently.  
S<sub>e</sub> : Truth is self-evident.  
P : You will not need any decision on your part.  
Q : This word obedience is beautiful.  
R : If you listen totally you will obey.  
S : You will be surprised to know that the original root from which the word obedience comes is obedire—it means a 'thorough listening'.

Which one of the following is the correct sequence?

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

- 19.** S<sub>1</sub> : Global warming is agitating our minds.  
S<sub>e</sub> : A period of extreme climate was the mediaeval warming period much before industrial emission of greenhouse gases.  
P : We must not fall prey to extreme positions.  
Q : Scientists believe that the 20th century is probably not the warmest nor a uniquely extreme climate period.  
R : A large number of scientists disagree with the view that a climate catastrophe is looming.  
S : Instead of having a dispassionate debate, global warming has suddenly taken on an alarmist hue.

Which one of the following is the correct sequence?

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

- 20.** S<sub>1</sub> : Historically, China has adopted an inward-looking strategy to its economic development.  
S<sub>e</sub> : Any shortage in the domestic economy could be compensated for by imports.  
P : These can hold back the growth of an economy.  
Q : Successive Chinese Governments thought that the economy could grow purely through self-reliance.  
R : By contrast, countries like the USA were achieving significant economic growth because they were practising foreign trade policies which facilitated free trade.  
S : However, there are limitations to what a country can do by itself.

Which one of the following is the correct sequence?

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

- 21.** S<sub>1</sub> : Henry Ford grinned at his wife Clara while wiping his grease-stained hands on a piece of cloth.  
S<sub>e</sub> : The noise was deafening, but it was sweet music to Henry and Clara.  
P : Ford whipped the engine out of its slumber by triggering the mechanism.  
Q : But, soon it spluttered and as the fuel nudged, it roared loudly.  
R : Clara smiled while holding the cup with the gasoline, steady at an angle, so that the fuel

could flow at a regular pace.

S : The engine seemed reluctant to start.

Which one of the following is the correct sequence?

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

- 22.** S<sub>1</sub> : Organisations are made of people.  
S<sub>e</sub> : This ability of organisations takes the shape of strategic and competitive advantage, when you begin to consider that we compete in a world full of knowledge.  
P : In other words, organisations can do and learn, since their people can and do learn.  
Q : The learning may be good or bad, but it happens all the same.  
R : Where people are involved, some learning always takes place.  
S : Without people, there can be no organisation.

Which one of the following is the correct sequence?

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

- 23.** S<sub>1</sub> : What is grid computing?  
S<sub>e</sub> : The problem is that grid has been used as a buzzword and applied to a number of entirely different things.  
P : According to many in the computer industry, grid computing which roughly means the harnessing of the collective processing power of many computers in different places is already widespread.  
Q : Yet according to others, grid computing, while promising, is still years away from becoming a reality.  
R : It depends upon whom you ask.  
S : Who is right?

Which one of the following is the correct sequence?

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

- 24.** S<sub>1</sub> : What makes a productive leader?  
S<sub>e</sub> : Skill in handling these complexities is important in achieving high productivity.  
P : He must be adept at dealing with problem and new concepts.  
Q : In my opinion, a productive leader must be very competent in staffing.  
R : The problems encountered by a Research and Development organisation typically involve trade-offs among a wide variety of complex entities.  
S : He should continually introduce new blood into the organisation.

Which one of the following is the correct sequence?

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

#### SYNONYMS

Directions (For the 9 items which follow):

Each of the following *nine* items consists of a word in capital letters, followed by four words or groups of words.

Select the word or group of words that is most *similar* in meaning to the word in capital letters.

- 25. PROTAGONIST**  
(a) Talented child  
(b) Reserved person  
(c) Leading character  
(d) Fearless
- 26. PASSE**  
(a) Lukewarm  
(b) Old-fashioned  
(c) Energy  
(d) Fraud
- 27. VITUPERATION**  
(a) Questionable  
(b) Resistance  
(c) Absurdity  
(d) Bitter criticism
- 28. VAUNT**  
(a) Boast  
(b) Desire  
(c) Ineptitude  
(d) Joke
- 29. NIMBLE**  
(a) Clamorous  
(b) Scrap  
(c) Nippy  
(d) Urbane
- 30. MOROSE**  
(a) Humble  
(b) Morsel  
(c) Sullen  
(d) Repugnant
- 31. BAMBOOZLE**  
(a) Musical  
(b) Mystify  
(c) Thrash  
(d) Relinquish
- 32. CANARD**  
(a) Story  
(b) Humid  
(c) Prison  
(d) Rumour
- 33. INNUENDO**  
(a) Enquiry  
(b) Indirect reference  
(c) Innovation  
(d) Inorganic

#### ANTONYMS

*Directions* (For the 9 items which follow):

Each of the following *nine* items consists of a word in capital letters, followed by four words or groups of words. Select the word or group of words that is *furthest* in meaning to the word in capital letters.

