

IBSAT Sample Paper 1 Question Paper

Time Allowed :3 Hours	Maximum Marks :100	Total Questions : 140
-----------------------	--------------------	-----------------------

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The test paper contains 140 Multiple Choice Questions (MCQs) for a total of 140 marks.
2. **There will be Negative Marking for Multiple Choice Questions (MCQs).** For every wrong answer 0.25 marks will be deducted.
3. Candidates have to indicate the most appropriate answer by darkening one of the four responses provided, with only **BLACK/BLUE BALL POINT PEN** in the OMR Response Sheet.

Example: For the question, “Where is the Taj Mahal located?”

a) Kolkata b) Agra c) Bhopal d) Delhi

Right Method

a • c d

Wrong Methods

a ⊗ c d a ✓ c d a ○ c d

4. Answering the question by any method other than the method mentioned above shall be considered wrong answer.
5. More than one response to a question shall be counted as wrong answer.
6. The candidate shall not write anything on the OMR Response Sheet other than the details required and, in the spaces, provided for.
7. After the examination is over, the candidate can carry the Question Booklet along with candidate's copy of the OMR Response Sheet. Candidate will hand over the original OMR Response Sheet to the invigilator.
8. Electronic gadgets like mobile phones, digital watch, pagers and calculators etc. are strictly not permitted inside the Test Centre/Hall.

Section I
Verbal Ability

I. Directions: In the following questions, each word is followed by five options. Choose the option which is the closest synonym of the given words. While choosing your answer, keep in mind the finer distinctions in the meaning and usage of certain words.

1. GARNE

- (A) Pulverize
 - (B) Marinate
 - (C) Enthrall
 - (D) Emblazon
 - (E) Collect
-

2. IMPERIOUS

- (A) Domineering
 - (B) Ravenous
 - (C) Striking
 - (D) Effervescent
 - (E) Humdrum
-

3. CONTUMACIOUS

- (A) Pristine
 - (B) Conservative
 - (C) Disobedient
 - (D) Optimistic
 - (E) Opinionated
-

4. QUIESCENT

- (A) Serene
- (B) Concomitant
- (C) Dormant
- (D) Clammy

(E) Hopeless

5. DISQUIETUDE

- (A) Easiness
 - (B) Discussion
 - (C) Passion
 - (D) Anxiety
 - (E) Salubrity
-

II. Directions: In the following questions, each word is followed by five options. Choose the option which is the closest antonym of the given words. While choosing your answer, keep in mind the finer distinctions in the meaning and usage of certain words.

6. VITIATE

- (A) Trust
 - (B) Deaden
 - (C) Drain
 - (D) Rectify
 - (E) Amuse
-

7. TRITE

- (A) Peaceful
 - (B) Powerful
 - (C) Noiseless
 - (D) Skeptical
 - (E) Original
-

8. CONTRITE

- (A) Unrepentant
- (B) Expanded

- (C) Remorseful
 - (D) Unresolved
 - (E) Prevailing
-

9. SQUANDER

- (A) Depart
 - (B) Preserve
 - (C) Forfeit
 - (D) Fortify
 - (E) Destroy
-

10. INDIGENT

- (A) Modest
 - (B) Impetuous
 - (C) Profitable
 - (D) Prosperous
 - (E) Garish
-

III. Directions: In the following questions, the first two words are related in a particular manner. You have to choose a word from the options so that a new pair of words is formed where the relation is the same as that of the first pair of words. You are required to consider the secondary meaning of certain words while choosing an answer.

11. Song : Cycle :: Sonnet :

- (A) Ballad
 - (B) Melody
 - (C) Rhyme
 - (D) Sequence
 - (E) Epic
-

12. Lumber : Bear :: Waddle :

- (A) Parrot
 - (B) Pigeon
 - (C) Goose
 - (D) Hawk
 - (E) Sparrow
-

13. Archipelago : Island :: Constellation :

- (A) Garden
 - (B) Flower
 - (C) Star
 - (D) Valley
 - (E) Mountain
-

14. Range : Mountains :: String :

- (A) Ribbons
 - (B) Toys
 - (C) Beads
 - (D) Keys
 - (E) Leaves
-

15. Bracket : Shelf :: Strut :

- (A) Bucket
 - (B) Valve
 - (C) Girder
 - (D) Hammer
 - (E) Rafter
-

IV. Directions: Fill in the blanks with the words that best fit the meaning of the sentence as a whole.

16. If a nation is unable to come to _____ on interpreting its own past, it will be unable to _____ its national interests.

- (A) conclusion ... plan
 - (B) decision ... comprehend
 - (C) consolidation ... meet
 - (D) consensus ... formulate
 - (E) terms ... design
-

17. Globalization _____ both prosperity and _____.

- (A) causes ... development
 - (B) reveals ... doom
 - (C) condemns ... bliss
 - (D) spreads ... distress
 - (E) transmits ... generosity
-

18. Unscrupulous use of chemical insecticides to _____ the pests leads to pest _____.

- (A) aggravate ... modification
 - (B) disintegrate ... mobility
 - (C) rectify ... revival
 - (D) kill ... stimulation
 - (E) control ... resurgence
-

19. A _____ relationship with Moscow will help New Delhi to _____ its ties with both Washington and Beijing.

- (A) robust ... leverage
 - (B) healthy ... enhance
 - (C) mutual ... lose
 - (D) perfect ... ally
 - (E) vigorous ... cement
-

20. A judge tries to _____ his duties to the best of his _____.

- (A) fulfill ... quality
- (B) discharge ... capacity

- (C) execute ... strength
 - (D) perform ... power
 - (E) manage ... ideas
-

V. Directions: In the following questions, each sentence is divided into four parts (a), (b), (c) and (d). Find out which part of the sentence contains an error. If there is no error, mark your answer as (e).

21. Language cannot be static;/ it must constant evolve/ to keep up with changing times/ and remain relevant. No error

- (A) static;
 - (B) constant evolve
 - (C) to keep up with changing times/
 - (D) and remain relevant
 - (E) No error
-

22. If he would have taken rest/ as advised by the doctor,/ he might not have/ had a second heart attack. No error

- (A) If he would have taken rest/
 - (B) as advised by the doctor/
 - (C) he might not have/
 - (D) had a second heart attack.
 - (E) No error
-

23. The total allocation for education/ in this year's budget is Rs 34,400 crore,/ an amount that has gone up/ in 20 percent from last year. No error

- (A) The total allocation for education/
 - (B) in this year's budget is Rs 34,400 crore,/
 - (C) an amount that has gone up/
 - (D) in 20 percent from last year.
 - (E) No error
-

24. Of the two cars/ that my friend has,/ the new Ford is without any question,/ the cheapest to run. No error

- (A) Of the two cars/
- (B) that my friend has/
- (C) the new Ford is without any question,/
- (D) the cheapest to run.
- (E) No error

25. Although China is at present/ far ahead of India/ in terms of economic progress,/ it's education system is seriously flawed. No error

- (A) Although China is at present/
- (B) far ahead of India/
- (C) in terms of economic progress,/
- (D) it's education system is seriously flawed.
- (E) No error

VI. Directions: In each of the following questions, a part of the given sentence has been underlined as this part may have an error. The first option is the same as the underlined part in the given sentence. Choose this option if you think that the underlined part has no error. Otherwise, choose the option that rectifies the error in the underlined part of the given sentence.

