Directions (1-8): Read the following passage carefully and answer the questions given below it. Certain words have been printed in bold to help you locate them, while answering some of the questions

National Science Day, on February 28, is a moment to celebrate the progress that India has made in science and technology research, thanks to its science policies. It is also an opportunity to ponder about the problems that we face in research. As for the metrics on scientific research in India, there is the good news, the not-so-good news, and some hope. The good news: from the report published by the National Science Foundation of the U.S. in December 2019, India was the third largest publisher of peer-reviewed science and engineering journal articles and conference papers, with 135,788 articles in 2018. This milestone was achieved through an average yearly growth rate of 10.73% from 2008, which was greater than China's 7.81%. However, China and the United States had about thrice and twice the number, respectively, of India's publications.

The not-so-good news is that publications and mentioning from India are not impactful. From the report, in the top 1% of the most cited publications from 2016 (called HCA, or Highly Cited Articles), India's index score of 0.7 is lower than that of the U.S., China and the European Union. The other relevant report is on patents filed by India. The World Intellectual Property Organization (WIPO) through their Patent Cooperation Treaty (PCT) is the primary channel of filing international patent applications. In its report for 2019, WIPO says India filed a **modest** number of 2,053 patent applications. Compared to the 58,990 applications filed by China and 57,840 by the U.S., India has a long way to go. The Indian Government put in place the National Intellectual Property Rights (IPR) Policy in 2016 to "stimulate a dynamic, vibrant and balanced intellectual property rights system". One of the objectives is human capital development. The mission to **foster** innovation, replicate it at scale and commercialise it is a work in progress consequent to the policy.

India realised early as a republic the need to use science to become a welfare state. There have been four science policies till now, after 1947, with the draft of the fifth policy having been released recently. India's first science policy adopted in 1958, Scientific Policy Resolution, aimed to develop scientific enterprise and lay the foundation for scientific temper. It led to the establishment of many research institutes and national laboratories, and by 1980, India had developed advanced scientific infrastructure with sufficient scientific personnel. The focus in the second science policy, Technology Policy Statement, in 1983, was technological self-reliance and to use technology to benefit all sections of the society, while strengthening research in fields such as electronics and biotechnology. The Science and Technology Policy 2003, the first science policy after the economic liberalisation of 1991, aimed to increase investment in research and development and brought it to 0.7%. The Scientific and Engineering Research Board (SERB) was established to promote research.

In 2013, India's science policy included Innovation in its scope and was called Science, Technology and Innovation Policy. The focus was to be one of the top five worldwide scientific leaders, which India achieved through building partnerships with States, establishing more research and development centres and collaborating in international projects such as the Large Hadron Collider in the European Union. The draft of the Science, Technology and Innovation Policy 2020 (STIP2020), the fifth science policy that was released in January 2021 offers hope to research in India. It has an ambitious vision to "double the number of full-time equivalent (FTE) researchers, Gross Domestic Expenditure on R&D (GERD) and private sector contribution to the GERD every 5 years" and to "position India among the top three scientific superpowers in the next decade".

Q1. How is the celebration of National Science Day an opportunity for further development?
(a) On this day new resources are provided for more scopes in research.
(b) Science day motivates the researchers for learn further about science.
(c) The aim of science day is to spread awareness about science among people.
(d) This day provides an elbow room for the enhancement of research.
(e) None of these

Q2. Which of the following statements can be inferred from the passage about Indian articles?
(a) There is lack of knowledge among the writers about the ongoing events.
(b) The increasing number of articles is benefitting India's position in index.
(c) With the number of articles, the citation of publications should also be improved.
(d) Delay in the publication of India articles makes them worthless and less important.
(e) None of these

Q3. Which of the following is/are the drawback(s) of the absence of National Intellectual Property Rights (IPR) Policy?
(i) This will impact the increase in human economic value and development.
(ii) There will be a lack of innovations in writing due to replica.
(iii) This will make publications and innovations easier for writers.
(a) Only (i)
(b) Both (i) and (ii)
(c) Both (i) and (iii)
(d) Only (iii)
(e) All of these

Q4. Which of the five policies has been globalized according to the passage?
(a) First policy as it was emphasizing on scientific advance and development of scientific personnel.
(b) Second policy as that policy promoted the usage of science and independency.
(c) Third policy because with policy investment in science and technology was increased.
(d) Fourth policy because India was building overseas partner for worldwide leaders.
(e) None of these

Q5. As per passage, which of the following can be said about the Fifth Science Policy?
(a) The recent fifth policy is going to be revolutionary for the country with great development.
(b) The fifth policy is the same as earlier and doesn't have any new ground to work upon it.
(c) This will improve the scientific infrastructure and tools throughout the country.
(d) This is a great opportunity for the country to become a financial leader in the world.
(e) None of these

Q6. As per information given in the passage, which of the following statements is/are correct?
(i) Although number of articles is low, India has impressive articles.
(ii) WIPO is an international organization where many countries can file for patent right.
(iii) China has become an innovation titan with increasing number of filing.
(a) Only (i)
(b) Both (i) and (ii)
(c) Both (ii) and (iii)
(d) Only (iii)
(e) All of these

Q7. Among the given options, choose the word with the most similar meaning of the given word.
MODEST
(a) relic
(b) compact
(c) affirm
(d) passionate
(e) liberty

Q8. Among the given options, choose the word which is opposite in meaning of the given word.
FOSTER
(a) protect
(b) support
(c) suppress
(d) grant
(e) editing

Directions (9-13): Rearrange the following six sentences (A), (B), (C), (D), (E) and (F) in the proper sequence to form a meaningful paragraph and then answer the questions given below.

(A) It is a waste of time and money to send the typescript of a novel to a publisher who publishes no fiction, or poetry to one who publishes no verse, though all too often this is done.

(B) It is desirable to enclose the cost of return postage when submitting the typescript and finally it must be understood that although every reasonable care is taken of material in the Publishers' possession, responsibility cannot be accepted for any loss or damage thereto.

(C) A preliminary letter is appreciated by most publishers, and this should outline the nature and extent of the typescript and enquire whether the publisher would be prepared to read it.

(D) A suitable publisher should be chosen, by a study of his list of publications or an examination in the bookshops of the type of books in which he specializes.

(E) Care should be taken when submitting manuscripts to book publishers.

Q9. What should be the FOURTH sentence after rearrangement?
(a) F
(b) A
(c) B
(d) C
(e) D

Q10. What should be the THIRD sentence after rearrangement?
(a) E
(b) C
(c) A
(d) B
(e) F

Q11. What should be the LAST sentence after rearrangement?
(a) F
(b) C
(c) B
(d) A
(e) D

Q12. What should be the SECOND sentence after rearrangement?
(a) F
(b) B
(c) C
(d) D
(e) E

Q13. What should be the FIRST sentence after rearrangement?
(a) F
(b) D
(c) E
(d) B
(e) C

Directions (14-18): In the following questions, a sentence is divided into four parts. Choose the part of the sentence which may contain a grammatical error in it. If all the parts of the sentence are grammatically correct and contextually meaningful, choose option (E) i.e., "no error" as your answer choice.

Q14. On the upside (A) hospital care has been transformed (B) by major scientific and technological advances (C) in medicine. (D) / No error (E)
(a) On the upside
(b) care has been transformed
(c) by major scientific and technological advances
(d) in medicine
(e) No error

Q15. We are looking forward (A)/ to moving to/ (B) the new place, (C) / have decided on the new apartment last week. (D) / No error (E)
(a) We are looking forward
(b) to moving to
(c) the new place
(d) have decided on the new apartment last week
(e) No error

Q16. It is not the (A)/ faculty members (B) / but the headmaster (C) / who decide this issue. (D) / No error (E)
(a) It is not the Neither her
(b) faculty members
(c) but the headmaster
(d) who decide this issue
(e) No error

Q17. No sooner (A)/ the CEO admitted (B) / to his crimes (C) / than the employees resigned. (D) / No error (E)
(a) No sooner
(b) the CEO admitted
(c) to his crimes
(d) than the employees resigned
(e) No error

Q18. I already (A)/ completed my task (B) / by the time (C) / she asked me for it. (D) / No error. (E)
(a) I already
(b) completed my task
(c) by the time
(d) she asked me for it
(e) No error

Directions (19-25): Given below is a paragraph that has blank spaces. Corresponding to each blank, five options are given, out of which only one is appropriate. Choose the option that fits most suitably in the given blank making sentence grammatically and contextually correct.

Q19. If anyone were to peruse the _____ (19) newspapers, and listen to the different television channels in the country, one would get an _____ (20) that India is approaching a new 'gilded' era. Unfortunately, electoral politics in the country appears to be out of sync with this_____ (21). Threats to the conduct of orderly elections are increasing, more so in some States than perhaps in others, and must not be underestimated. Pressing the stop button is not a viable option as of now, as it is a _____ (22) of the pervasive decline in political attitudes and behaviour in the nation. Violence, money power, and communal attitudes tend to exercise a disproportionately greater _____ (23) on the outcome of elections as of now. A great deal of this is attributable to the prevailing belief that winning elections is the sine qua non of democratic politics, and the raison d'etre for any political party to exist. India's leading political party, which _____(24) holds power at the Centre and a majority of States, has converted this into a fine art, and makes no secret of its _____ (25) to pursue this path.
(a) standard
(b) numerous
(c) preserve
(d) defection
(e) absurdity

Q20. If anyone were to peruse the _____ (19) newspapers, and listen to the different television channels in the country, one would get an _____ (20) that India is approaching a new 'gilded' era. Unfortunately, electoral politics in the country appears to be out of sync with this_____ (21). Threats to the conduct of orderly elections are increasing, more so in some States than perhaps in others, and must not be underestimated. Pressing the stop button is not a viable option as of now, as it is a _____ (22) of the pervasive decline in political attitudes and behaviour in the nation. Violence, money power, and communal attitudes tend to exercise a disproportionately greater _____ (23) on the outcome of elections as of now. A great deal of this is attributable to the prevailing belief that winning elections is the sine qua non of democratic politics, and the raison d'etre for any political party to exist. India's leading political party, which _____(24) holds power at the Centre and a majority of States, has converted this into a fine art, and makes no secret of its _____ (25) to pursue this path.
(a) treasure
(b) insulate
(c) combat
(d) stability
(e) impression