- 34. IMBROGLIO**  
(a) Pleasant situation  
(b) Critical  
(c) Ambiguity  
(d) Amnesty
- 35. EVANESCENT**  
(a) Scanty  
(b) Lasting  
(c) Anguish  
(d) Scattered
- 36. IMPERTINENT**  
(a) Polite

- (b) Perturbing  
(c) Curious  
(d) Steady
- 37. ABHORRENT**  
(a) Terse  
(b) Attractive  
(c) Mature  
(d) Usual
- 38. ABSTRUSE**  
(a) Crazy  
(b) Calm  
(c) Obvious  
(d) Boundless
- 39. PROFANE**  
(a) Sacred  
(b) Artless  
(c) Rigid  
(d) Aspersion
- 40. GARRULOUS**  
(a) Tiresome  
(b) Harsh  
(c) Light  
(d) Quiet
- 41. CANTANKEROUS**  
(a) Convivial  
(b) Pliable  
(c) Pessimistic  
(d) Bold
- 42. SAGACIOUS**  
(a) Timid  
(b) Lacking sense of enterprise  
(c) Financially poor  
(d) Showing poor judgement

#### ORDERING OF WORDS IN A SENTENCE

*Directions* (For the 8 items which follow):

In the following items, some parts of the sentence have been jumbled up. You are required to rearrange these parts which are labelled (P), (Q), (R) and (S) to produce the correct sentence. Choose the proper sequence and mark in your Answer Sheet accordingly.

Example 'Z' has been solved for you.

Z. It is well-known that the effect(P) is very bad(Q) on children(R) of cinema(S)

*Which one of the following is the correct sequence?*

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

*Explanation:*

The proper way of writing the sentence is "It is well-known that the effect of cinema on children is very bad." This is indicated by the sequence P—S—R—Q and so (a) is the correct answer.

**43.** Developing countries along the equator, which(P) could become leaders in energy production(Q) are expected to face the brunt of global warming(R) with a solar energy breakthrough(S)

*Which one of the following is the correct sequence?*

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

**44.** It's someone who's grieving but(P) natural to feel uncomfortable(Q) don't let that prevent you from being there(R) or awkward when you have to help(S)

Which one of the following is the correct sequence?

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

**45.** Thus, international surveys would henceforth record(P) if dirt-poor people in the developing world(O) their wealth of happiness alongside their material poverty(R) display a general sense of well-being(S)

Which one of the following is the correct sequence?

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

**46.** The way processes that govern their actions(P) nutrients become integral parts(O) depends on the physiological and biochemical(R) of the body and contribute to its functions(S)

Which one of the following is the correct sequence?

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

**47.** With all the crime and sleaze I am not sure how many parents will be able to(P) how many will have the courage to satisfy the child's uncomfortable queries(O) that dominates the front page of the newspapers today(R) read out the headlines to their children, and if they do so(S)

Which one of the following is the correct sequence?

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

**48.** I bow my head for their sense of the beautiful in(P) nature and for their foresight in investing beautiful(O) manifestations of nature with a religious significance(R) in reverence to our ancestors(S)

Which one of the following is the correct sequence?

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

**49.** Markets, cities, civilisation—on the verge of globalisation: poised to(P) the slow ascent to where he is today, poised(O) it is in this order that primitive man made(R) achieve universal prosperity and abundance(S)

Which one of the following is the correct sequence?

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

**50.** Russia's test firing to US steps that have sparked an arms race(P) of an intercontinental ballistic missile on(O) and undermined world security(R) Tuesday was in response(S)

Which one of the following is the correct sequence?

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

## PART B

**51.** A cord is used to lower vertically a block of mass M through a distance d at a constant downward acceleration  $g/4$ . Consider the following statements:

1. The block is freely falling under gravity.
2. The cord is doing work on the block.

3. The amount of work done is  $(3 Mgd)/4$

Which of the statements given above are correct

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

**52.** A cylinder of mass m and radius R floats vertically in a liquid of density d. What is the height of the submerged region?

- (a)  $\frac{m}{\pi R^2 d}$
- (b)  $\sqrt{\frac{m}{\pi R^2 d}}$
- (c)  $\frac{m}{R^2 d}$
- (d)  $\frac{R}{2}$

**53.** A block of ice is floating in a beaker containing liquid of specific gravity greater than one. When ice melts completely, what happens to the level of liquid in the beaker?

- (a) It will remain the same as before
- (b) It will go down
- (c) It will rise up
- (d) It may or may not change depending upon size of beaker

**54.** Electromagnetic radiations are emitted by which of the following?

- (a) Only by radio and television transmitting antennas
- (b) Only by bodies at temperature higher than their surroundings
- (c) Only by red-hot bodies
- (d) By all bodies

**55.** In our houses we get 220 V a.c. What does the value 220 V represent?

- (a) Constant voltage
- (b) Effective voltage
- (c) Average voltage
- (d) Peak voltage

**56.** Consider the following statements:

Sound waves can undergo:

1. reflection
2. refraction
3. interference

Which of the statements given above are correct?