26. In many corporations, employees are replace by automated equipments so that to save money.

- (A) Are replace by automated equipments so that to
- (B) Are being replaced by automated equipment in order to
- (C) Were replaced by automated equipment so as to
- (D) Are replacing by automated equipment such that that
- (E) Replaces by automated equipment accordingly to

27. Tropical forests play a key role as the world's carbon and wildlife reservoirs.

- (A) Play a key role as the world's
- (B) Had played a key role in the world's

- (C) Have been played a key role at the world's
 - (D) Has played a key role for the world's
 - (E) Plays a key role beside the world's
-

28. Research shows that besides from obesity, Office Ergonomics are a leading factor that contributes to backache.

- (A) Besides from obesity, Office Ergonomics are a leading factor
 - (B) Apart from obesity, Office Ergonomics is a leading factor
 - (C) Along with obesity, Office Ergonomics were leading factors
 - (D) Beside obesity, Office Ergonomics should be leading factor's
 - (E) Coupled with obesity, Office Ergonomics was leading factors'
-

29. Even as a series of bad news from the US has hit the global financial scene hard, the Indian IT companies have gone into stock taking mode.

- (A) Have gone into
 - (B) Has gone for
 - (C) Have been going to
 - (D) Might have been going on
 - (E) Are going in
-

30. A new study has found that almonds could help improving our digestion health by increasing levels of beneficial gut bacteria.

- (A) Could help improving our digestion
 - (B) Can help improved our digestion
 - (C) Could be helping to improve our digestive
 - (D) Can help improved our digestive
 - (E) Could help improve our digestive
-

VII. Directions: In the following questions, different parts of a sentence/passage have been jumbled. Choose the option that represents the best sequence to make the sentence/passage coherent and meaningful. Ignore punctuation marks.

31. Developed countries, including European economies and to a lesser extent

- (A) QRSP
- (B) SRQP
- (C) RSQP
- (D) PSRQ
- (E) QSPR

32. Telescopes arrays in the Northern and Southern hemispheres

- (A) PSQR
- (B) SPRQ
- (C) RQSP
- (D) QPRS
- (E) QSRP

33. Farmers of South India, particularly, Kerala

- (A) SQRP
- (B) PRQS
- (C) SQPR
- (D) RQPS
- (E) QPSR

34. The environmental problems the world is facing

- (A) PSQR
- (B) RQSP
- (C) SQPR
- (D) QPRS
- (E) QSRP

35. We should definitely move them

- (A) SPRQ
- (B) QRPS
- (C) SQPR

- (D) PRSQ
 - (E) RSPQ
-

VIII. Directions: Choose a suitable one-word substitute for the given phrase from the options under each question.

36. An action that is bad or unacceptable, but not very serious.

- (A) Felony
 - (B) Etiquette
 - (C) Misdemeanor
 - (D) Repression
 - (E) Concord
-

37. An animal or plant that lives in or on another animal or plant.

- (A) Sycophant
 - (B) Bigot
 - (C) Proselyte
 - (D) Chauvinist
 - (E) Parasite
-

38. To make someone angry by hurting the pride.

- (A) Pique
 - (B) Quell
 - (C) Nurture
 - (D) Mitigate
 - (E) Divulge
-

39. Harsh or insensitive in manner.

- (A) Stupendous
- (B) Abrasive
- (C) Venomous

- (D) Fecund
 - (E) Odious
-

40. Having the habit of putting forward one's own view noisily without any regard for the feelings of others.

- (A) Lissome
 - (B) Gullible
 - (C) Desolate
 - (D) Naïve
 - (E) Bumptious
-

IX. Directions: Choose the option that best expresses the meaning of the given idiom/phrase.

41. She was sure to steal a march upon her rivals.

- (A) Oppose
 - (B) Confront
 - (C) Outshine
 - (D) Avoid
 - (E) Compromise
-

42. The carrot and stick policy pays dividends in every organization.

- (A) Rigorous training
 - (B) Continuous vigilance
 - (C) Democratic approach
 - (D) Reward and punishment
 - (E) Authoritative style
-

43. My friend has a *bee in his bonnet*.

- (A) Obsessed with something
- (B) Remains unaffected

- (C) Thinks a lot
 - (D) Always busy
 - (E) Be restless
-

44. If we give them this concession, it will be the *thin end of the wedge*.

- (A) The least we could do for them
 - (B) The beginning of further concessions
 - (C) Inadequate to fulfill their needs
 - (D) A compromise on principle
 - (E) Lead to more demands
-

45. Archana *cut me dead* in the street.

- (A) Deceived me
 - (B) Abused me
 - (C) Pushed me
 - (D) Left me
 - (E) Ignored me completely
-

X. Directions: *Replace the number with the word(s) that best fit(s) the meaning of the passage as a whole.*

In the modern industrial age, the demand for **46** technical personnel is much more than in the feudal age because the demand for goods is much more owing to increase in population and other factors. Hence, the traditional feudal method of teaching a craft, in which only a handful of persons were taught, would no longer **47** for modern society.

Now, technical institutes or engineering colleges, where a large number of students are taught technical skills, have become **48**. Obviously, all these students could not be sons of the teacher. This **49** the very basis of the caste system in which one had no option in choosing one's vocation and had to follow one's father's profession. The caste system, in which one's vocation is chosen by one's birth, is thus totally **50** in the modern age.

46. From the following select the appropriate word to replace number 46 in the above passage.

- (A) Untrained
- (B) Skilled

- (C) Homogenous
 - (D) Supplementary
 - (E) Talented
-

47. From the following select the appropriate word to replace number 47 in the above passage.

- (A) Help
 - (B) Utilize
 - (C) Suffice
 - (D) Apply
 - (E) Call
-

48. From the following select the appropriate word to replace number 48 in the above passage.

- (A) Dispensable
 - (B) Perfunctory
 - (C) Inessential
 - (D) Mandatory
 - (E) Necessary
-

49. From the following select the appropriate word to replace number 49 in the above passage.

- (A) Destroyed
 - (B) Cleared
 - (C) Smothered
 - (D) Diluted
 - (E) Culled
-

50. From the following select the appropriate word to replace number 50 in the above passage.

- (A) Conserved
- (B) Eroded

- (C) Honored
 - (D) Outmoded
 - (E) Perforated
-

Section - II

Reading Comprehension

Directions: Each passage is followed by questions based on its content. Answer the questions on the basis of what is directly stated in each of the passages or can be inferred from it.

Harold Pinter, the British playwright, whose gifts for finding the ominous in the everyday and the noise within silence made him the most influential and imitated dramatist of his generation. In more than 30 plays written between 1957 and 2000 and including masterworks like *The Birthday Party*, *The Caretaker*, *The Homecoming* and *Betrayal*, Pinter captured the anxiety and ambiguity of life in the second half of the 20th century with terse, hypnotic dialogue filled with gaping pauses and the prospect of imminent violence. Pinter became one of the few modern playwrights whose names instantly evoke a sensibility. The adjective ‘Pinteresque’ has become part of the cultural vocabulary as a byword for strong and unspecified menace.