Q21. If anyone were to peruse the _____ (19) newspapers, and listen to the different television channels in the country, one would get an _____ (20) that India is approaching a new 'gilded' era. Unfortunately, electoral politics in the country appears to be out of sync with this_____ (21). Threats to the conduct of orderly elections are increasing, more so in some States than perhaps in others, and must not be underestimated. Pressing the stop button is not a viable option as of now, as it is a _____ (22) of the pervasive decline in political attitudes and behaviour in the nation. Violence, money power, and communal attitudes tend to exercise a disproportionately greater _____ (23) on the outcome of elections as of now. A great deal of this is attributable to the prevailing belief that winning elections is the sine qua non of democratic politics, and the raison d'etre for any political party to exist. India's leading political party, which _____(24) holds power at the Centre and a majority of States, has converted this into a fine art, and makes no secret of its _____ (25) to pursue this path.
(a) direct
(b) disqualify
(c) contrary
(d) portrayal
(e) reluctant

Q22. If anyone were to peruse the _____ (19) newspapers, and listen to the different television channels in the country, one would get an _____ (20) that India is approaching a new 'gilded' era. Unfortunately, electoral politics in the country appears to be out of sync with this_____ (21). Threats to the conduct of orderly elections are increasing, more so in some States than perhaps in others, and must not be underestimated. Pressing the stop button is not a viable option as of now, as it is a _____ (22) of the pervasive decline in political attitudes and behaviour in the nation. Violence, money power, and communal attitudes tend to exercise a disproportionately greater _____ (23) on the outcome of elections as of now. A great deal of this is attributable to the prevailing belief that winning elections is the sine qua non of democratic politics, and the raison d'etre for any political party to exist. India's leading political party, which _____(24) holds power at the Centre and a majority of States, has converted this into a fine art, and makes no secret of its _____ (25) to pursue this path.
(a) delegate
(b) constitute
(c) acceptance
(d) complex
(e) reflection

Q23. If anyone were to peruse the _____ (19) newspapers, and listen to the different television channels in the country, one would get an _____ (20) that India is approaching a new 'gilded' era. Unfortunately, electoral politics in the country appears to be out of sync with this_____ (21). Threats to the conduct of orderly elections are increasing, more so in some States than perhaps in others, and must not be underestimated. Pressing the stop button is not a viable option as of now, as it is a _____ (22) of the pervasive decline in political attitudes and behaviour in the nation. Violence, money power, and communal attitudes tend to exercise a disproportionately greater _____ (23) on the outcome of elections as of now. A great deal of this is attributable to the prevailing belief that winning elections is the sine qua non of democratic politics, and the raison d'etre for any political party to exist. India's leading political party, which _____(24) holds power at the Centre and a majority of States, has converted this into a fine art, and makes no secret of its _____ (25) to pursue this path.
(a) accountable
(b) draft
(c) influence
(d) plunge
(e) betrayed

Q24. If anyone were to peruse the _____ (19) newspapers, and listen to the different television channels in the country, one would get an _____ (20) that India is approaching a new 'gilded' era. Unfortunately, electoral politics in the country appears to be out of sync with this_____ (21). Threats to the conduct of orderly elections are increasing, more so in some States than perhaps in others, and must not be underestimated. Pressing the stop button is not a viable option as of now, as it is a _____ (22) of the pervasive decline in political attitudes and behaviour in the nation. Violence, money power, and communal attitudes tend to exercise a disproportionately greater _____ (23) on the outcome of elections as of now. A great deal of this is attributable to the prevailing belief that winning elections is the sine qua non of democratic politics, and the raison d'etre for any political party to exist. India's leading political party, which _____(24) holds power at the Centre and a majority of States, has converted this into a fine art, and makes no secret of its _____ (25) to pursue this path.
(a) currently
(b) deliberately
(c) merely
(d) regularly
(e) movingly

Q25. If anyone were to peruse the _____ (19) newspapers, and listen to the different television channels in the country, one would get an _____ (20) that India is approaching a new 'gilded' era. Unfortunately, electoral politics in the country appears to be out of sync with this_____ (21). Threats to the conduct of orderly elections are increasing, more so in some States than perhaps in others, and must not be underestimated. Pressing the stop button is not a viable option as of now, as it is a _____ (22) of the pervasive decline in political attitudes and behaviour in the nation. Violence, money power, and communal attitudes tend to exercise a disproportionately greater _____ (23) on the outcome of elections as of now. A great deal of this is attributable to the prevailing belief that winning elections is the sine qua non of democratic politics, and the raison d'etre for any political party to exist. India's leading political party, which _____(24) holds power at the Centre and a majority of States, has converted this into a fine art, and makes no secret of its _____ (25) to pursue this path.

(a) ostensible
(b) determination
(c) fora
(d) detrimental
(e) executive

Directions (26-30): Two columns are given in each question and each column has three parts of a sentence. Choose the most suitable pair, which makes a grammatically correct and contextually coherent statement.

Q26. COLUMN I
A. the south-east London warehouse is run by British online supermarket Ocado
B. the Canadian village that set an all-time national heat record this week has been "devastated" by a fast-moving wildfire
C. fire alarm backfired on the student when surveillance cameras identified the culprit
COLUMN II
D. rescued over 400 migrants at sea in recent weeks has been seized by Italian authorities.
E. crazed shoppers ran over one another to get to the discounted products.
F. that engulfed the small town "within minutes" following an intense heat wave
(a) C-D, A-F
(b) A-F
(c) A-D, B-F, E-C
(d) B-F
(e) None of the above

Q27. COLUMN I
A. Pfizer-BioNTech vaccine appears to be less effective against infections caused by the Delta variant compared to other strains
B. carbon dioxide is called a "greenhouse gas" because of its ability to
C. as a fresh wave of infection continues to swell in the UK, concern is growing
COLUMN II
D. among health care experts over the impact of a relaxation of pandemic measures
E. trap solar radiation in the Earth's atmosphere like a blanket and heat up the planet
F. migrant workers who work long hours in close quarters to support families back home
(a) B-E, C-D
(b) A-D, C-F
(c) A-D, B-E
(d) B-F, A-D, C-E
(e) None of the above

Q28. COLUMN I

A. with a history spanning millennia across the Middle East, North Africa, and South Asia,

B. in order to cleanly and quickly remove wallpaper from a wall

C. we were in grouping 9 and the final set of passengers to board

COLUMN II

D. decision sparked an outcry from some corners of the population desperate to put the pandemic behind them

E. Pemex said an investigation has been launched into the incident

F. henna is steeped in tradition and cultural rituals

(a) C-D

(b) B-F, A-D

(c) C-D, A-F

(d) A-F

(e) None of the above

Q29. COLUMN I

A. robinhood has settled a wrongful death lawsuit filed by the family

B. a painting by rock icon David Bowie has sold for almost $88,000 at an online art auction after

C. the Hope orbiter, built by the United Arab Emirates, was able to use its

COLUMN II

D. someone picked it up for a few bucks at a donation center at an Ontario landfill

E. scientific instruments to capture an improved view of the red planet's night lights

F. he has morals and never robs anyone who would suffer because of the theft

(a) A-F, C-D, B-E

(b) B-D, C-E

(c) C-F, A-D

(d) C-E, B-F

(e) None of the above

Q30. COLUMN I

A. many cannot produce enough infection-fighting cells to fend off the coronavirus

B. ceremonial role although the Queen must approve the appointment after seeking recommendations from the Canadian government

C. a more transmissible and possibly more dangerous strain, now makes up more than half of all new infections in the United States

COLUMN II

D. blaze on the surface of the Gulf of Mexico resembling a large "eye of fire" has been brought under control

E. United Kingdom began to emerge from one of the world's longest and most stringent lockdowns

F. but researchers are testing one therapy that may help called monoclonal antibodies

(a) A-E, B-F

(b) B-D, C-E

(c) A-F

(d) C-D

(e) None of the above

Directions (31-35): Read the data carefully and answer the following questions.

People take subscription of Sonysix for watching three games Hockey, Cricket and Football. The ratio of male who take subscription for watching Hockey to that of for Cricket is 5 : 6. Females who take subscription for watching Cricket are 1000 less than the females who take subscription for watching Hockey. Male and Female who take subscription for watching Football are 16750 and 18500 respectively. Total male who take subscription for watching Cricket are 4000 less than total female who take subscription for watching cricket. Average of male and female who take subscription for watching cricket is 17000.

Q31. Total male who take subscription for watching Cricket & Hockey together are how many more/less than total female who take subscription for watching Football & Cricket together?
(a)10000
(b)12000
(c)5000
(d)8000
(e)7000

Q32. Total male who take subscription for watching Football is what percent more than total male who take subscription for watching cricket?
(a) $18\frac{2}{3}\%$
(b) $8\frac{2}{3}\%$
(c) $11\frac{2}{3}\%$
(d) $15\frac{2}{3}\%$
(e) $12\frac{2}{3}\%$

Q33.   What is the average of male who take subscription for watching Hockey, Football and Cricket?
(a)14500
(b)13600
(c)11750
(d)14750
(e)15500

Q34. If total female who take subscription for watching Tennis are 40% of total female who take subscription for watching Hockey, Football and Cricket together, then how many females who take subscription for watching Tennis?
(a)11500
(b)12500
(c)23000
(d)25000
(e)None of these

Q35. Total male who take subscription for watching Hockey, Football and Cricket together are how many more/less than total female who take subscription for watching Hockey, Football and Cricket together?
(a)15000
(b)13250
(c)10200
(d)15500
(e)10000

Directions (36-41): What approximate value should come in the place of the question mark '?' in the following questions ? (You are not expected to calculate the exact value.)