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

**57.** Which one of the following is correct?

One unit of electric power is consumed when:

- (a) 1 A of current flows for 1 sec at 220 V
- (b) 1 A of current flows for 1 sec at 1 V
- (c) 100 A of current flows for 1 sec at 10 V
- (d) 10 A of current flows for 1 hour at 100 V

**58.** A solid cube of iron (specific gravity = 8) is melted into sheets. The side of the cube is 1 m. The sheets are used to make a hollow cube. This cube floats such that its whole volume is inside water. What should be the minimum length of side of such a cube?

- (a) 2.0 m
- (b) 2.5 m
- (c) 2.75 m
- (d) 3.0 m

**59.** The dimensions of a rectangular block of carbon are  $2 \text{ cm} \times 2 \text{ cm} \times 10 \text{ cm}$ . If the resistivity of the carbon is  $2 \times 10^{-5} \Omega \text{ m}$ , what is the resistance measured between the two square surfaces?

- (a)  $5 \times 10^{-3} \Omega$
- (b)  $2 \times 10^{-8} \Omega$
- (c)  $5 \times 10^{-2} \Omega$
- (d)  $2 \times 10^{-2} \Omega$

**60.** Consider the following statements:  
If the same note is played on a flute and a sitar, one can still distinguish between them because they differ in:

1. frequency
2. intensity
3. quality

Which of the statements given above is/are correct?

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

**61.** Which one of the following is correct?

A negatively charged glass rod has always:

- (a) less electrons than protons  
(b) less electrons than neutrons  
(c) less protons than electrons  
(d) less neutrons than protons

**62.** A bullet travelling horizontally hits a block kept at rest on a horizontal surface and gets embedded into it, the two together then move with a uniform velocity. Which one of the following conservation laws holds?

- (a) Conservation of angular momentum  
(b) Conservation of kinetic energy  
(c) Conservation of linear momentum  
(d) Conservation of velocity

**63.** In which country did the first Marxist revolution take place?

- (a) Germany                          (b) Italy  
(c) Great Britain                      (d) Russia

**64.** As per the Constitution of India, what is the limit prescribed for the number of members in the Legislative Assembly of a State?

- (a) 350 members                      (b) 400 members  
(c) 450 members                      (d) 500 members

**65.** Due to the leadership and success in which one of the following did Vallabhbhai Patel get the title of 'Sardar'?

- (a) Kheda Satyagraha  
(b) Non-Cooperation Movement  
(c) Bardoli Satyagraha  
(d) Civil Disobedience Movement

**66.** 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>(Specialised Agency of UN)</i>	<i>(Headquarters)</i>
A. International Bank for Reconstruction and Development	1. Montreal
B. International Civil Aviation Organisation	2. London
C. International Maritime Organisation	3. Rome
D. International Labour Organisation	4. Washington DC

*Codes:*

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

**67.** Who among the following appoints the Judges of a High Court?

- (a) The President of India  
(b) The Chief Justice of India  
(c) The Governor of the State concerned  
(d) The Union Minister of Law

**68.** Who of the following started Swaraj Party?

- (a) Bipin Chandra Pal and Rajendra Prasad

(b) Bipin Chandra Pal and Subhash Chandra Bose

(c) C.R. Das and Motilal Nehru

(d) C.R. Das and Madan Mohan Malaviya

**69.** Who of the following was associated with the August Offer?

- (a) Lord Wavell  
(b) Lord Irwin  
(c) Lord Linlithgow  
(d) Lord Mountbatten

**70.** Which one among the following was fought earliest?

- (a) Battle of Ambur  
(b) Battle of Buxar  
(c) Battle of Plassey  
(d) Battle of Wandiwash

**71.** During Aurangzeb's reign, whose duty was it to see that people lived their lives in accordance with the 'Sharia'?

- (a) Ahadis                              (b) Mansabdars  
(c) Muhtasibs                          (d) Walashuhis

**72.** Gautam Buddha delivered his first sermon at which one of the following places?

- (a) Kushinagar  
(b) Sarnath  
(c) Bodhi Gaya  
(d) Lumbini

**73.** Historical materialism is a tenet of which one of the following political theories?

- (a) Capitalism  
(b) Liberalism  
(c) Fascism  
(d) Marxism

**74.** What is 'Look East Policy' often in the news?

- (a) Government of India's initiative for the infrastructural development in the North-Eastern States  
(b) India's search for oil and gas in its Eastern shoreline  
(c) India's collaboration with some East Asian countries in the exploration of oil and gas  
(d) India's continuing pursuit of close relations with South-East Asian countries

*Directions:*

The next **three (3)** items consist of two statements, one labelled as the 'Assertion (A)' and the other as 'Reason (R)'. You are to examine these two statements carefully and select the answers to these items using the codes given below.