An actor, essayist, screenwriter, poet, director and dramatist, Pinter was also publicly outspoken in his views on repression and censorship, at home and abroad. He used his Nobel acceptance speech to denounce American foreign policy, saying that the United States had not only lied to justify waging war against Iraq, but that it had also ‘supported and in many cases engendered every right-wing military dictatorship’ in the last 50 years. His political views were implicit in much of his work. Though his plays deal with the slipperiness of memory and human character, they are also almost always about the struggle for power.

In Pinter’s work ‘words are weapons that the characters use to discomfort or destroy each other’ said Peter Hall, who has staged more of Pinter’s plays than any other director. But while Pinter’s linguistic agility turned simple, sometimes obscene, words into dark, glittering and often mordantly funny poetry, it is what comes between the words that he is most famous for. And the stage direction ‘pause’ would haunt him throughout his career.

Intended as an instructive note to actors, the Pinter pause was a space for emphasis and breathing room. But it could also be as threatening as a raised fist. Pinter said that writing the word ‘pause’ into his first play was ‘a fatal error’. It is certainly the aspect of his writing that has been most parodied. But no other playwright has consistently used pauses with such rhythmic assurance and to such fine-tuned manipulative effect. Early in his career, Pinter said his work was about ‘the weasel under the cocktail cabinet’. Though he later regretted the image, it holds up as a metaphor for the undertow of danger that pervades his work.

Pinter was born in Hackney on October 10, 1930. With the outbreak of World War II, Harold was evacuated from London to a provincial town in Cornwall. His feelings of loneliness and isolation from that time were to surface later in his plays. Few writers have been so consistent over so many years in the tone and execution of their work. Just before rehearsals began for the West End production of *The Birthday Party* half a century ago, Pinter sent a letter to his director, Peter Wood. In it he said, ‘The play is a comedy because the whole state of affairs is absurd and inglorious. It is, however, as you know, a very serious piece of work.’

51. What is the most significant aspect noticed in his plays?

- (A) Absurdity
 - (B) Manipulative effect
 - (C) Fatal errors
 - (D) Struggle for power
 - (E) Linguistic agility
-

52. Select the synonym of the word ‘mordantly’ as used in the passage.

- (A) Complacently
 - (B) Noticeably
 - (C) Hauntingly
 - (D) Deadly
 - (E) Harshly
-

53. Pinter was the most imitated dramatist of his times because

- (A) His writings at once evoke a rare sensibility which is an endearing trait
 - (B) He found the ominous in the everyday and the noise within silence
 - (C) He was one of the few modern writers whose name became part of modern cultural vocabulary
 - (D) He was publicly outspoken in his views on repression and censorship, not only at home but also abroad
 - (E) His works depict violence though he does not look around for trouble
-

54. What was the most burlesqued aspect of Pinter’s writing?

- (A) Characters that are ready to hit but afraid to strike
 - (B) The ‘pause’ which is used as an instructive note to actors
 - (C) The consistent usage of ‘pause’ with rhythmic assurance
 - (D) His focused performance and economy of gesture
 - (E) Introducing ‘pause’ which has a violent effect
-

55. What was the tone of his plays?

- (A) Skeptical
 - (B) Pessimistic
 - (C) Candid
 - (D) Critical
 - (E) Unconvincing
-

56. Which of the following words, used in the passage, is a one-word substitute for the phrase, ‘a figure of speech in which an expression is used to refer to something that it does not literally denote in order to suggest a similarity’?

- (A) Weasel
 - (B) Metaphor
 - (C) Image
 - (D) Pause
 - (E) Space
-

57. What did he capture in his most celebrated works?

- (A) The anxiety and ambiguity of life in the latter half of the 20th century
 - (B) The slipperiness of memory and human character
 - (C) The struggle for power
 - (D) The repression and censorship adopted by the US in the matter of Iraq
 - (E) None of the above
-

58. How did Pinter describe *The Birthday Party*?

- (A) It is a very serious piece of work
 - (B) It is supposed to be a comedy of errors
 - (C) It is absurd and inglorious in its content
 - (D) It is technically flawed in construction
 - (E) It is a byword for strong and unspecified menace
-

Directions: Each passage is followed by questions based on its content. Answer the questions on the basis of what is directly stated in each of the passages or can be inferred from it.

It was a milestone ride to empowerment. A young girl, probably a decade ago, driving a scooter, a little unsteadily, with mom on the pillion. It was the gift of mobility; more significantly, it was a trip to liberation. Now, the girl swings her Scorpio round a dangerous kerb even as mom and a brood of aunt, grandma and nieces squeal in pride. The girl now has a handy tool: her cell phone. Mobility and communication!

Sure, gender cleansing is now a frightening reality. Girls are killed before or at birth, plunging the all-India sex ratio to 927 girls for 1,000 boys. If she survives, the girl cannot assume she'll get a fair share of the family's education budget. Chances are she will drop out; to look after her siblings, to cook at home, to work in the fields, to be married off for money. She might be 'gifted' to a temple. 'Dowry death', a term we gave the English lexicon, is not in danger of fading out. 'The only women likely to keep their daughters are the truly independent-minded, not just the financially independent,' said author Gita Aravamudan. We know of her resilience, ability to raise a family, find happiness somewhere and keep her sanity somehow. All of which is excellent fodder for exploitation.

Out of this tangled mess has emerged the New Woman; a woman 'pushing against the limits society imposed on her'. With an identity no longer defined by domesticity or relationships, she now comes across as a person with a strong sense of self and self worth. A woman taking a tough stand for her rights is no shrew but a woman of substance while a female globetrotter is no adventuress but a woman of spirit. In short, women are going where men fear to tread.

But there are nay-sayers too. "I'm wondering if it is even theoretically possible to define the 'New Woman' in terms of a single set of characteristics. Indian women are so different from each other in terms of their class, caste, regional, linguistic and religious identities that what is 'old' for one is 'new' for the other, and not even on the map for yet another. That said, I think the one thing that has changed is that women are no longer hesitant or apologetic about claiming a share of space and visibility within the family, at work, in public spaces, in the public discourse," said Kalyani Menon Sen of JAGORI. Small concessions to big achievements, she tastes freedom. Her aspirations are taken seriously; count the hailstorm of women-centric TV shows, commercials and food items aimed her way. "It comes with monetary independence," said Usha Srinivasan, HR Consultant.

How is it easier now? Sustained campaigns run by women groups since the national movement. Laws passed to make justice equitable, for corrective surgery of mindsets. Travel, definitely. Her willingness to take up non-traditional workplaces; job opportunities, with IT hiring in bulk. Women began to write and read what other women wrote. And cyberspace, she now blogs and networks, using it for the freedom denied so far to voice her angst, express outrage and disapproval, fulfill the need for acceptance and approval. To speak out.