Q36. $18.09 \div 27.02 \times 8.999 + (17.979)^2 = ?$
(a) 310
(b) 330
(c) 318
(d) 350
(e) 343

Q37. 120.09% of $854.8 + 179\%$ of $555.4 = ?^2$
(a) 55
(b) 40
(c) 45
(d) 50
(e) 35

Q38. $(4.04)^3 + (15.96)^{\frac{1}{4}} + (8.08)^2 = ? + 117.89$
(a) 12
(b) 18
(c) 21
(d) 15
(e) 13

Q39. $\frac{4}{7}\%$ of $67199 - \frac{2}{5}$ of $644.96 = ?$
(a) 132
(b) 140
(c) 144
(d) 126
(e) 120

Q40. $(14.96)^2 - \sqrt{1155} + \sqrt[8]{126} = ?^2$
(a) 9
(b) 14
(c) 20
(d) 18
(e) 7

Q41. $7.99^3 \times 2.99^4 \div 11.98^2 + ?^2 = 17.03^2$
(a) 14
(b) 19
(c) 1
(d) 8
(e) 4

Directions (42-45): What should come in place of question mark (?) in the following questions?

Q42. 6, 4, 5, 11, ?, 189
(a) 39
(b) 45
(c) 34
(d) 36
(e) 41

Q43. 80, 68, 62, 56, ?, 29
(a) 43
(b) 44
(c) 45
(d) 46
(e) 47

Q44. 117, 140, 169, 200, ?, 278
(a) 235
(b) 237
(c) 239
(d) 241
(e) 243

Q45. ?, 8, 14, 38 ,98 ,218
(a) 2
(b) 6
(c) 10
(d) 8
(e) 4

Q46. A man has 250 l milk and each time he takes out 25 l of milk and replaced it with same quantity of water. If he repeats this process thrice then find quantity of milk in final solution (in liter).
(a) 162.225
(b) 182.25
(c) 142.25
(d) 122.25
(e) 102.25

Q47. Ratio of volume of two spheres is 27 : 64 and radius of larger sphere is 14 cm. If radius of smaller sphere is 7.5 cm less than side of a square, then find the area of that square (in cm²)?
(a) 225
(b) 484
(c) 625
(d) 324
(e) 361

Q48. Adarsh is two years older than Ayush and ratio of present age of Adarsh and Sameer is 13 : 15 and. If ratio between age of Ayush & Sameer after three years is 9 : 11, then find the difference between Adarsh age after five years & Sameer's present age (in year)?
(a) 1
(b) 2
(c) 3
(d) 4
(e) 5

Q49. Veer, Aayush and Shivam entered into a business and invested in the ratio of a : 12 : 15 respectively. If time period for which Veer, Aayush and Shivam invested is in the ratio of 12: 10 : b respectively and the profit share of Veer, Aayush and Shivam is same, then find 'a-b'?
(a) 4
(b) 3
(c) 5
(d) 2
(e) None of these

Q50. A shopkeeper gives one article free at purchase of every four article and also allows 10% discount. If he wants to earn 8% profit then find market price is what percent of cost price of each article.
(a) 150%
(b) 50%
(c) 100%
(d) 75%
(e) 20%

Q51. Upstream speed of a boat is $62\frac{1}{2}$%of downstream speed of that boat and boat takes 1.5 hours more to cover a distance of 65 km in upstream than that in still water. Find speed of stream?
(a) 6 km/hr
(b) 3 km/hr
(c) 5 km/hr
(d) 4 km/hr
(e) 3.5 km/hr

Q52. Hemant invest 1800 Rs at rate of 5% and x% per annum in ratio 4 : 5 respectively. At the end of 2 year, he will get total Rs 160 as SI. Find value of x
(a) 4%
(b) 6%
(c) 8%
(d) 4.5%
(e) 3%

Q53. A train of length 1.6 km crosses a pole in 3 min. Another train coming from opposite direction with speed of 50 km/h can cross first train in $2\frac{8}{41}$ min. Find length of train which has speed of 50 km/hr.
(a) 1.4 km
(b) 1.2 km
(c) 1.8 km
(d) 3 km
(e) 2 km

Q54. Manoj monthly income is Rs. 5000. Due to 10% increase in his income his expenditure is increased by 18% and savings are reduced by 2%. Find his initial expenditure. (In Rs.)
(a) 3480
(b) 3040
(c) 3000
(d) 3140
(e) 3080

Q55. The average weight of seven students in a class is 26.5 kg. When a new student joins them, the average weight increases by 2.5 kg.Find the weight of the new student?(in kg)
(a) 46.5
(b) 43.5
(c) 48.5
(d) 39.5
(e) 41.5

Directions (56-60): Study the line chart and table given carefully and answer the following questions. Line chart gives information about male and female employees in 5 different companies (A, B, C, D & E) and table shows percentage of employees (male + female) promoted in these 5 companies.
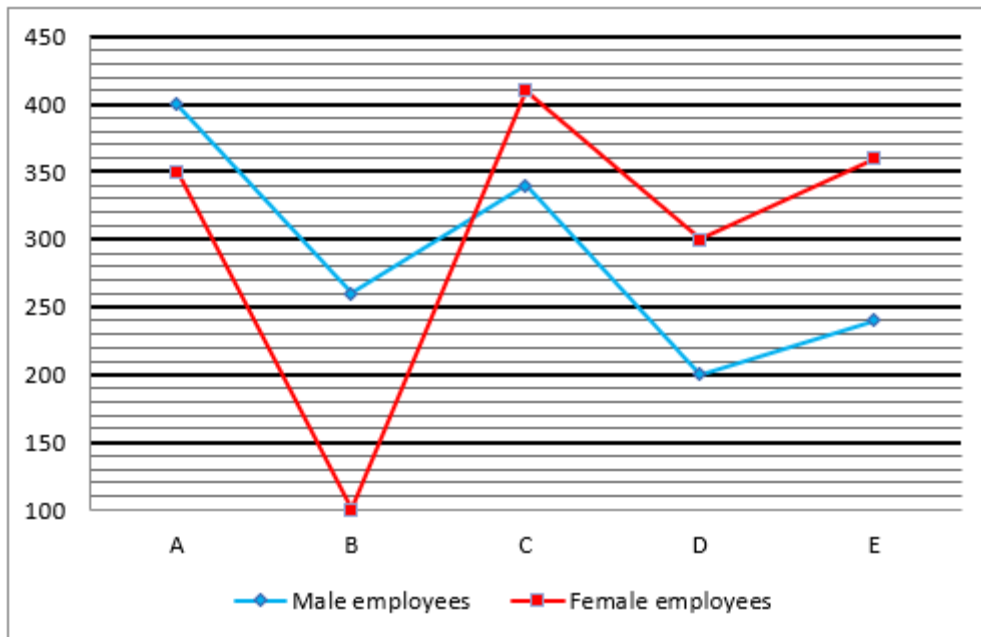
Company	% of employees promoted
A	40%
B	80%
C	60%
D	80%
E	50%

Note – Total employees in a company = Total (male + female) employees in that company.

Q56. If ratio of male to female employees who are promoted in A is 2 : 3 and male employees who are promoted in B are 100% more than male employees who are promoted in A, then find number of female employees who are not promoted in A & B together.
(a) 256
(b) 218
(c) 222
(d) 206
(e) 184

Q57. Find ratio of promoted employees in C & E together to average number of employees in A & D.
(a) 6 : 5
(b) 3 : 2
(c) 9 : 7
(d) 11 : 5
(e) 5 : 2

Q58. If **male employees who are promoted in E are equal to male employees in D and female employees who are promoted in C are 60% more than that of in E, then find male employees who are promoted in C & E together are what percent of total employees in D?**
(a) 92%
(b) 87%
(c) 98%
(d) 80%
(e) 82%

Q59. Employees who are promoted in A, B & D together are how much more or less than female employees in B, C & D together?
(a) 196
(b) 172
(c) 190
(d) 184
(e) 178

Q60. If age of 21% of the promoted employees in E is more than 50 years, then find promoted employees in E whose age is less than or equal to 50 years are what percent less than male employees in B & E together?
(a) 64.6%
(b) 52.6%
(c) 60.6%
(d) 68.6%
(e) 65.6%

Directions (61-65):- Pie charts given below gives percentage distribution of two type of products (type A and type B) sold by six employees (P, Q, R, S, T and U) of a company. Total no. type A and type B products sold are in ratio 2:5.
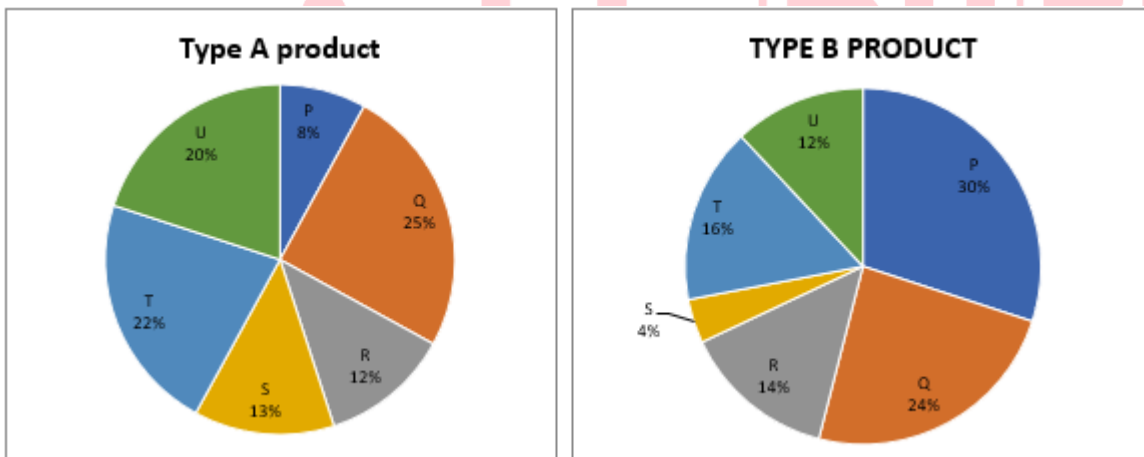
Q61. No. of type A product sold by P are what percent of no. of type B product sold by S?
(a) 75%
(b) 80%
(c) 60%
(d) 90%
(e) 100%

Q62. If type A product sold by Q is 240 less than type B product sold by T, then find type A product sold by U.
(a) 400
(b) 320
(c) 280
(d) 360
(e) None of these.