*Codes:*

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

*Assertion (A):*

**75.** A person stands at a distance of 1 m in front of a concave mirror. If the radius of curvature of the mirror is 4 m, the image of the person lies at a distance 2 m behind the mirror.

*Reason (R):*

The general mirror equation confirms the location of the image from the mirror and it could be a real image.

*Assertion (A):*

**76.** The tidal effect of Moon on the surface of Earth is less than that of Sun.

*Reason (R):*

Moon's gravitational pull at Earth's surface is less compared to Sun's gravitational pull.

*Assertion (A):*

**77.** A test tube is filled up with 1/4 of its volume with

water and immersed in a glass of water. The upper portion of the test tube looks bright.

Reason (R):

This is due to dispersion of light.

**78.** Which raw material is used in the preparation of soft glass?

- (a)  $K_2CO_3$ ,  $SiO_2$ ,  $CaCO_3$
- (b)  $K_2CO_3$ ,  $SiO_2$ ,  $PbCO_3$
- (c)  $Na_2CO_3$ ,  $SiO_2$ ,  $CaCO_3$
- (d)  $Na_2CO_3$ ,  $SiO_2$ ,  $PbO$

**79.** Which one of the following is *not* present in cement?

- (a) Clay
- (b) Alumina
- (c) Alum
- (d) Gypsum

**80.** Which one of the following is correct?

Due to continuous use of calcium superphosphate as fertilizer in soil, the pH of soil becomes

- (a) more than 7
- (b) less than 7
- (c) equal to 7
- (d) Cannot be predicted

**81.** Consider the following statements:

1. Among the fertilizers used, urea contains maximum % of N.
2. The mixture of calcium sulphate and calcium dihydrogen phosphate is known as superphosphate of lime
3. Potassium magnesium sulphate is called the muriate of potash.

Which of the statements given above are correct?

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

**82.** Which one of the following salts when dissolved in water makes the solution basic?

- (a) Sodium chloride
- (b) Copper sulphate
- (c) Ferric chloride
- (d) Sodium acetate

**83.** Yellow colour of usual nitric acid is due to the presence of which one of the following?

- (a)  $N_2O$
- (b)  $NO$
- (c)  $N_2O_5$
- (d)  $NO_2$

**84.** What is the correct order of oxidation states of sulphur in anions  $SO_3^{2-}$ ,  $S_2O_4^{2-}$  and  $S_2O_6^{2-}$ ?

- (a)  $S_2O_4^{2-} < SO_3^{2-} < S_2O_6^{2-}$
- (b)  $S_2O_6^{2-} < S_2O_4^{2-} < SO_3^{2-}$
- (c)  $SO_3^{2-} < S_2O_4^{2-} < S_2O_6^{2-}$
- (d)  $S_2O_4^{2-} < S_2O_6^{2-} < SO_3^{2-}$

**85.** What is the correct increasing order of electronegativity for the most common oxidation states among the following elements?

- (a)  $F < O < N < C$
- (b)  $O < N < C < F$
- (c)  $C < N < F < O$
- (d)  $C < N < O < F$

**86.** Why is nitrogen molecule chemically less active?

- (a) It has small atomic radius
- (b) It has high electronegativity
- (c) It has high dissociation energy
- (d) It has stable electronic configuration

**87.** Which one of the following pairs is *not* correctly matched?

- (a) Major components of air : Nitrogen and oxygen gases
- (b) Components of air responsible for photosynthesis : Carbon dioxide and water vapours
- (c) Components of air responsible for air pollution : Rare gases
- (d) Component of air essential for growth and development of plants : Nitrogen gas

**88.** Analysis shows that a binary compound of X (atomic mass = 10) and Y (atomic mass = 20) contains 50% X. What is the formula of the compound?

- (a)  $XY$
- (b)  $X_2Y$
- (c)  $XY_2$
- (d)  $X_2Y_3$

**89.** Which is the rarest naturally occurring element on earth?

- (a) Gold
- (b) Antimony
- (c) Germanium
- (d) Astatine

**90.** Which one of the following pairs of elements is most essential for building cells in the human body?

- (a) Nitrogen and aluminium
- (b) Carbon and calcium
- (c) Nitrogen and carbon
- (d) Calcium and phosphorus

**91.** Which one of the following is *not* an allotrope of carbon?

- (a) Soot
- (b) Graphite
- (c) Diamond
- (d) Carborundum

**92.** Which one of the following elements is a metalloid?

- (a) P
- (b) Al
- (c) As
- (d) Po

**93.** Which one of the following is correct?

Lightning is formed, when:

- (a) similar charges of electricity rush towards each other and then get repelled
- (b) clouds strike against impurities in air and the friction burns up these impurities
- (c) strong opposite charges in different clouds break down the resistance offered by intervening air
- (d) water vapour produces electricity in the clouds