59. Choose the meaning of 'resilience' as used in the passage.

- (A) Susceptible to criticism or persuasion or temptation
 - (B) Good-natured tolerance of delay or incompetence
 - (C) Able to withstand or recover quickly from difficult conditions
 - (D) The distinct personality of an individual regarded as a persisting entity
 - (E) An acute but unspecific feeling of anxiety, usually reserved for philosophical anxiety about the world or about personal freedom
-

60. The 'New Woman' emerged by

- (A) Relieving herself from all sorts of restrictions laid down by Indian men
 - (B) Breaking all the shackles set forth by the society authoritatively as obligatory
 - (C) Creating her own 'space' within the confines of the four walls of her home
 - (D) Pushing herself against the norms and traditions prevailing in the Indian society
 - (E) Receiving the right kind of education at the right time that helped her to emancipate herself
-

61. What according to the author is a sign of women empowerment?

- (A) Refusing to play stereotyped roles
 - (B) Raising the voice against paradoxes
 - (C) Earning more money than men
 - (D) Seeking total liberation
 - (E) Rebelling against the prevailing norms
-

62. Presently, what is the 'New Woman' engaged in?

- (A) She is claiming monetary independence so that she can enjoy greater autonomy
 - (B) She realized the significance of freedom and equality and so is fighting for equal rights
 - (C) She is contesting for her share of space which is of utmost importance to a woman
 - (D) She is very busy building a self image for herself and in keeping up her identity against all odds
 - (E) She is courageously treading uncharted paths which are dreaded even by her male counterparts
-

63. In the present days, what is the most terrifying actuality regarding a girl child?

- (A) Increasing school dropout rate
 - (B) Gifting the girl child to temples
 - (C) Low allocation of education budget
 - (D) Domestic violence and molestation
 - (E) Gender cleansing
-

64. According to the passage, which of the following statements is true?

- (A) A woman of substance is the one who meekly surrenders to male domination
 - (B) Blogs and network sites are now used as effective tools to express a woman's anger for denying her the freedom
 - (C) Women writers articulate their experiences in a voice which is yet to be heard
 - (D) The IT and travel sectors are the two upcoming fields that restricted growth opportunities for women
 - (E) Ever since the days of freedom struggle, lack of sustained efforts by women organizations added to their already existing misery
-

65. The author highlights the fact that

- (A) Sons are at a premium in India
 - (B) Girl child education is given utmost importance in urban areas
 - (C) Discrimination extends to all areas including the food that is given to a girl
 - (D) It is worrisome to note that the all-India sex ratio is declining rapidly
 - (E) Daughters have choices of their own and are given total freedom
-

66. What is the central theme of the present passage?

- (A) What is 'new' for one woman maybe 'old' for another and some other woman might be facing severe male domination
 - (B) There is tremendous diversity among the different groups of Indian women
 - (C) Women are prone to violence in all walks of life and they are subjected to suppression right from their birth
 - (D) Celebrating the New Age woman who scripts her own success stories
 - (E) Dowry deaths are mostly prevalent in rural India and the girl child is neglected by the family members
-

Directions: Each passage is followed by questions based on its content. Answer the questions on the basis of what is directly stated in each of the passages or can be inferred from it.

I am the family face; flesh perishes. I live on, projecting trait and trace through time to times anon, and leaping from place to place over oblivion.

So wrote Thomas Hardy in his poem, *Heredity*, describing direct descent of life from one generation to the next. Indeed, the poem reflects the DNA in our genome. Dr. Drew Endy of MIT quoted this when he described how people at the J. Craig Venter Institute (JCVI) bypass nature's constraint of direct descent. Scientists there have used chemistry and biochemistry to produce the first synthetic genome in the laboratory. They chemically synthesized many fragments of the DNA, encoding the 582,970-units-long genome of a bacterium called *Mycoplasma genitalium*. Next, they assembled these fragments in perfect order to generate the genome of the bacterium.

The DNA sequence of the synthetic one was confirmed to be identical to the natural one. While the DNA pieces were synthesized chemically, the stitching together was done using the biochemical machinery of a host cell. About 100 pieces of the genome, each 5000-7000 units long in DNA sequence, were first joined to produce 25 sub-assemblies, each about 24000 base pairs long. These were then introduced into the bacterium *E. coli* to produce sufficient DNA for the next steps. Next, they repeated the procedure to generate large fragments comprising 1/4th of the whole genome of *M. genitalium*.

Now, they used the clever trick of exploiting the process called homologous recombination. This is a basic essential process in every cell, which physically rearranges the two strands of DNA. The JCVI researchers inserted the synthesized DNA fragments into yeast and utilized its homologous recombination ability to generate the whole 580,000 long genome of *M. genitalium* in one step.

This is clearly a landmark work that leads into the brave new world of synthesizing life itself in the laboratory. It was hardly 200 years ago when Friedrich Wohler synthesized urea, an organic molecule, in the chemical laboratory, thus throwing out the notion of 'vital forces' involved in the components of living organisms. What is the next step, making life itself in the lab, bypassing nature? With single cell organisms like *M. genitalium*, it might not be far away. It is now possible in the lab to do so, by inserting the genome into a 'host' cell and asking the latter to make the bacterium of your choice. If only we find a way to insert the bacterial genome into this proto-cell, and somehow trigger it to make the bacterium itself! We would have chemically created life in the lab. This is not a pipedream; JCVI scientists are already on the job, and my bet is they will do it within a few years.

This surely raises ethical questions, a matter that JCVI is keenly aware of and is already engaged in with ethicists. Even their present work on *M. genitalium* was done with prior approval of ethical experts. But then, today it is *M. genitalium*, tomorrow it could be a more advanced, multi-cellular organism, and that could flummox even the ethicist. Assisted reproduction, which is the other side of the coin and truly a recently initiated technology, has become ethically and morally acceptable. Cloning of Dolly, the sheep, has not raised any outrage, but cloning a

human certainly does.

67. What is the author's gut feeling?

- (A) Scientists will invent a mechanism that might trigger a genome and convert it into the bacterium
- (B) Scientists will succeed in creating a synthetic genome which has the characteristics of a natural one
- (C) Scientists will improve upon the synthetic gene and find an alternative which is akin to the proto-cell of the bacterium
- (D) Scientists will prove that the DNA structure of a proto-cell is similar to that of an artificial one
- (E) Scientists will find a way to insert the bacterial genome into the proto-cell and somehow trigger it to make the bacterium itself

68. Which of the following words aptly substitutes 'flummox' as used in the passage?

- (A) Control
- (B) Petrify
- (C) Bewilder
- (D) Challenge
- (E) Demystify

69. Why does the author refer to Thomas Hardy's poem?

- (A) To estimate the role played by direct properties attributable to one's parentage
- (B) To underline the significance of the biological process whereby genetic factors are transmitted from one generation to the next
- (C) To emphasize the importance of the total of inherited attributes that rarely come by natural descent
- (D) To highlight the purpose of genetic endowment which can be traced through the family face
- (E) To evaluate the function of genes that are seldom present among the descendants of one individual

70. According to the passage, which of the following statements is not true?

- (A) Thomas Hardy's poem, Heredity, reflects the DNA in a human being's genome
 - (B) Creating life in a lab will surely raise pertinent questions pertaining to ethics
 - (C) Scientists, in future, will be able to create life under artificial conditions
 - (D) Cloning of Dolly, the sheep, has invited the wrath of people because the sheep soon died a miserable death
 - (E) Two centuries ago, urea was synthesized in a chemical laboratory
-

71. What did the scientists at JCVI do?

- (A) They circumvented nature's constraint of direct descent
 - (B) They bypassed nature's laws and produced a natural gene
 - (C) They invented an imperishable gene which is synthetic in nature
 - (D) They ignored the theory of inheritance and created an intrinsic gene
 - (E) They produced a gene which can be preserved permanently
-