Q63. What is the ratio of no. of type A products sold by R and S together to no. of type B products sold by T and U together?
(a) 5:14
(b) 7:5
(c) 5:7
(d) 2:3
(e) 11:14

Q64. If no. of type A product sold by T are 15400, then find no. of type B product sold by U are how much more or less than no. of type A product sold by S?
(a) 15000
(b) 11900
(c) 15900
(d) 15700
(e) 12000

Q65. If average no. of type B products sold by each employee are 5200, find total no. of type A product sold by Q and U together?
(a) 5406
(b) 5607
(c) 5660
(d) 5506
(e) 5616

Directions (66-70): Study the following information carefully and answer the questions given below:
Eight persons A to H are sitting at a square table. Four persons are sitting at four corners of the table while the rest four are sitting at each side of the table. The persons who sit at the corner of the table are facing the centre of the table and the persons who sit at the middle of the table are facing outside of the table. E sits 3rd to the right of C. G is an immediate neighbour of C and sits 2nd to the right of H. C faces inside. B sits opposite to D who sits 2nd to the left of A. F does not faces H.

Q66. What is the position of A with respect to H?
(a) Third to the right
(b) Third to the left
(c) Immediate right
(d) Immediate left
(e) None of these

Q67. How many persons sit between A and F when counted to the left of A?
(a) None
(b) Two
(c) Six
(d) Three
(e) Four

Q68. Who among the following person is facing A?
(a) F
(b) B
(c) E
(d) D
(e) None of these

Q69. If E and G interchange their positions then who sits immediate left of C?
(a) E
(b) G
(c) D
(d) F
(e) None of these

Q70. How many persons sit between D and G when counted to the left of D?
(a) Three
(b) Two
(c) None
(d) Four
(e) Five

Directions (71-75): Study the following information carefully and answer the questions given below
In a certain code language:
"Driving fine in car" is coded as "gf yx qr rq"
"Car parking penalize now" is coded as "rq lp mf pu"
"Car parking in the ground" is coded as "rq lp qr rt df"
"Police penalize driving breakers" is coded as "vl rf mf gf"

Q71. What is the code for "Parking" in the given code language?
(a) lp
(b) gf
(c) vl
(d) rf
(e) None of these

Q72. What is the code for "police penalize" in the given code language?
(a) vl rf
(b) mf vl
(c) pu rf
(d) rf mf
(e) Either mf vl or rf mf

Q73. What is the code for "Driving now" in the given code language?
(a) gf pu
(b) qr pu
(c) vl lp
(d) qr df
(e) gf qr

Q74. The code "df" is coded as which of the following word?
(a) driving
(b) the
(c) ground
(d) Either the or ground
(e) Either driving or ground

Q75. What may be the possible code for "parking around" in the given code language?
(a) rt df
(b) yx qr
(c) lp rg
(d) pu rf
(e) rt gf

Directions (76-80): Study the following information carefully and answer the given questions:
Eight students E, F, G, H, J, K, L and M are studying in three different universities viz. BHU, JNU and DU, at least two students are studying in the same university but not more than three. Each of them is doing different degrees viz. M.Sc., M.A. and M. Com, at least two students are doing same degree but not more than three.
L is doing M.Sc. H is doing M.A. and studying in JNU with only J. E and F are not studying in DU and doing the same degree but not M.A. G is doing M.Sc. and studying in DU with M who is doing M.A. L and G are not studying in the same university. K is not doing M.Com. J is doing M.Sc.

Q76. Which of the following combinations is correct?
(a) E – M.Sc.
(b) F – M.Com
(c) K – M.Sc.
(d) F – M.Sc.
(e) None of these

Q77. Who among the following are doing M.A.?
(a) M, K
(b) H, K
(c) Both (a) and (b)
(d) E, M
(e) None of these

Q78. Who among the following students are studying in BHU?
(a) E, K
(b) F, K
(c) K, L
(d) E, F
(e) None of these

Q79. In which of the following university K is studying?
(a) BHU
(b) JNU
(c) DU
(d) Cannot determined
(e) None of these

Q80. Four of the following five belong to a group in a certain way, find which of the one does not belong to that group?
(a) E – BHU – M.Sc.
(b) L – BHU – M.Sc.
(c) F – JNU – M.Com
(d) K – DU – M.Sc.
(e) E – JNU – M.Com

Directions (81-83): Study the following information carefully and answer the questions given below:
There are seven persons P, Q, R, S, T, U, and V in a family. There are two are married couples and three generations. V is the sister-in-law of R. S is daughter of T. T is daughter of P. U and Q are siblings and they are of different gender. S is the only Granddaughter of R. P is a male member of a family. Q is married to T.

Q81. What is the relation of S with respect to U?
(a) daughter in law
(b) Daughter
(c) Niece
(d) Cousin
(e) Mother

Q82. How many female members are in the family?
(a) Two
(b) Three
(c) Four
(d) One
(e) Five

Q83. What is the relation of R with respect to T?
(a) Son
(b) Daughter
(c) Sister
(d) Mother
(e) Father

Directions (84-87): Study the following information carefully and answer the questions given below.
Seven persons have different designations in a company i.e. General Manager (GM), Deputy General Manager (DGM), Assistant General Manager (AGM), Manager, Assistant Manager (AM), Probationary Officer (PO), and Clerk. The order of seniority is the same as given above i.e. GM is the senior-most designation and Clerk is the junior-most designation.
M is senior to the one who is the manager. More than two designations are there between M and N who is not PO. There is one designation is between N and H. There are as many designations between M and S as between S and H. S is not DGM. One designation is there between S and P who is senior to R. Q is junior to R.

Q84. How many persons are senior to Q?
(a) Two
(b) Four
(c) Three
(d) Five
(e) More than five

Q85. Who among the following persons is the AGM of the company?
(a) R
(b) S
(c) N
(d) P
(e)None of these

Q86. Who among the following persons is the AM of the company?
(a) S
(b) R
(c) N
(d) P
(e)None of these

Q87. Which of the following combination is correctly matched?
(a) H-PO
(b) P-DGM
(c) S-AGM
(d) N-Clerk
(e) None is correct

Directions (88-92): In each question below are given two/three statements followed by two conclusions numbered I and II. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts. Give answer-

Q88. Statements:
Some prime are consonant.
All consonant are cup.
No cup is a cap.
Conclusions:
I. Some consonant being cap is a possibility.
II. All cup being prime is a possibility.
(a) if only conclusion I follows.
(b) if only conclusion II follows.
(c) if either conclusion I or II follows.
(d) if neither conclusion I nor II follows,
(e) if both conclusions I and II follow.

Q89. Statements:
Some prime are consonant.
All consonant are cups.
No cup is a cap.
Conclusions:
I. No cap is consonant.
II. Some prime are not caps.
(a) if only conclusion I follows.
(b) if only conclusion II follows.
(c) if either conclusion I or II follows.
(d) if neither conclusion I nor II follows,
(e) if both conclusions I and II follow.

Q90. Statements:
All number is digits.
No digit is a numeric.
Conclusions:
I. Some number is not numeric.
II. No number is a numeric.
(a) if only conclusion I follows.
(b) if only conclusion II follows.
(c) if either conclusion I or II follows.
(d) if neither conclusion I nor II follows,
(e) if both conclusions I and II follow.

Q91. Statements:
No foil is a wrap.
Some wraps are tabs.
Conclusions:
I. Some tabs are not foils.
II. All foil being tabs is a possibility.
(a) if only conclusion I follows.
(b) if only conclusion II follows.
(c) if either conclusion I or II follows.
(d) if neither conclusion I nor II follows,
(e) if both conclusions I and II follow.

Q92. Statements:
Some box are book.
All book are pencils.
Conclusions:
I. All box being pencils is a possibility.
II. Some pencils are books
(a) if only conclusion I follows.
(b) if only conclusion II follows.
(c) if either conclusion I or II follows.
(d) if neither conclusion I nor II follows,
(e) if both conclusions I and II follow.

Q93. The position of how many alphabets will remain unchanged if each of the alphabets in the word 'MULTINATIONAL' is arranged in alphabetical order from left to right?
(a) One
(b) Three
(c) Two
(d) Four
(e) None

Directions (94-98): Study the following information carefully and answer the questions given below:
Seven persons were born in seven different years i.e., 2000, 2002, 2004, 2005, 2008, 2011 and 2015. Their age is calculated with respect to 2021.
More than three persons were younger to C. Only one person was born between C and P. P was born before I. The age difference between P and C is same as the age difference between Y and O. O is the youngest person. M was born just before K.

Q94. Who among the following person was born immediately after C?
(a) M
(b) The one who is 13 years old
(c) Y
(d) The one who is 19 years old
(e) None of these

Q95. Who among the following person was born in 2011?
(a) K
(b) Y
(c) I
(d) M
(e) None of these

Q96. Number of persons born after Y is the same as the number of persons born before_____.
(a) P
(b) M
(c) I
(d) K
(e) O

Q97. Which of the following statement is true?
I. Three persons were born between M and Y
II.P was born in 2000
III.K is 19 years old.
(a) Only II
(b) Only III
(c) Both II and III
(d) Both I and III
(e) All I, II and III

Q98. Which of the following pair of persons was born immediately before and immediately after I respectively?
(a) M, Y
(b) P, C
(c) K, O
(d) C, M
(e) Y, M

Q99. In a row of friends facing north, Ram is 12th to the right of Shyam who is 23rd from the left end. If Mohan who is 19th from the right end, is 5th to the left of Ram, then how many friends are there in the row?
(a) 46
(b) 42
(c) 45
(d) 48
(e) 51

Q100. If in the number 524393156749, position of the 1st digit is interchanged with the position of the 2nd digit and 3rd digit is interchanged with the 4th digit and so on. Then which number will be the 5th from the left end?
(a) 3
(b) 6
(c) 9
(d) 1
(e) 5

Solutions

S1. Ans.(d)
Sol. Option (d) is correct choice which can be inferred from the first paragraph which mentions, "It is also an opportunity to ponder about the problems that we face in research"
Elbow room means enough space to move or act freely.