**94.** In which one of the following regions does the Indus river originate?

- (a) Ladakh
- (b) Lahaul
- (c) Nepal
- (d) Tibet

**95.** Among the following, which one has recorded the highest population growth rate during 1991-2001?

- (a) Arunachal Pradesh
- (b) Manipur
- (c) Nagaland
- (d) Sikkim

**96.** India is comparatively *not* rich in which one of the following minerals compared to the other three?

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

**97.** The Victoria Falls in Africa is located on which river?

- (a) Zaire
- (b) Orange
- (c) Zambezi
- (d) Niger

**98.** Mt Merapi is located on which one of the islands?

- (a) Java
- (b) Sumatra

(c) Borneo (d) Celebes  
**99.** When it is 12 Noon at Allahabad, the time at Wellington (New Zealand) would be close to which one of the following?

- (a) 4:30 PM of the same day  
(b) 4:30 PM of the previous day  
(c) 6:30 PM of the same day  
(d) 6:30 PM of the previous day

**100.** Consider the following statements:

1. In tropical grassland regions, rainfall mainly occurs in the short summer season with a long dry season.
2. In Mediterranean region, the winter rainfall is caused by the passage of cyclones in the westerly wind belt which lies over this area.

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

**101.** Consider the following statements:

1. Alamatti dam is on the Cauvery river.
2. Mettur dam is on the Krishna river.
3. Gandhi Sagar Reservoir is on the Chambal river.

Which of the statements given above is/are correct?

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

**102.** Which National Highway connects Delhi and Mumbai?

- (a) NH 6 (b) NH 8  
(c) NH 10 (d) NH 12

**103.** Which one among the following peaks is the highest?

- (a) Dhaulagiri  
(b) Namcha Barwa  
(c) Nanda Devi  
(d) Nanga Parvat

**104.** From West to East, which one of the following is the correct sequence of Hills?

- (a) Mahadeo Hills—Maikala Hills—Garhjat Hills  
(b) Mahadeo Hills—Garhjat Hills—Maikala Hills  
(c) Maikala Hills—Mahadeo Hills—Garhjat Hills  
(d) Maikala Hills—Garhjat Hills—Mahadeo Hills

**105.** Haridwar is well-known for which one of the following industries?

- (a) Fertilizers  
(b) Cement  
(c) Heavy Electricals  
(d) Silk Textiles

**106.** The Tropic of Cancer passes through which one of the following?

- (a) Assam  
(b) Manipur  
(c) Mizoram  
(d) Nagaland

**107.** Injurious ultraviolet radiations are mostly prevented from reaching the land surface as these are absorbed mostly by which one of the following?

- (a) Stratosphere  
(b) Troposphere  
(c) Ionosphere  
(d) Mesosphere

**108.** In which of the following Hills is tea cultivated?

- (a) Maikala Hills  
(b) Nallamalai Hills  
(c) Nilgiri Hills  
(d) Shivalik Hills

**109.** In which one of the following areas is monsoon climate found?

- (a) Pacific Coast of Columbia  
(b) South-Eastern United States  
(c) Southern Part of South Africa  
(d) Central California

**110.** Among the following sedimentary rocks, which one is of organic origin?

- (a) Gypsum (b) Limestone  
(c) Nitre (d) Rock salt

**111.** Who of the following published a famous pamphlet known as 'Right of Mass' and urged the people in England, America and France to fight for their liberty?

- (a) Thomas Jefferson  
(b) Thomas Paine  
(c) John Locke  
(d) Jean Jacques Rousseau

**112.** Who of the following invented the cotton gin that separates the seeds from cotton three hundred times faster than by hand?

- (a) Eli Whitney  
(b) George Stephenson  
(c) McAdam  
(d) James Watt

**113.** Whose duty is it to recommend to the President of India on the issue of the distribution and allocation of the net proceeds of taxes in the context of Centre-State fiscal relations?

- (a) Planning Commission  
(b) National Development Council  
(c) Union Ministry of Finance  
(d) Finance Commission

**114.** In the Union Government, under whose charge is the Cabinet Secretariat?

- (a) The Minister of Parliamentary Affairs  
(b) The President of India  
(c) The Prime Minister of India  
(d) The Union Home Minister

**115.** Which Five-Year Plan had an objective of "Rapid Industrialisation with particular emphasis on development of basic and heavy industries"?