72. A recently initiated technology, which is ethically acceptable, is

- (A) Assembling the complex biological molecule
 - (B) Gene sequencing
 - (C) Assisted reproduction
 - (D) Stitching together of an artificial cell
 - (E) Inserting a proto-cell into the bacterium
-

73. What was the outcome of their research?

- (A) They analyzed the DNA sequence of the synthetic gene in the laboratory for the first time
 - (B) They contrasted the properties of a synthetic gene with that of a natural one
 - (C) They created a gene sequence in artificial conditions which could undergo mutation
 - (D) They produced the first synthetic genome in the laboratory which is analogous to the natural one
 - (E) They studied the functions of a natural gene and a synthetic gene under controlled conditions of a laboratory
-

74. According to the author's opinion, what would be the result of cloning a human being?

- (A) It will invite people's indignation
 - (B) It would be a wonderful prospect for humanity
 - (C) It might change the face of the earth
 - (D) It will be looked down as a sin
 - (E) It will prove to be a global catastrophe
-

75. The DNA pieces of the synthetic genome were stitched together by using

- (A) The method of biochemical synthesis
 - (B) The biochemical machinery of a host cell
 - (C) The biochemical genome of a host cell
 - (D) The DNA sequence of a host cell
 - (E) The synthesized DNA pieces of a host cell
-

Directions: This passage is followed by questions based on its content. Answer the questions on the basis of what is directly stated in each of the passages or can be inferred from it.

Power and possession have been central pursuits of modern civilization for a long time. They blocked out or distorted other features of the westernized renaissance (revival), which promised so much for humanity. What people have been and are still being taught to prize is money, success, control over the lives of others; acquisition of more and more objects.

Modern social, political and economic systems, whether capitalist, fascist or communist, reject in their working the basic principle that the free and creative unfoldment of every man, woman and child is the true measure of the worth of any society. Such unfoldment requires understanding and imagination, integrity, compassion and cooperation among people and harmony between the human species and the rest of nature.

Acquisitiveness and the pursuit of power have made modern man an aggressor against everything that is non human, an exploiter and oppressor of those who are poor, meek and unorganized. He has become a pathological type who hates and distrusts the world and suffers from both acute loneliness and false pride.

The need for a new renaissance is deeply felt by those sensitive and conscientious men and women who not only perceive the dimensions of the crisis of our age but who also realize that only through conscious and cooperative human effort will this crisis be met and probably even overcome.

76. Which of the following statements is not true in context of the given passage?

- (A) There is a need for a new renaissance
 - (B) The poor and needy are oppressed by modern man
 - (C) Modern man is not an individualist
 - (D) Western renaissance has held a great deal of promise for mankind
-

77. The author hopes that the present crisis can be solved by

- (A) Devoted individual efforts
 - (B) Different political systems
 - (C) Spiritual individuals
 - (D) Purposeful and collective efforts
-

78. The author appears to be advocating which of the following approaches to be adopted by the society?

- (A) Capitalist
 - (B) Communist
 - (C) Humanistic
 - (D) Socialist
-

79. The modern value systems encourage the importance of which of the following?

- (A) Craving for power and possession
 - (B) Basic respect for all individuals
 - (C) Spiritual development of an individual
 - (D) Spirit of inquiry and knowledge
-

80. According to the passage, why has modern man turned out to be an enemy of everything that is non-human?

- (A) He hates and distrusts other human beings
- (B) He has been dominated by the drives of acquisitiveness and power
- (C) He consciously practices the spirit of cooperation
- (D) He is preoccupied with his own self

Section - III
Quantitative Aptitude

Directions: There are 30 questions in this section. Each question is followed by five alternatives (a), (b), (c), (d) and (e). You are required to choose the best alternative from these five alternatives.

81. P, Q and E start a joint venture, where in they make an annual profit. P invested one-third of the capital for one-fourth of the time, Q invested one-fourth of the capital for one-half of the time and R invested the remainder of the capital for the entire year. P is a working partner and gets a salary of ‘ 10,000 per month. The profit after paying P’s salary is directly proportional to the sum each one has put and also to the square of the number of months for which each has put their sum in the venture. If in a year P earns ‘ 60,000 more than Q, then how much does P earn?

- (A) ‘ 1,00,000
- (B) ‘ 1,20,000
- (C) ‘ 1,35,000
- (D) ‘ 1,50,000
- (E) ‘ 1,80,000

82. Given $A = x + y^2 + z^3$. If x increases by 6300%, y increases by 700% and z increases by 300%, then what is the percentage increase in the value of A ?

- (A) 1200%
- (B) 1800%
- (C) 2600%
- (D) 3300%
- (E) 6300%

83. What is the area of the square, if four vertices lie on the circumference of a circle where the area of the circle is four times its diameter in magnitude?

- (A) $\frac{8}{\pi^2}$ sq.units
- (B) $\frac{16}{\pi^2}$ sq.units
- (C) $\frac{32}{\pi^2}$ sq.units

- (D) $\frac{64}{\pi^2}$ sq.units
(E) $\frac{128}{\pi^2}$ sq.units
-

84. The charge for sending a telegram is constant for the first 10 or less words and an amount proportional to the number of words exceeding 10. If the charge for a 15 word telegram is 3.00 and that for a 20 word is 4.25, how much would it cost to send a 35 word telegram?

- (A) 8.00
(B) 9.50
(C) 10.50
(D) 11.25
(E) 12.50
-

85. If $f(a, b) = a^2 + b^2$ and $g(a, b) = \frac{2}{b^2} [a^2 + b^2]$, then what is the value of $f(6, 3) - g(8, 4)$?

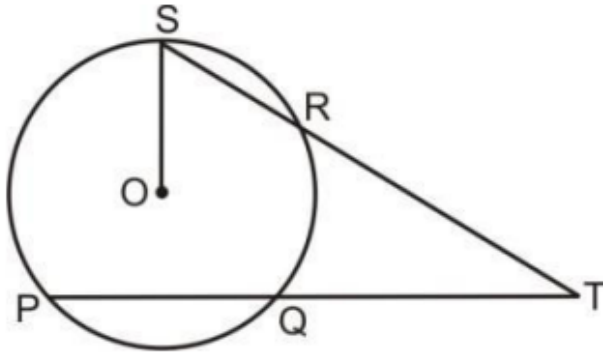
- (A) 30
(B) 35
(C) 40
(D) 45
(E) 40
-

86. There are eight persons – P, Q, R, S, T, U, V and W – standing in a row and four distinct articles A, B, C and D are to be given to four people. No four neighboring persons receive an article. How many ways can this distribution be done?

- (A) 1680 ways
(B) 1560 ways
(C) 1440 ways
(D) 1380 ways
(E) 1320 ways
-

87. In the figure below, PT and ST are two secants. If O is the centre of the circle and $PQ = 2QT = 8$ cm, $OS = 5$ cm, then what is the measure of the line OT?