S2. Ans.(c)
Sol. Option (c) is correct choice that can be inferred from the first and second paragraphs which mention, "This milestone was achieved through an average yearly growth rate of 10.73% from 2008, which was greater than China's 7.81%. However, China and the United States had about thrice and twice the number, respectively, of India's publications. The not-so-good news is that publications and mentioning from India are not impactful." Hence, the correct choice is option (c).

S3. Ans.(c)
Sol. Among the three statements only statement (i) and statement (iii) are correct with reference to the second paragraph which mentions, "One of the objectives is human capital development. The mission to foster innovation, replicate it at scale and commercialize it is a work in progress consequent to the policy."

S4. Ans.(d)
Sol. Refer to the last paragraph which mentions, "In 2013, India's science policy included Innovation in its scope and was called Science, Technology and Innovation Policy. The focus was to be one of the top five worldwide scientific leaders, which India achieved through building partnerships with States, establishing more research and development centres and collaborating in international projects such as the Large Hadron Collider in the European Union." Hence, the correct choice is option (d).

S5. Ans.(a)
Sol. Refer to the last lines of last paragraph which mention, "The draft of the Science, Technology and Innovation Policy 2020 (STIP2020), the fifth science policy that was released in January 2021 offers hope to research in India. It has an ambitious vision to "double the number of full-time equivalent (FTE) researchers, Gross Domestic Expenditure on R&D (GERD) and private sector contribution to the GERD every 5 years" and to "position India among the top three scientific superpowers in the next decade". Hence, with these lines we can infer option (a) is correct choice.

S6. Ans.(c)
Sol. Statement (ii) and statement (iii) are correct as per the passage.
For statement (ii) and statement (iii), refer to the second paragraph which mentions, "The World Intellectual Property Organization (WIPO) through their Patent Cooperation Treaty (PCT) is the primary channel of filing international patent applications. In its report for 2019, WIPO says India filed a modest number of 2,053 patent applications. Compared to the 58,990 applications filed by China and 57,840 by the U.S., India has a long way to go." From these lines we can infer that many countries filed with WIPO.
For statement (i), refer to the second paragraph which mentions, "The not-so-good news is that publications and mentioning from India are not impactful." From this line we can infer that statement (i) is incorrect.

S7. Ans.(b)
Sol. The given word 'MODEST' means 'not very large' and 'compact' is synonym which means 'small'.
Relic means an object, tradition, etc.
Affirm means to say formally or clearly that something is true.
Liberty means freedom.
Passionate means having, showing, or caused by strong feelings or beliefs.

S8. Ans.(c)
Sol. The given word 'foster' means 'to help or encourage the development of something' and 'suppress' is antonym which means 'to stop something by using force'.
Grant means to (officially) give somebody what he/she has asked for.
Protect means keep safe from harm or injury.
Editing means prepare (written material) for publication by correcting, condensing, or otherwise modifying it.

S9. Ans.(d)
Sol. The fourth sentence in the right order will be sentence (C): *A preliminary letter is appreciated by most publishers, and this should outline the nature and extent of the typescript and enquire whether the publisher would be prepared to read it.*
After reading all the given sentences, we can conclude that the first sentence is (E) as it introduces us to the topic (to be careful while sending manuscripts to the publishers) and about what is to follow in the passage, i.e. tips for writers to get their books published by responsible publishers. This is followed by sentence (D) which explains further *how* this can be achieved, what actions does a writer need to do while selecting s suitable publisher for the publication of their book. The sentence that follows this is sentence (A) as it describes what not to do after the research is done as mentioned in the previous sentence (D). Next sentence in the correct order would be sentence (C) as it suggests the next course of action to be undertaken after the selection of a publisher is done, i.e., to send a letter describing all the necessary details like what the book is about, etc. The last sentence is sentence (B) as it describes the end of the process (return of the transcript to the writer) and sends a caution that the publisher should be made aware of the cost while sending the transcript back and also gives the message that despite taking care of the material, the publisher would not be liable for any damage done in the process.

S10. Ans.(c)
Sol. The third sentence in the right order will be sentence (A)*: It is a waste of time and money to send the typescript of a novel to a publisher who publishes no fiction, or poetry to one who publishes no verse, though all too often this is done.*
After reading all the given sentences, we can conclude that the first sentence is (E) as it introduces us to the topic (to be careful while sending manuscripts to the publishers) and about what is to follow in the passage, i.e. tips for writers to get their books published by responsible publishers. This is followed by sentence (D) which explains further *how* this can be achieved, what actions does a writer need to do while selecting s suitable publisher for the publication of their book. The sentence that follows this is sentence (A) as it describes what not to do after the research is done as mentioned in the previous sentence (D). Next sentence in the correct order would be sentence (C) as it suggests the next course of action to be undertaken after the selection of a publisher is done, i.e., to send a letter describing all the necessary details like what the book is about, etc. The last sentence is sentence (B) as it describes the end of the process (return of the transcript to the writer) and sends a caution that the publisher should be made aware of the cost while sending the transcript back and also gives the message that despite taking care of the material, the publisher would not be liable for any damage done in the process.

S11. Ans.(c)
Sol. The last sentence in the right order will be sentence (B): *It is desirable to enclose the cost of return postage when submitting the typescript and finally it must be understood that although every reasonable care is taken of material in the Publishers' possession, responsibility cannot be accepted for any loss or damage thereto.*
After reading all the given sentences, we can conclude that the first sentence is (E) as it introduces us to the topic (to be careful while sending manuscripts to the publishers) and about what is to follow in the passage, i.e. tips for writers to get their books published by responsible publishers. This is followed by sentence (D) which explains further *how* this can be achieved, what actions does a writer need to do while selecting s suitable publisher for the publication of their book. The sentence that follows this is sentence (A) as it describes what not to do after the research is done as mentioned in the previous sentence (D). Next sentence in the correct order would be sentence (C) as it suggests the next course of action to be undertaken after the selection of a publisher is done, i.e., to send a letter describing all the necessary details like what the book is about, etc. The last sentence is sentence (B) as it describes the end of the process (return of the transcript to the writer) and sends a caution that the publisher should be made aware of the cost while sending the transcript back and also gives the message that despite taking care of the material, the publisher would not be liable for any damage done in the process.

S12. Ans.(d)
Sol. The second sentence in the right order will be sentence (D): *A suitable publisher should be chosen, by a study of his list of publications or an examination in the bookshops of the type of books in which he specializes.*
After reading all the given sentences, we can conclude that the first sentence is (E) as it introduces us to the topic (to be careful while sending manuscripts to the publishers) and about what is to follow in the passage, i.e. tips for writers to get their books published by responsible publishers. This is followed by sentence (D) which explains further ***how*** this can be achieved, what actions does a writer need to do while selecting s suitable publisher for the publication of their book. The sentence that follows this is sentence (A) as it describes what not to do after the research is done as mentioned in the previous sentence (D). Next sentence in the correct order would be sentence (C) as it suggests the next course of action to be undertaken after the selection of a publisher is done, i.e., to send a letter describing all the necessary details like what the book is about, etc. The last sentence is sentence (B) as it describes the end of the process (return of the transcript to the writer) and sends a caution that the publisher should be made aware of the cost while sending the transcript back and also gives the message that despite taking care of the material, the publisher would not be liable for any damage done in the process.

S13. Ans.(c)
Sol. The first sentence in the right order will be sentence (E): *Care should be taken when submitting manuscripts to book publishers.*
After reading all the given sentences, we can conclude that the first sentence is (E) as it introduces us to the topic (to be careful while sending manuscripts to the publishers) and about what is to follow in the passage, i.e. tips for writers to get their books published by responsible publishers. This is followed by sentence (D) which explains further ***how*** this can be achieved, what actions does a writer need to do while selecting s suitable publisher for the publication of their book. The sentence that follows this is sentence (A) as it describes what not to do after the research is done as mentioned in the previous sentence (D). Next sentence in the correct order would be sentence (C) as it suggests the next course of action to be undertaken after the selection of a publisher is done, i.e., to send a letter describing all the necessary details like what the book is about, etc. The last sentence is sentence (B) as it describes the end of the process (return of the transcript to the writer) and sends a caution that the publisher should be made aware of the cost while sending the transcript back and also gives the message that despite taking care of the material, the publisher would not be liable for any damage done in the process.

S14. Ans.(e)
Sol. The above sentence is grammatically correct. Hence, the answer will be option (e): *no error.*

S15. Ans.(d)
Sol. The correction to be made is: "having decided on the new apartment last week". The second part of the sentence is a participial phrase, which is a group of words consisting of a participle and the modifier(s) and/or (pro)noun(s) or noun phrase(s) that function as the direct object(s), indirect object(s), or complement(s) of the action or state expressed in the participle.

S16. Ans.(d)
Sol. The error lies in part (d) of the sentence.
If the sentence compounds a positive and a negative subject and one is plural, the other singular, the verb should agree with the positive subject. Hence, 'decide' should be replaced by 'decides'.

S17. Ans.(b)
Sol. The error lies in part (b) of the sentence. If 'hardly', 'scarcely', 'barely' and 'no sooner' are in the initial position, the subject and auxiliary are inverted. Thus, the correct phrase should be "No sooner had CEO admitted…"

S18. Ans.(a)
Sol. The error lies in part (a) of the sentence. Since the sentence is in past perfect tense, the correct phrase should be "I had already…"

S19. Ans.(b)
Sol. The above passage talks about the other means and tactics used by politicians to win an election. Hence, the correct word will be 'numerous' which means 'many'. All other words are contextually and grammatically incorrect.
Defection means conscious abandonment of allegiance or duty.
Absurdity means extremely unreasonable.
Standard means a level of quality or attainment.
Preserve means to keep alive, intact, or free from decay.

S20. Ans.(e)
Sol. The above passage talks about the other means and tactics used by politicians to win an election. Hence. the correct word will be 'impression' which means 'an idea, a feeling or an opinion that you get about somebody/something'. All other words are contextually and grammatically incorrect.
Treasury means a collection of very valuable objects, for example gold, silver, jewellery, etc.
Insulate means to protect something with a material that prevents electricity, heat or sound from passing through.
Combat means a fight, especially in war.
Stability means the quality, state, or degree of being stable.