- (a) First (b) Second  
(c) Third (d) Fourth

**116.** Which one of the following is the correct chronological order of the given rulers of ancient India?

- (a) Ashoka—Kanishka—Milinda  
(b) Milinda—Ashoka—Kanishka  
(c) Ashoka—Milinda—Kanishka  
(d) Milinda—Kanishka—Ashoka

**117.** Which one of the following is *not* a disease caused by virus?

- (a) Bird-flu  
(b) Chickenpox  
(c) Cholera  
(d) Dengue

**118.** In terms of the evolution of organisms, which one among the following is the most advanced?

- (a) Bat  
(b) Pigeon  
(c) Shark  
(d) Vulture

**119.** Which one of the following is *not* a genetic disorder?

- (a) Colour blindness  
(b) Down's syndrome  
(c) Haemophilia  
(d) Xerophthalmia

**120.** Which one of the following is an enzyme?

- (a) Gastrin



- (b) Keratin  
(c) Trypsin  
(d) Vasopressin
- 121.** When light waves travel from air to glass, which variables are affected?  
(a) Wavelength, frequency and velocity  
(b) Velocity and frequency only  
(c) Wavelength and frequency only  
(d) Wavelength and velocity only
- 122.** Which one of the following is correct?  
Electrical lines of forces  
(a) exist everywhere  
(b) exist in the immediate vicinity of positive charge  
(c) exist in the immediate vicinity of negative charge  
(d) are imaginary
- 123.** Two similar poles repel each other with a force of 0.005 N when placed 16 cm apart. If they are placed 8 cm apart, what will be the repulsing force?  
(a) 0.001 N (b) 0.002 N  
(c) 0.01 N (d) 0.02 N
- 124.** Which one of the following properties distinguishes ultrasound from normal audible sound?  
(a) Intensity (b) Speed of propagation  
(c) Frequency (d) Quality
- 125.** Which one of the following is correct?  
Large aperture telescopes are used for:  
(a) greater resolution  
(b) greater magnification  
(c) reducing lens aberration  
(d) ease of manufacture
- 126.** Which one of the following is correct?  
The wavelength of the X-rays:  
(a) is longer than the wavelength of sound waves  
(b) is longer than the wavelength of the yellow sodium light  
(c) is longer than the wavelength of radio waves  
(d) is of the order of 0.1 nanometer
- 127.** Two equal amounts of water are mixed by gently pouring both into an insulated cup. One part is initially at 90°C, and the other part is initially at  $T_1$ °C. If the final temperature of the mixture is 131°F, what is the value of  $T_1$ ?  
(a) 90 (b) 68  
(c) 20 (d) 0
- 128.** The time period of a simple pendulum oscillating in a laboratory at north pole is 4s. Accounting for earth's rotation only, what will be the time period of this pendulum oscillating in a laboratory at equator?  
(a) Less than 4 s (b) More than 4 s  
(c) Equal to 4 s (d) Infinity
- 129.** A bus moving at a speed of 24 m/s begins to slow at a rate of 3 m/s each second. How far does it go before stopping?  
(a) 96 m (b) 72 m  
(c) 60 m (d) 48 m
- 130.** How is Asafa Powell well-known as?  
(a) Swimmer  
(b) Football Player  
(c) Boxer  
(d) 100 m Sprinter
- 131.** Where were the Olympic Games, 2004 held?  
(a) Madrid  
(b) Buenos Aires  
(c) Athens  
(d) Rome
- 132.** In which one of the following One-Day Cricket World Cups, did India lose in the Finals?  
(a) World Cup, 1992  
(b) World Cup, 1996  
(c) World Cup, 1999  
(d) World Cup, 2003
- 133.** Who won the French Open Tennis Tournament, 2007 (Men's Singles)?  
(a) Carlos Moya  
(b) Andy Roddick  
(c) Rafael Nadal  
(d) Roger Federer
- 134.** Which one of the following is mixed with petrol by the Government of India in its nationwide programme of blended petrol?  
(a) Butanol  
(b) Ethanol  
(c) Methanol  
(d) Propanol
- 135.** The famous artist Uma Sharma is an exponent of which one of the following forms of dance?  
(a) Bharatnatyam  
(b) Kathak  
(c) Kuchipudi  
(d) Manipuri
- 136.** The 1770 km long Baku Tbilisi-Ceyhan (BTC) oil pipeline connects which of the following seas?  
(a) Aral Sea and Mediterranean Sea  
(b) Caspian Sea and Mediterranean Sea  
(c) Black Sea and Baltic Sea  
(d) Caspian Sea and Arabian Sea
- 137.** How is Leila Seth known as?  
(a) First Woman Chairperson of the Union Public Service Commission  
(b) First Woman Election Commissioner of India  
(c) First Woman Chief Justice of a High Court in India  
(d) First Woman Governor of a State in India
- 138.** The Governments of which one of the following pairs of countries are planning to build a rail tunnel link between Europe and Africa?  
(a) Algeria and France  
(b) Egypt and Greece  
(c) Morocco and Spain  
(d) Libya and Italy
- 139.** The President of which one of the following countries has been awarded the Jawaharlal Nehru Award for International Understanding, 2006?  
(a) Argentina  
(b) Brazil  
(c) Mexico  
(d) Venezuela
- 140.** What is the number of Judges (including Chief Justice) in the Supreme Court of India as provided in the Constitution of India?  
(a) 20 (b) 24  
(c) 26 (d) 28
- 141.** Who among the following chooses the Speaker of the House of People?  
(a) The Prime Minister of India  
(b) The Union Minister of Parliamentary Affairs  
(c) The Leader of the Opposition in the Lok Sabha  
(d) The House of People
- 142.** What is the term used to denote the temperature at which the water vapour present in the atmosphere is sufficient to saturate?  
(a) Condensation point  
(b) Dew point  
(c) Sublimation point