(Figure not drawn to scale)



- (A) $\sqrt{54}$ cm
- (B) $\sqrt{60}$ cm
- (C) 8 cm
- (D) $\sqrt{73}$ cm
- (E) $\sqrt{80}$ cm

88. Gopi constructed a right-angled triangle. By modifying the dimensions of the first triangle, he drew another triangle. The modifications are – the largest side is increased by 5 cm, the smallest side is doubled, and the third side is increased by 50%. If the triangle formed with these new dimensions has equal angles, then what is the perimeter of the new triangle?

- (A) 45 cm
- (B) 60 cm
- (C) 90 cm
- (D) 120 cm
- (E) 150 cm

89. What is the ratio of the sum of the squares of the sides of a triangle to the sum of the squares of its medians?

- (A) 1 : 2
- (B) 2 : 1
- (C) 2 : 3
- (D) 3 : 4
- (E) 4 : 3

90. The boat will sink when the weight on it increases beyond 350 kg. There is a hole through which water leaks in at 0.4 kg/s. The boat weighs 1200 kg, the boatman 48 kg, and there are four passengers weighing 42.5, 53.5, 43.5, 54.5 kg. The boatman throws out water at 0.04 kg/s. How long will the boat float?

- (A) 60 hours
- (B) 80 hours
- (C) 96 hours
- (D) 100 hours
- (E) 120 hours

91. In an organization, there are four departments A, B, C and D with some accountants, managers, stenographers and office boys working together. Department A has 10 accountants, 8 managers, 7 stenographers and 3 office boys. The total monthly salary of all these employees is ‘ 2,37,500. Department B has 5 stenographers, 12 accountants, 6 managers and 7 office boys. The total monthly salary of all these employees is ‘ 2,31,500. Department C has 4 managers, 4 stenographers, 5 office boys and 7 accountants. The total monthly salary of all these employees is ‘ 1,51,000. If all the respective employees are paid equally in all the departments, then find the total monthly salary of 18 accountants, 11 managers, 10 stenographers and 10 office boys of department D?

- (A) 2,85,500
- (B) 3,25,500
- (C) 3,60,500
- (D) 3,85,500
- (E) 4,15,000

92. If $\log_{a^4} 65536 = 2$, what is the value of ‘a’?

- (A) 2
- (B) 4
- (C) 6
- (D) 8
- (E) $\sqrt{2}$

93. A six-digit code is to be formed using 6 distinct numbers. Number in the first place is square of a prime number in third place. Numbers in 4th, 6th, 2nd and 1st

place are consecutive numbers. If all odd digits except 1 are present in the code, what is the sum of all the digits?

- (A) 17
- (B) 21
- (C) 34
- (D) 38
- (E) 43

94. The functions $f(x)$ and $g(x)$ are related as $f(g(x)) = xg(f(f(x)))$, where $f(x) = \frac{x}{x-1}$. What could be the functional form $g(x)$?

- (A) $\frac{1}{x}$
- (B) $\frac{x}{x+1}$
- (C) $\frac{x+1}{x}$
- (D) $\frac{x}{x-1}$
- (E) $\frac{x}{1-x}$

95. What is the unit's digit of the expression $77^{920} + 64^{165} + 53^{246}$?

- (A) 0
- (B) 1
- (C) 2
- (D) 3
- (E) 4

96. A blind man lives in an apartment containing 2 rooms. Each day before going to work he enters any one room randomly, picks up a bag and leaves home. One of the rooms contains 3 blue, 4 green and 5 red bags and the other contains 2 blue, 1 green and 3 red bags. What is the probability that he takes a green bag to his workplace?

- (A) $\frac{1}{4}$
- (B) $\frac{1}{3}$

- (C) $\frac{1}{2}$
(D) $\frac{2}{3}$
(E) $\frac{3}{4}$
-

97. There are three cans and a bucket. The cans each have a capacity of 5 litres, but are partially filled with water. The bucket also has some water in it. The sum of the water in the bucket and water in the first can is half of the total bucket capacity. When the first and third cans are emptied into the bucket, it contains 6 litres of water. Instead, when the second and the third cans are emptied into the bucket, it contains 7 litres of water. When water in all the cans are poured into the bucket, it is filled to its capacity. The first and second can contain a total of 7 litres. How many litres did the bucket already contain?

- (A) 1 litre
(B) 2 litres
(C) 3 litres
(D) 4 litres
(E) 5 litres
-

98. If the selling price of an article is five times the discount offered and if the percentage of discount is equal to the percentage profit, what is the ratio of the discount offered to the cost price?

- (A) 11 : 30
(B) 4 : 15
(C) 7 : 30
(D) 1 : 6
(E) 3 : 25
-

99. The dimensions of a triangle are 15 cm, 8 cm, and 17 cm. What is the area of a circle having radius $(r + 4)$ cm if 'r' is the inradius of the given triangle?

- (A) $36\pi \text{ cm}^2$
(B) $49\pi \text{ cm}^2$
(C) $54\pi \text{ cm}^2$
(D) $64\pi \text{ cm}^2$

(E) $81\pi \text{ cm}^2$

100. What is the geometric mean of the sequence 1, 3, 9, 27, 81, ..., 3^n ?

- (A) $3^{\frac{n(n+1)}{2}}$
 - (B) $3^{\frac{n}{2}}$
 - (C) 3^n
 - (D) 3^{2n}
 - (E) $3^{n(n+1)}$
-

109. Given quadratic equation is $x^2 - |x| - 30 = 0$. Then which of the following statements is/are incorrect?

- (A) $x - 6 = 0$
 - (B) $x + 6 = 0$
 - (C) $x + 5 = 0$
 - (D) $x + 7 = 0$
 - (E) Both (c) and (d)
-

110. In a shooting competition, all shooters must hit the letter space where letter 'A' is written (small equilateral triangle of side 3 cm) on a target board shaped as a larger similar triangle of side 12 cm. What is the probability that the shooter will hit that space?

- (A) $\frac{1}{16}$
 - (B) $\frac{1}{12}$
 - (C) $\frac{1}{8}$
 - (D) $\frac{1}{4}$
 - (E) $\frac{3}{4}$
-

103. What is the value of $\sqrt{42 + \sqrt{42 + \sqrt{42 + \sqrt{42 + \dots}}}}$?

- (A) -7
 - (B) -6
 - (C) 6
 - (D) 7
 - (E) 42
-

104. Rohit purchased a car and a plot at the same time. At the end of the first two years the value of the plot increased by 30% and the value of the car decreased by 10%. At the end of next two years, the value of the car decreased by 20% and the value of the plot increased by 25%. At the end of next two years, the value of the plot increased by 20% and the value of car decreased by 25%. Had he sold both the car and the plot at the end of sixth year, he would have got 56% more from the plot than from the car. How much less did he pay for the plot than the car when he purchased them?

- (A) 42%
 - (B) 46%
 - (C) 52%
 - (D) 54%
 - (E) 56%
-

105. An electronic company conducts a survey of 1500 houses for their products. The survey suggested that 862 houses own TV, 783 houses has AC and 736 houses has washing machine. There were 95 houses having only TV, 136 houses having only AC and 88 houses having only washing machine. There were 398 houses having all the three equipments. How many houses have only TV and washing machine but not AC?

- (A) 65
 - (B) 119
 - (C) 184
 - (D) 185
 - (E) 213
-

106. A series is formed in such a manner that the first term is the first natural number, the second is the square of the first term, the third term is the third natural number and fourth is the square of the third term and so on. What is the sum of the first 50 terms of the series?