S21. Ans.(d)
Sol. The above passage talks about the other means and tactics used by politicians to win an election. Hence, the correct word will be 'portrayal' which means 'description and image'. All other words are contextually and grammatically incorrect.
Contrary means completely different; opposite.
Reluctant means not wanting to do something because you are not sure it is the right thing to do.
Direct means without intervening factors or intermediaries.
Disqualify means declare (someone) ineligible for an office, activity, or competition because of an offence or infringement.

S22. Ans.(e)
Sol. The above passage talks about the other means and tactics used by politicians to win an election. Hence, the correct word will be 'reflection' which means 'a thing that shows what somebody/something is like'. All other words are contextually and grammatically incorrect.
Delegate means a person who has been chosen to speak or take decisions for a group of people, especially at a meeting.
Constitute means to be one of the parts that form something.
Acceptance means the action of consenting to receive or undertake something offered.
Complex means consisting of many different and connected parts.

S23. Ans.(c)
Sol. The above passage talks about the other means and tactics used by politicians to win an election. Hence, the correct word will be 'influence' which means 'the power to affect, change or control somebody/something'. All other words are contextually and grammatically incorrect.
Accountable means required or expected to justify actions or decisions; responsible.
Draft means a piece of writing, etc.
Plunge means to jump, drop or fall suddenly and with force.
Betrayed means to give information about somebody/something to an enemy; to make a secret known.

S24. Ans.(a)
Sol. The above passage talks about the other means and tactics used by politicians to win an election. Hence, the correct word will be 'currently' which means 'at the present time'. All other words are contextually and grammatically incorrect.

S25. Ans.(b)

Sol. The above passage talks about the other means and tactics used by politicians to win an election. Hence, the correct word will be 'determination' which means 'the quality of having firmly decided to do something, even if it is very difficult'. All other words are contextually and grammatically incorrect.

Ostensible means seeming or stated to be real or true, but not necessarily real or true.

Fora means a place or meeting where people can exchange and discuss ideas.

Detrimental means harmful.

Executive means concerned with managing, making plans, decisions, etc.

S26. Ans.(d)

Sol. Among the given phrases, only B-F can be connected to make grammatically and contextually correct sentence therefore correct choice is option (d).

The sentence, thus, formed is: (B-F) *The Canadian village that set an all-time national heat record this week has been "devastated" by a fast-moving wildfire that engulfed the small town "within minutes" following an intense heat wave.*

S27. Ans.(a)

Sol. Among the given phrases, C-D and B-E can be connected to make grammatically and contextually correct sentences therefore correct choice is option (a).

The sentences, thus, formed are: (B-E) *Carbon dioxide is called a "greenhouse gas" because of its ability to trap solar radiation in the Earth's atmosphere like a blanket and heat up the planet.*

(C-D) *As a fresh wave of infection continues to swell in the UK, concern is growing among health care experts over the impact of a relaxation of pandemic measures.*

S28. Ans.(d)

Sol. Among the given phrases, only mentioned in option (d): A-F can be joined to make a contextually and grammatically correct sentence.

The sentence, thus, formed is: (A-F) *With a history spanning millennia across the Middle East, North Africa, and South Asia, henna is steeped in tradition and cultural rituals.*

S29. Ans.(b)

Sol. Among the given phrases, only mentioned in option (b): B-D, C-E can be joined to make contextually and grammatically correct sentences.

The sentences, thus, formed are: (B-D) *A painting by rock icon David Bowie has sold for almost $88,000 at an online art auction after someone picked it up for a few bucks at a donation center at an Ontario landfill.*

(C-E) *The Hope orbiter, built by the United Arab Emirates, was able to use its scientific instruments to capture an improved view of the red planet's night lights.*

S30. Ans.(c)

Sol. Among the given phrases, only the ones mentioned in option (c): A-F can be joined to make a contextually and grammatically correct sentence.

The sentence, thus, formed is: *Many cannot produce enough infection-fighting cells to fend off the coronavirus but researchers are testing one therapy that may help called monoclonal antibodies.*

S31. Ans.(a)
Sol.
Let the number of males and females who take subscription for watching Cricket be x and $x + 4000$.
$$\frac{x + x + 4000}{2} = 17000$$
$x + 2000 = 17000$
$x = 15000$

	Males	Females
Hockey	$\frac{5}{6} \times 15000 = 12500$	$19000 + 1000 = 20000$
Football	16750	18500
Cricket	15000	$15000 + 4000 = 19000$

Total male who take subscription for watching Cricket and Hockey together = 15000 + 12500 = 27500
Total female who take subscription for watching Football and Cricket together = 18500 + 19000 = 37500
Required difference = 37500 − 27500 = 10000

S32. Ans.(c)
Sol.
Let the number of males and females who take subscription for watching Cricket be x and $x + 4000$.
$$\frac{x + x + 4000}{2} = 17000$$
$x + 2000 = 17000$
$x = 15000$

	Males	Females
Hockey	$\frac{5}{6} \times 15000 = 12500$	$19000 + 1000 = 20000$
Football	16750	18500
Cricket	15000	$15000 + 4000 = 19000$

Required Percent $= \frac{16750 - 15000}{15000} \times 100 = 11\frac{2}{3}\%$

S33. Ans.(d)
Sol.
Let the number of males and females who take subscription for watching Cricket be x and $x + 4000$.
$$\frac{x + x + 4000}{2} = 17000$$
$x + 2000 = 17000$
$x = 15000$

	Males	Females
Hockey	$\frac{5}{6} \times 15000 = 12500$	$19000 + 1000 = 20000$
Football	16750	18500
Cricket	15000	$15000 + 4000 = 19000$

Required Average $= \frac{12500 + 16750 + 15000}{3} = 14750$

S34. Ans.(c)
Sol.

Let the number of males and females who take subscription for watching Cricket be
x and $x + 4000$.

$$\frac{x + x + 4000}{2} = 17000$$

$x + 2000 = 17000$

$x = 15000$

	Males	Females
Hockey	$\frac{5}{6} \times 15000 = 12500$	$19000 + 1000 = 20000$
Football	16750	18500
Cricket	15000	$15000 + 4000 = 19000$

Total females who take subscription for watching

Hockey, Football and Cricket together = $20000 + 18500 + 19000 = 57500$

Females who take subscription for watching Tennis = $\frac{2}{5} \times 57500 = 23000$

S35. Ans.(b)
Sol.

Let the number of males and females who take subscription for watching Cricket be
x and $x + 4000$.

$$\frac{x + x + 4000}{2} = 17000$$

$x + 2000 = 17000$

$x = 15000$

	Males	Females
Hockey	$\frac{5}{6} \times 15000 = 12500$	$19000 + 1000 = 20000$
Football	16750	18500
Cricket	15000	$15000 + 4000 = 19000$

Total male who take subscription for watching Hockey, Football and Cricket together =
$12500 + 16750 + 15000 = 44250$

Total female who take subscription for watching Hockey, Football and Cricket together =
$20000 + 18500 + 19000 = 57500$

Required difference = $57500 - 44250 = 13250$

S36. Ans.(b)
Sol.

$18 \times \frac{1}{27} \times 9 + 324 \approx ?$

$? \approx 6 + 324$

$? \approx 330$

S37. Ans.(c)
Sol.

$\frac{120}{100} \times 855 + \frac{180}{100} \times 555 \approx ?^2$

$1026 + 999 \approx ?^2$

$?^2 \approx 2025$

$? \approx 45$

S38. Ans.(a)
Sol.
$64 + 2 + 64 \approx ? + 118$
$? \approx 130 - 118$
$? \approx 12$

S39. Ans.(d)
Sol.
$\frac{4}{700} \times 67200 - \frac{2}{5} \times 645 \approx ?$
$384 - 258 \approx ?$
$? \approx 126$

S40. Ans.(b)
Sol.
$(15)^2 - \sqrt{1156} + \sqrt[3]{125} \approx ?^2$
$225 - 34 + 5 \approx ?^2$
$?^2 \approx 196$
$? \approx 14$

S41. Ans.(c)
Sol.
$8^3 \times 3^4 \div 12^2 + (?)^2 = 17^2$
Or, $\frac{4^3 \times 2^3 \times 3^4}{4^2 \times 3^2} + (?)^2 = 289$
or, $288 + (?)^2 = 289$
or, $(?)^2 = 1$
$(?)^2 = 1^2$
or, $? = 1$

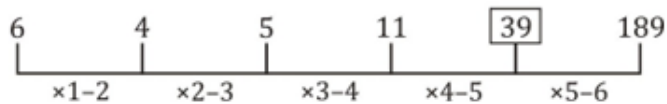**S42. Ans.(a)**
Sol.
Pattern of series –

6	4	5	11	39	189
×1–2	×2–3	×3–4	×4–5	×5–6	

S43. Ans.(e)
Sol.
Pattern of series –

80	68	62	56	47	29
–12	–6	–6	–9	–18	
×0.5	×1	×1.5	×2		
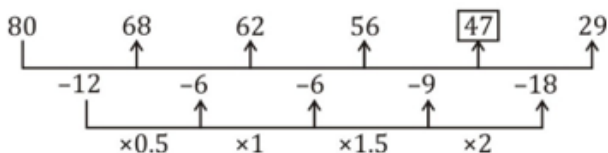
S44. Ans.(b)
Sol.
Pattern of series –

117	140	169	200	237	278
+23	+29	+31	+37	+41	
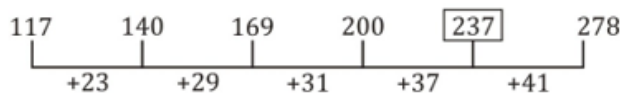
S45. Ans.(d)
Sol.
Pattern of series –