(d) Saturation point

**143.** The earth's reflectivity of solar radiation, termed albedo, is highest in which one of the following?

- (a) Cropland
- (b) Forest area
- (c) Sand desert
- (d) Snow area

**144.**



In the given map, three areas are marked with numbers. Which of them represent(s) sugarcane growing area(s)?

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

**145.** Who for the first time saw bacteria through a microscope made by himself?

- (a) Anton van Leeuwenhoek
- (b) Louis Pasteur
- (c) Robert Hooke
- (d) Robert Virchow

**146.** Which of the following contain enzymes for cellular respiration?

- (a) Dictyosomes
- (b) Endoplasmic reticula
- (c) Lysosomes
- (d) Mitochondria

**147.** To which of the following types of animals are Salamanders closely related?

- (a) Dolphins and Whales
- (b) Frogs and Toads
- (c) Prawns and Crabs
- (d) Seals and Walruses

**148.** Which one of the following statements is correct?

A seed is a ripened:

- (a) ovary
- (b) flower
- (c) gynoecium
- (d) ovule

**149.** In the human body, which of the following store/stores extra blood for release when shortages occur?

- (a) Liver
- (b) Pancreas
- (c) Spleen
- (d) Lymph nodes

**150.** In human body, which one of the following secretes hormones as well as digestive enzymes?

- (a) Oesophagus
- (b) Pancreas
- (c) Spleen
- (d) Large intestine

## ANSWERS AND EXPLANATIONS

1. (d) bellow → a deep shout or loud sound.
2. (c) gravitated used in the wrong context.
3. (c) (while playing)
4. (c)
5. (d) vintage → old, important point.
6. (c) visits a flower for food...see 1st sentence.
7. (b) without knowing it...
8. (a) last line : they can make seed....
9. (b) a reliable guide to those....
10. (a) pollen is carried by the wind....
11. (a) echo – location in bats : line 2
12. (a) solid obstruction : line 3
13. (c) utilitarian role...
14. (b) such a measure of economic freedom ... enjoying the facilities....
15. (c)      16. (d)      17. (b)      18. (a)      19. (d)
20. (a)      21. (b)      22. (d)      23. (a)      24. (c)
25. (c)      26. (b)      27. (d)      28. (a)      29. (c)
30. (c)      31. (b)      32. (a)      33. (b)      34. (a)
35. (b)      36. (a)      37. (b)      38. (c)      39. (a)
40. (d)      41. (b)      42. (d)      43. (b)      44. (c)
45. (b)      46. (c)      47. (a)      48. (b)      49. (a)
50. (d)
51. (b) 1 = wrong, as in free fall,  $a = g$   
2 = right, as net  $a < g$  ( $= g/4$ )  
3 = right,  $WD = \text{upward Force} \times \text{displacement}$   
 $= (M \cdot \frac{3}{4}g)d = \frac{3}{4} mgd$
52. (a) From condition of floatation, weight of cylinder = upthrust due to submerged part.  
Thus,  $w = U$  ( $m' = V'd$ )  
 $\rightarrow mg = m'g = V'dg = \pi R^2 h dg$   
 $\rightarrow \frac{m}{\pi R^2 d} = h$
53. (c)  $\rho$  (density) =  $\frac{m}{V} \rightarrow V = \frac{m}{\rho} \rightarrow V' > V$
54. (d)
55. (b)  $V_{ms}$
56. (d)
57. (d) 1 Unit = 1kw hr = 1000 w hr = 100 × 10 × 1 hr (Use VI)
58. (a) As in Qs. 52,  $m_1 g = m_2 g \rightarrow m_1 = m_2 \rightarrow V_1 d_1 = V_2 d_2$   
i.e.  $1 \times 1 \times 1 \times 8 = V_2 \times 1, V_2 = 8$ , side =  $8^{\frac{1}{3}} = 2m$
59. (a)  $R = \rho l / A \rightarrow R = \frac{2 \times 10^{-5} \times 0.1}{0.02 \times 0.02} = \frac{10^{-6} \times 10^4}{2}$   
 $= 5 \times 10^{-3}$ .
60. (c) quality or timbre. (I and f can be the same).
61. (c) For neutral body, no. of p = no. of e  
For negative,  $e > p$  (or  $p < e$ ).
62. (c)
63. (d) 1917. October Revolution, Vladimir Lenin, Russia.
64. (d) 60-500 members.
65. (c) 1928 Gujarat
66. (d)