- (A) 19825
 - (B) 19450
 - (C) 20825
 - (D) 21450
 - (E) 22825
-

107. Anu collected certain number of coins of denominations 1, 2, and 5. She has certain number of 2 coins, 4 times as many 1 coins as 5 coins, and 15 more 2 coins than 1 coins. If the total value is 490, how many 2 coins are there?

- (A) 11
 - (B) 20
 - (C) 35
 - (D) 60
 - (E) 70
-

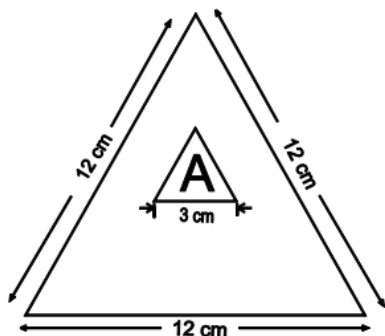
108. What is the probability that a two-digit positive integer N has the property that the difference of N and the number obtained by reversing the order of its digits is a perfect cube?

- (A) $4/45$
 - (B) $5/15$
 - (C) $6/45$
 - (D) $7/45$
 - (E) $8/45$
-

109. Given quadratic equation is $x^2 - |x| - 30 = 0$. Then which of the following statements is/are incorrect?

- (A) $x - 6 = 0$
 - (B) $x + 6 = 0$
 - (C) $x + 5 = 0$
 - (D) $x + 7 = 0$
 - (E) Both (c) and (d)
-

110. In a shooting competition, all shooters must hit the letter space where letter 'A' is written (small equilateral triangle of side 3 cm) on a target board shaped as a larger similar triangle of side 12 cm. What is the probability that the shooter will hit that space?



- (A) $\frac{1}{16}$
 (B) $\frac{1}{12}$
 (C) $\frac{1}{8}$
 (D) $\frac{1}{4}$
 (E) $\frac{3}{4}$

Section - IV Data Adequacy and Data Interpretation

Directions: Each question given below has a problem and two statements numbered (1) and (2) giving certain information. You have to decide if the information given in the statements is sufficient for answering the problem. Indicate your answer as:

111. In the figure below, what is the area of the smaller circle?

Statement 1: The two larger circles have the same radii of 8 cm each and $O'O'' = 12$ cm.

Statement 2: The centres O, O' and O'' of the three circles are collinear.

- (a) If the data in statement (1) alone is sufficient to answer the question
 (b) If the data in statement (2) alone is sufficient to answer the question
 (c) If the data in both the statements together are needed to answer the question
 (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 (e) If neither statement (1) nor statement (2) suffices to answer the question

112. What is the unit's digit of the number $(8pqr)^{64}$ where p , q , and r are the hundredth, tenth, and unit digits of the number?

Statement 1: The product of p and q is 12.

Statement 2: The product of q and r is 24 and r is greater than 4.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

113. Which has the greater length, AB or CD ?

Statement 1: CD is the diameter of the circle.

Statement 2: AB is the length of the side of a square inscribed in a circle whose radius is half of CD .

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

114. Ritu, Deep, Lakshya, Krish, Suja, Adi and Anu are seven friends and belong to the same family. Ritu has a son and a daughter. Krish and Deep are males. Suja and Lakshya are females. What is the relationship between Suja and Adi?

Statement 1: Ritu has a grandson and a granddaughter and Anu is Krish's niece.

Statement 2: Suja is Lakshya's sister-in-law and Deep has two children Adi and Anu.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

115. Are $\triangle ABC$ and $\triangle PQR$ congruent?

Statement 1: The triangles are right-angled triangles.

Statement 2: The base and heights of two triangles are equal.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

116. A survey on games played by 400 college students shows: 15% Hockey, 25% Football, 30% Cricket, 15% Basketball, 15% Tennis. What is the ratio of the *minimum* number of students from college A who play Basketball to the number from college A who play Football?

Statement 1: Students from college A comprise 20% of total students surveyed.

Statement 2: 15% of the total students who play Basketball and Football are from college A.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

117. If 'a' and 'b' are integers, is $\left(\frac{a}{6} + \frac{b}{5}\right)$ an integer?

Statement 1: 'a' is divisible by 5 and 'b' is divisible by 6.

Statement 2: 'a' is a multiple of 6 which is one-tenth the value of 'b'.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

118. A, B, C, D, E and F are six whole numbers. Is the 6-digit number “ABCDEF” divisible by 132?

Statement 1: The last four digits of the number have a factor 4 and $A+C+E = 12(B+D+F)$.

Statement 2: Sum of all the digits of the given number is divisible by 24.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

119. What was A’s score in fourth aptitude test?

Statement 1: A’s score in the fourth test was 12 points higher than the average score in the first three tests written.

Statement 2: A’s score on the fourth test raised the average test score from 80 to 85.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

120. What is the value of xyz ?

Statement 1: $x^a = y^b = z^c$ and $ab + bc + ca = 0$ where a, b, c are non-zero integers.

Statement 2: $a^x = b^y = c^z = a$ where a, b, c are non-zero integers.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

121. In $\triangle ABC$, $AB = 2$ cm and $BC = 4$ cm. What is the length of AC ?

Statement 1: The three sides of the triangle are in geometric progression.

Statement 2: $\angle ABC = 30^\circ$.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

122. Is xy negative?

Statement 1: $(x + y)^2 < (x - y)^2$.

Statement 2: $(x - y)$ is positive.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

123. a , b , and c are three positive integers. What is the value of $a^2 + b^2 + c^2$?

Statement 1: $a^2 + b^2 = 17$ and c is the arithmetic mean of a and b .

Statement 2: The geometric mean of a and b is 2.

- (a) If the data in statement (1) alone is sufficient to answer the question
 - (b) If the data in statement (2) alone is sufficient to answer the question
 - (c) If the data in both the statements together are needed to answer the question
 - (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
 - (e) If neither statement (1) nor statement (2) suffices to answer the question
-

124. What is today's date?

Statement 1: Three days before it was Friday.

Statement 2: One week before it was the first Tuesday in April 2007.

- (a) If the data in statement (1) alone is sufficient to answer the question
- (b) If the data in statement (2) alone is sufficient to answer the question

- (c) If the data in both the statements together are needed to answer the question
- (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
- (e) If neither statement (1) nor statement (2) suffices to answer the question

125. A right circular cone (PQR) is cut into two parts, cone (C) and frustum (F), by a plane parallel to the base. What is the ratio of the volume of C to the volume of F?