8	8	14	38	98	218

0	6	24	60	120

1^3-1 2^3-2 3^3-3 4^3-4 5^3-5
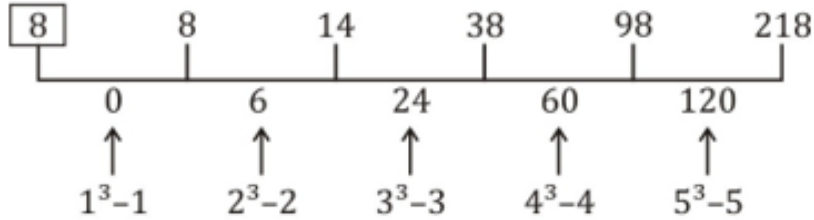
S46. Ans.(b)
Sol.
Remaining quantity of milk after third replacement = initial quantity $\left(1 - \frac{withdrawl\ quanity}{initial\ quanity}\right)^3$

$$= 250 \left(1 - \frac{25}{250}\right)^3$$
$$= 250 \times (1 - 0.1)^3$$
$$= 182.25\ l$$

Volume of milk after third replacement = 182.25 l

S47. Ans.(d)
Sol.
Let radius of smaller sphere be r cm
ATQ –
$$\frac{\frac{4}{3}\pi \times r \times r \times r}{\frac{4}{3}\pi \times 14 \times 14 \times 14} = \frac{27}{64}$$
$$\Rightarrow r^3 = \frac{27}{64} \times 14 \times 14 \times 14$$
$$\Rightarrow r = \frac{3}{4} \times 14$$
$$\Rightarrow r = 10.5\ cm$$
Side of square = 10.5 + 7.5 = 18 cm
Area of square = 18 × 18 = 324 cm²

S48. Ans.(a)
Sol.
Let present age of Adarsh & Sameer is 13x & 15x respectively
Present age of Ayush = (13x −2)
ATQ –
$$\frac{(13x-2)+3}{15x+3} = \frac{9}{11}$$
$$143x -135x = 27 - 11$$
x = 2 years
Required difference = (13× 2 + 5) − 15 × 2 = 1 year

S49. Ans.(d)
Sol.

Profit sharing ratio of Veer, Aayush and Shivam =

	Veer		Aayush		Shivam
Investment	a	:	12	:	15
Time	12	:	10	:	b
	12a	:	120	:	15b

Now given,
$12a = 120$
$a = 10$
And, $120 = 15b$
$b = 8$
so, a – b = 10 - 8 = 2

S50. Ans.(a)
Sol.

Let market price = 10x

Then selling price will be = $10x \times \frac{90}{100}$

= 9x

Cost price will be = $\frac{9x \times 100}{108}$

$= \frac{25x}{3}$

According to question market price will be of 4 article and cost price will be of 5 article.

Required percentage = $\frac{\frac{10x}{4}}{\frac{25x}{8 \times 5}} \times 100$

$= \frac{10x \times 3 \times 5}{25x \times 4} \times 100$

= 150%

S51. Ans.(b)
Sol.

Let the upstream speed of boat be 5x km/hr

Then, downward speed of boat=$5x \times \frac{8}{5} = 8x$ km/hr

Speed of boat in still water=6.5x km/hr

Speed of stream=1.5x km/hr

ATQ

$\frac{65}{5x} - \frac{65}{6.5x} = 1.5$

$x = 2$

Speed of stream=3 km/hr

S52. Ans.(a)
Sol.

Part invested at 5% = $\frac{1800}{9} \times 4 = Rs.800$

Part invested at x% = $\frac{1800}{9} \times 5 = Rs.1000$

ATQ,

$\frac{800 \times 5 \times 2}{100} + \frac{1000 \times x \times 2}{100} = 160$

x= 4%

S53. Ans.(a)
Sol.
Speed of first train = $\frac{1.6}{3} \times 60 = 32$ km/h
Speed of second train = 50 km/h
Let length of second train = d km
ATQ
$\Rightarrow (32 + 50) \times \frac{90}{41} \times \frac{1}{60} = d + 1.6$
$\Rightarrow 82 \times \frac{90}{41} \times \frac{1}{60} = d + 1.6$
$\Rightarrow d = 1.4$ km

S54. Ans.(c)
Sol.
Let Manon's initial expenditure = x
Saving becomes = 5000 – x
ATQ,
Income = Expenditure + Saving
$\Rightarrow 5000 \times \frac{110}{100} = x \times \frac{118}{100} + (5000 - x)\frac{98}{100}$
$\Rightarrow 550000 = 118x + 490000 - 98x$
$\Rightarrow x = 3000$ Rs.

S55. Ans.(a)
Sol.
Weight of the new student
= 8 × (26.5+2.5) – 7 × 26.5 = 232 -185.5 = 46.5 kg

S56. Ans.(c)
Sol.
Male employees who are promoted in A = $(400 + 350) \times \frac{40}{100} \times \frac{2}{5}$
= 120
Male employees who are promoted in B = $120 \times \frac{200}{100}$
= 240
Female employees who are not promoted in A = $350 - \left(\left((400 + 350) \times \frac{40}{100}\right) - 120\right)$
= 170
Female employees who are not promoted in B = $100 - \left(\left((260 + 100) \times \frac{80}{100}\right) - 240\right)$
= 52
Required number of employees = 170 + 52
= 222

S57. Ans.(a)
Sol.
Promoted employees in C & E together = $\left((340 + 410) \times \frac{60}{100}\right) + \left((240 + 360) \times \frac{50}{100}\right)$
= 450 + 300 = 750
Average number of employees in A & D = $\frac{1}{2} \times \left((400 + 350) + (200 + 300)\right)$
= 625
Required ratio = $\frac{750}{625} = 6 : 5$

S58. Ans.(c)
Sol.
Female employees who are promoted in E = $\left((240 + 360) \times \frac{50}{100}\right) - 200$
= 100
Female employees who are promoted in C = $100 \times \frac{160}{100}$
= 160
Male employees who are promoted in C = $\left((340 + 410) \times \frac{60}{100}\right) - 160$
= 290
Required % = $\frac{200+290}{200+300} \times 100$
= 98%

S59. Ans.(e)
Sol.
Employees who are promoted in A, B & D together
= $\left((400 + 350) \times \frac{40}{100}\right) + \left((260 + 100) \times \frac{80}{100}\right) + \left((200 + 300) \times \frac{80}{100}\right)$
= 300 + 288 + 400
= 988
Female employees in B, C & D together = 100 + 410 + 300
= 810
Required difference = 988 – 810
= 178

S60. Ans.(b)
Sol.
Promoted employees in E whose age is less than or equal to 50 years
= $\left((240 + 360) \times \frac{50}{100}\right) \times \frac{(100-21)}{100}$
= 237
Male employees in B & E together = 260 + 240
= 500
Required % = $\frac{500-237}{500} \times 100$
= 52.6%

S61. Ans.(b)
Sol.
Let total no. of type A and type B products sold are 2x and 5x respectively.
Required percentage = $\frac{2x \times \frac{8}{100}}{5x \times \frac{4}{100}} \times 100$
= 80%

S62. Ans.(b)
Sol.
Let total no. of type A and type B products sold are 2x and 5x respectively.
ATQ,
$5x \times \frac{16}{100} - 2x \times \frac{25}{100} = 240$
$\frac{80x}{100} - \frac{50x}{100} = 240$
$\frac{30x}{100} = 240$
$x = 800$
So, required number of products = $2x \times \frac{20}{100}$
= 320

S63. Ans.(a)
Sol.

Let total no. of type A and type B products sold are 2x and 5x respectively

Required ratio = $2x \times \frac{13+12}{100} : 5x \times \frac{16+12}{100}$

$= 2x \times 25 : 5x \times 28$

$= 5 : 14$

S64. Ans.(b)
Sol.

Let total no. of type A and type B products sold are 2x and 5x respectively

ATQ

$2x \times \frac{22}{100} = 15400$

$x = 35000$

Required difference = $5 \times 35000 \times \frac{12}{100} - 2 \times 35000 \times \frac{13}{100}$

$= 21000 - 9100$

$= 11900$

S65. Ans.(e)
Sol.

Let total no. of type A and type B products sold are 2x and 5x respectively

ATQ

$\frac{5x}{6} = 5200$

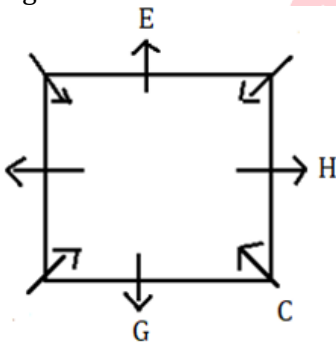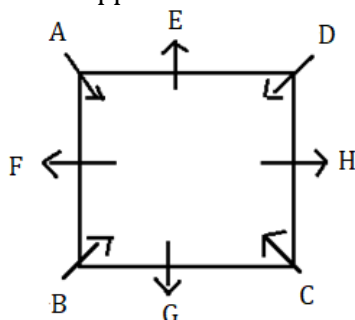So, $2x = \frac{5200 \times 6 \times 2}{5}$

$2x = 12480$

total no. of type A product sold by Q and U together = $12480 \times \frac{20+25}{100} = 5616$

S66. Ans.(b)
Sol. From the given statements, E sits 3rd to the right of C. G is an immediate neighbour of C and sits 2nd to the right of H. C faces inside.

B sits opposite to D who sits 2nd to the left of A. So, the final arrangement is –

S67. Ans.(c)
Sol. From the given statements, E sits 3rd to the right of C. G is an immediate neighbour of C and sits 2nd to the right of H. C faces inside.

B sits opposite to D who sits 2nd to the left of A. So, the final arrangement is –

S68. Ans.(e)
Sol. From the given statements, E sits 3rd to the right of C. G is an immediate neighbour of C and sits 2nd to the right of H. C faces inside.