67. (a) After consultation with the Chief Justice of India/High Court and the Governor of the State.
68. (c) 1922
69. (c) When Winston Churchill became PM and England's condition in World War-II was critical, Viceroy of India = Marquess of Linlithgow (1940, +).
70. (a)
71. (c) censor on public morals
72. (b) near Varanasi
73. (d) Karl Marx—approach to study mankind with respect to society, economy and history.
74. (d) 1996 onwards.....since P.V. Narasimha Rao to date.
75. (a)  $u = -1, 2F = 4 \rightarrow f = -2m$   
use  $\frac{1}{f} = \frac{1}{v} + \frac{1}{u} \rightarrow v = +2m$
76. (a) Tidal effect of sun = 146% of moon.  
\* The reasoning is partially correct.
77. (c)
78. (d) Pb makes it soft.
79. (c)
80. (a) basic or alkaline  $\rightarrow \text{pH} > 7$
81. (c)
82. (d)  $\text{Na}^+ > \text{CH}_3\text{COO}^-$
83. (c) oxides, especially  $\text{NO}_2$
84. (a)  $x + (-6) = -2, x = 4,$   
 $2x + 4 (2^-) = -2, \rightarrow x = 3$   
 $2x - 12 = -2 \rightarrow x = 5, \text{ etc.}$
85. (d) F = max, followed by O, N and C
86. (c)
87. (c)
88. (a)
89. (d) Total amount in earth's crust estimated at 28 g.
90. (c) O = 65% C = 18% H = 10% N = 3%,  
Ca and P  $\approx$  1% each
91. (d) Carborundum = SiC
92. (c) Others being B, Si, Ge, Sb and TC
93. (c) Frictional electricity and breakdown
94. (d) near Lake Mansarovar
95. (c) 64.4%
96. (b)
97. (c) highest in Africa.
98. (a)
99. (c) Approx. 100° Longitude difference  
(India = 62.5 East and Wellington  $\approx$  180° East).  
 $100 \times 4 = 400$  minutes  $\approx$  6:30 hours  
(for each degree, 4 minutes are gained eastwards).
100. (c) 1  $\rightarrow$  on R. Indus
101. (d) 2  $\rightarrow$  R. Cauvery  
3  $\rightarrow$  Correct
102. (b) 8167 m = 7th in world.
103. (a) Mahadeo = South MP
104. (a) Maikala = Raigarh / Chotta Nagpur region  
= (East - Central MP), Garhjat = Orissa.
105. (c) BHEL, one of the 'Navratna' status industry.
106. (c) Rest are above the tropic.
107. (c)
108. (c)
109. (a)
110. (b) calcite ( $\text{CaCO}_3$ ).....from marine organisms.
111. (c)
112. (a) 1793 America
113. (d) Finance Commission (under Chapter I, part XII of the Constitution)
114. (a)
115. (b) In Ist, food was the basic priority.
116. (c) Ashoka = 4th and 3rd centuries (B.C.)  
Milinda = Greek king Menander  
 $\approx$  150 B.C. (2nd c B.C.)  
Kanishka = 1st c. A.D.  
\*All are related to Buddhism.
117. (c) bacteria = vibrio cholerae.
118. (a)
119. (d) associated with the tear glands.
120. (c)
121. (d) f depends on the source
122. (d)
123. (d)  $F \propto \frac{1}{r^2} \rightarrow \frac{F_1}{F_2} = \frac{r_2^2}{r_1^2} = \frac{8^2}{16^2}$   
Thus,  $F_2 = 4F_1 = 0.02\text{N}$
124. (c)  $f > 20,000$  Hz
125. (a)
126. (d)
127. (c) From principle of calorimetry,  $m_1 C \theta_1 = m_2 C \theta_2$   
Here,  $M_1 = M_2, \therefore \theta_1 = \theta_2 \rightarrow 90 - 55 = 55 - x$   
(\* Use  $131^\circ\text{F} = 55^\circ\text{C}$ )  $\rightarrow x = 100 - 90$   
 $\rightarrow x = 20^\circ\text{C}$
128. (b)  $T = 2\pi \sqrt{\frac{l}{g}}$ . g decreases due to rotation,  
hence T increases
129. (a)  $u = 24$  m/s,  $a = 3$  m/s, each second  $= 3\text{m/s}^2$ ,  
 $v = 0.$   
Using  $v^2 - u^2 = 2aS \rightarrow 0^2 - 24^2$   
 $= 2 \times 3 \times S \rightarrow S = 96\text{m}$
130. (d)
131. (c)
132. (d)
133. (c)
134. (b)
135. (b)
136. (b)
137. (c)
138. (c)
139. (b) Lula de Silva, Brazil.
140. (c)  $25 + 1 = 26$
141. (d)
142. (b)
143. (d)
144. (b)
145. (a) 1683
146. (d)
147. (b) amphibians
148. (d)
149. (c)
150. (b)