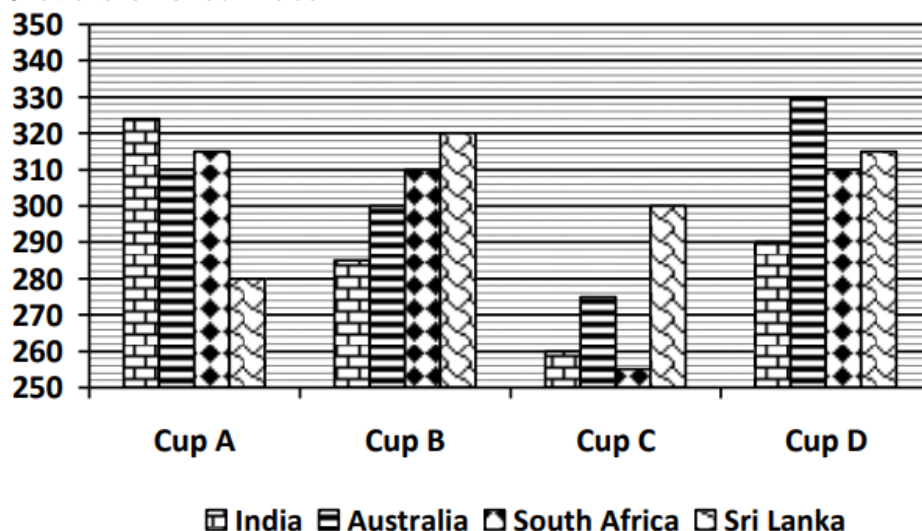
Statement 1: PQR is twice the radius of C.

Statement 2: PQR has been cut off at the middle of its height.

- (a) If the data in statement (1) alone is sufficient to answer the question
- (b) If the data in statement (2) alone is sufficient to answer the question
- (c) If the data in both the statements together are needed to answer the question
- (d) If either statement (1) alone or statement (2) alone is sufficient to answer the question
- (e) If neither statement (1) nor statement (2) suffices to answer the question

Directions: For the question numbers 126 to 130, a graph is given. Study the graph carefully and answer the following questions and choose the best answer from the five alternatives given below the question.

The bar graph below shows the highest score of different teams when they play for different cups. These are the four cups played by 4 teams in a year. Each team plays only one game against each team in each level. The team that won least number of matches is knocked out. The scores given in the graph are highest scores scored in any of the matches playing for that respective cup in a stipulated 50 overs cricket match.



126. If the given highest scores are taken, what is the least % share of *Australia* in the total scores of each Cup?

- (A) 21%
 - (B) 23.9%
 - (C) 24.7%
 - (D) 26.8%
 - (E) 31.8%
-

127. In which Cup is the % increase in Sri Lanka's highest score the greatest compared to its highest score in the previous Cup?

- (A) Cup A
 - (B) Cup B
 - (C) Cup C
 - (D) Cup D
 - (E) Cups B and D
-

128. After the completion of tournament for Cup A, each team is given a rank based on their highest scores. If the highest score of India is the same as the highest score of South Africa playing for Cup C, what is the rank of team India playing for Cup A?

- (A) 1
 - (B) 2
 - (C) 3
 - (D) 4
 - (E) None
-

129. If the highest scores of all teams in each cup are taken, what is the ratio of total runs scored by Sri Lanka and India in all the cups?

- (A) 218 : 243
- (B) 238 : 249
- (C) 218 : 249
- (D) 1215 : 1159

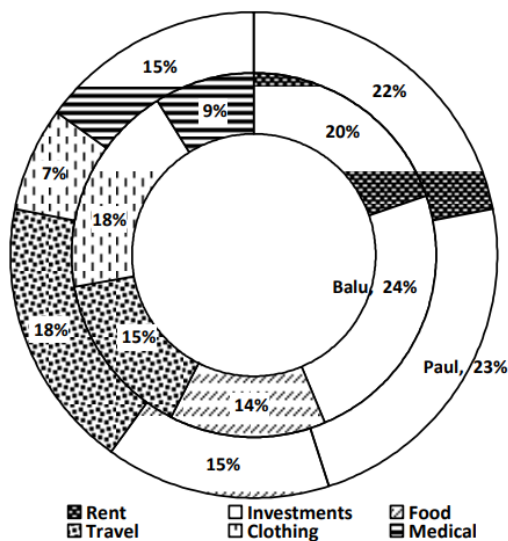
(E) 1090 : 1229

130. If the runs scored by Australia and South Africa for Cup B are of a final match, what is the required run rate of Australia to win the match playing all the stipulated overs?

- (A) 6.1
- (B) 6.15
- (C) 6.22
- (D) 6.34
- (E) 6.44

Directions: For the question numbers 131 to 135, a pie graph is given. Study the graph carefully and answer the following questions and choose the best answer from the five alternatives given below the question

The pie-diagram below shows the percenatge of expenditures of Paul and Balu per month.



131. If both Balu and Paul get equal income, what would be the difference of their expenditures on all except Investments?

- (A) 1 of income
- (B) 0.50 of income
- (C) 0.01 of income
- (D) 0.05 of income
- (E) 2 of income

132. If Paul's income was 13,500, what would be his average expenditure on Investments, Rent, and Travelling?

- (A) 2540
- (B) 2125
- (C) 2490
- (D) 2650
- (E) 2700

133. If the salary of Balu is 15,000, what would be the expenditure on *Investments* and *Food*?

- (A) 5450
- (B) 4200
- (C) 4560
- (D) 5700
- (E) 5900

134. What is the sum of the angles subtended by Paul's expenditures on *Travel*, *Rent* and *Medical*?

- (A) 207.2°
- (B) 165.8°
- (C) 157.5°
- (D) 207°
- (E) 187.2°

135. If both Balu and Paul get equal income, what is the ratio of their expenditures on *Food and Clothing*?

- (A) 1 : 1
- (B) 1 : 2
- (C) 3 : 1
- (D) 2 : 3
- (E) 16 : 11

Directions: For the question numbers 136 to 140 certain tables are given. Study the tables carefully and answer the following questions and choose the best answer from the four alternatives given below the question

The following table describes the percentage increase in the usage of 4 wheelers in different cities over the previous years from 2002-2006.

Year →	2002	2003	2004	2005	2006
City ↓					
Bangalore	14	16	18	19	20
Chennai	14	16	17	18	18
Delhi	20	20	22	24	26
Hyderabad	12	13	14	16	18
Kolkata	10	10	10	10	10
Mumbai	10	16	14	16	18

Usage of 4 wheelers in major cities in 2001

City	In lakhs
Bangalore	2.0
Chennai	1.7
Delhi	2.2
Hyderabad	1.6
Kolkata	1.4
Mumbai	2.4

136. In the year 2003, the number of 4-wheelers in Mumbai is $x\%$ of the number of 4-wheelers in Delhi. What is the value of x ?

- (A) 86
- (B) 88
- (C) 97
- (D) 98
- (E) 78

137. How many more 4-wheelers did the citizens of Hyderabad have during 2003 compared to the previous year?

- (A) 30,146
- (B) 27,496
- (C) 25,496
- (D) 23,296

(E) 21,498

138. In Kolkata, the number of 4 wheelers in the year 2004 is exactly 70% of the number of 4 wheelers in the year 2007. How many 4 wheelers were there in 2007 in the city?

- (A) 2,44,320
 - (B) 2,66,200
 - (C) 2,12,460
 - (D) 2,56,210
 - (E) 2,65,114
-

139. How many 4 wheelers does the city Chennai have in the year 2003?

- (A) 2,24,808
 - (B) 2,23,316
 - (C) 2,10,248
 - (D) 1,80,456
 - (E) 1,74,555
-

140. What is the approximate ratio of 4 wheelers in Bangalore in the year 2005 to that in the year 2003?

- (A) 7 : 5
 - (B) 9 : 5
 - (C) 8 : 5
 - (D) 6 : 5
 - (E) 7 : 9
-