B sits opposite to D who sits 2nd to the left of A. So, the final arrangement is –

S69. Ans.(a)
Sol. From the given statements, E sits 3rd to the right of C. G is an immediate neighbour of C and sits 2nd to the right of H. C faces inside.
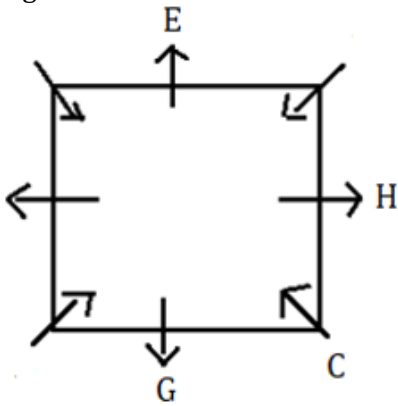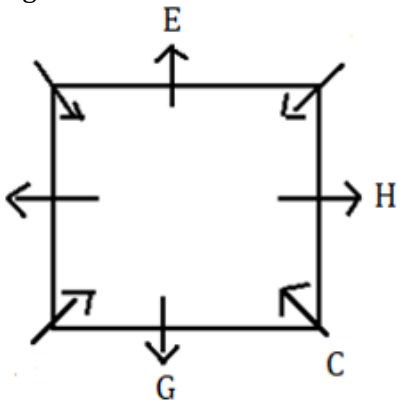

B sits opposite to D who sits 2nd to the left of A. So, the final arrangement is –
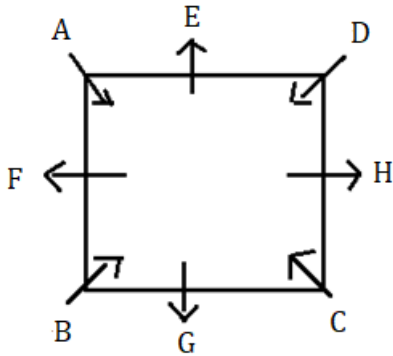
S70. Ans.(b)
Sol. From the given statements, E sits 3rd to the right of C. G is an immediate neighbour of C and sits 2nd to the right of H. C faces inside.

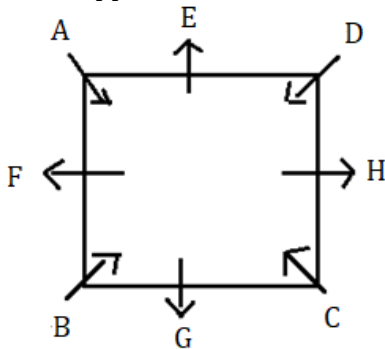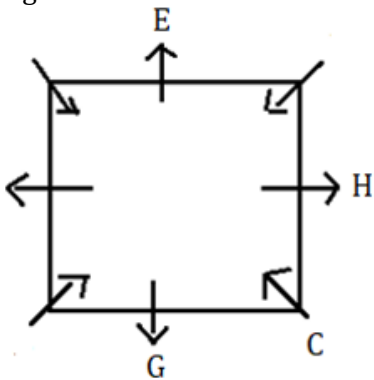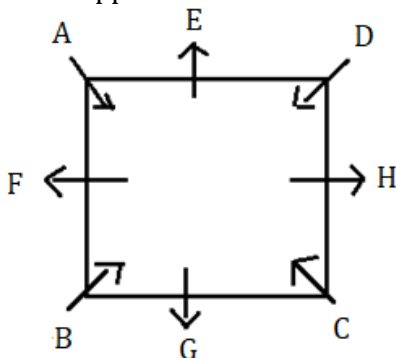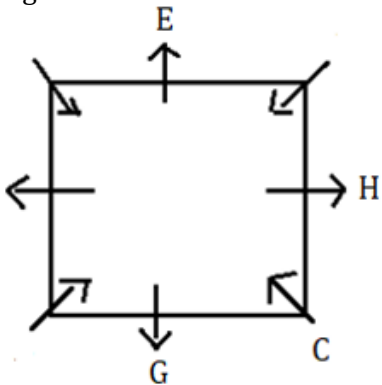B sits opposite to D who sits 2nd to the left of A. So, the final arrangement is –
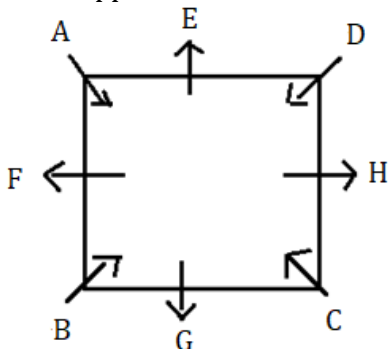
S71. Ans.(a)
Sol.

Words	Codes
Car	rq
Parking	lp
In	qr
The/ground	rt/df
Driving	gf
Fine	yx
Penalize	mf
Now	pu
Police/breakers	vl/rf

S72. Ans.(e)
Sol.

Words	Codes
Car	rq
Parking	lp
In	qr
The/ground	rt/df
Driving	gf
Fine	yx
Penalize	mf
Now	pu
Police/breakers	vl/rf

S73. Ans.(a)
Sol.

Words	Codes
Car	rq
Parking	lp
In	qr
The/ground	rt/df
Driving	gf
Fine	yx
Penalize	mf
Now	pu
Police/breakers	vl/rf

S74. Ans.(d)
Sol.

Words	Codes
Car	rq
Parking	lp
In	qr
The/ground	rt/df
Driving	gf
Fine	yx
Penalize	mf
Now	pu
Police/breakers	vl/rf

S75. Ans.(c)
Sol.

Words	Codes
Car	rq
Parking	lp
In	qr
The/ground	rt/df
Driving	gf
Fine	yx
Penalize	mf
Now	pu
Police/breakers	vl/rf

S76. Ans.(b)
Sol.
L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So E and are studying in BHU and doing M.Com. L and G are not studying in the same university. So L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S77. Ans.(c)
Sol.
L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So E and are studying in BHU and doing M.Com. L and G are not studying in the same university. So L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S78. Ans.(d)
Sol.
L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So E and are studying in BHU and doing M.Com. L and G are not studying in the same university. So L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S79. Ans.(c)
Sol.
L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So E and are studying in BHU and doing M.Com. L and G are not studying in the same university. So L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S80. Ans.(b)
Sol.

L is doing M.Sc. H is doing M.A. and studying in JNU with only J. G is doing M.Sc. and studying in DU with M who is doing M.A. J is doing M.Sc. K is not doing M.Com. It's mean that K is doing MA. From these conditions' arrangement will be-

Student	University	Degree
E		
F		
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K		M.A.
L		M.Sc.
M	DU	M.A.

E and F are not studying in DU and doing the same degree but not M.A. So E and are studying in BHU and doing M.Com. L and G are not studying in the same university. So L is studying in BHU. So final arrangement will be-

Student	University	Degree
E	BHU	M.Com
F	BHU	M.Com
G	DU	M.Sc.
H	JNU	M.A.
J	JNU	M.Sc.
K	DU	M.A.
L	BHU	M.Sc.
M	DU	M.A.

S81. Ans.(c)
Sol.
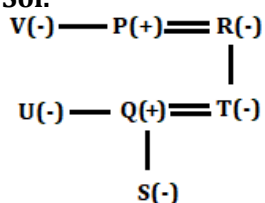
S82. Ans.(e)
Sol.

S83. Ans.(d)
Sol.

S84. Ans.(d)
Sol.
From the given statements, M is senior to the one who is manager. More than two designations are there between M and N who is not PO. There is one designation is between N and H. Here we get four possibilities i.e., case-1, case-2, case-3 and case-4.

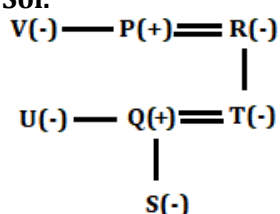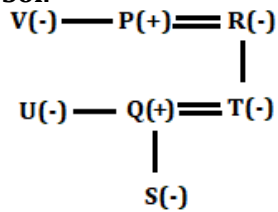| Designation	Case-1 Persons	Case-2 Persons	Case-3 Persons	Case-4 Persons
GM			M	M
DGM		M		
AGM	M		H/	
Manager				
AM	H	H	N	H
PO				
Clerk	N	N	H/	N

Now there are as many designations between M and S as between S and H. Here case-2 is ruled out. S is not DGM. One designation is there between S and P who is senior to R. Here case-4 ruled out.

Designation	Case-1 Persons	Case-3 Persons
GM		M
DGM	P	P
AGM	M	R/
Manager	S	S
AM	H	N
PO	R	R/
Clerk	N	H

Now, Q is junior to R. here case-1 ruled out. So, the final arrangement will be:

Designation	Persons
GM	M
DGM	P
AGM	R
Manager	S
AM	N
PO	Q
Clerk	H

S85. Ans.(a)
Sol.
From the given statements, M is senior to the one who is manager. More than two designations are there between M and N who is not PO. There is one designation is between N and H. Here we get four possibilities i.e., case-1, case-2, case-3 and case-4.

Designation	Case-1 Persons	Case-2 Persons	Case-3 Persons	Case-4 Persons
GM			M	M
DGM		M		
AGM	M		H/	
Manager				
AM	H	H	N	H
PO				
Clerk	N	N	H/	N

Now there are as many designations between M and S as between S and H. Here case-2 is ruled out. S is not DGM. One designation is there between S and P who is senior to R. Here case-4 ruled out.

Designation	Case-1 Persons	Case-3 Persons
GM		M
DGM	P	P
AGM	M	R/
Manager	S	S
AM	H	N
PO	R	R/
Clerk	N	H

Now, Q is junior to R. here case-1 ruled out. So, the final arrangement will be:

Designation	Persons
GM	M
DGM	P
AGM	R
Manager	S
AM	N
PO	Q
Clerk	H

S86. Ans.(c)
Sol.
From the given statements, M is senior to the one who is manager. More than two designations are there between M and N who is not PO. There is one designation is between N and H. Here we get four possibilities i.e., case-1, case-2, case-3 and case-4.

Designation	Case-1 Persons	Case-2 Persons	Case-3 Persons	Case-4 Persons
GM			M	M
DGM		M		
AGM	M		H/	
Manager				
AM	H	H	N	H
PO				
Clerk	N	N	H/	N

Now there are as many designations between M and S as between S and H. Here case-2 is ruled out. S is not DGM. One designation is there between S and P who is senior to R. Here case-4 ruled out.

Designation	Case-1 Persons	Case-3 Persons
GM		M
DGM	P	P
AGM	M	R/
Manager	S	S
AM	H	N
PO	R	R/
Clerk	N	H

Now, Q is junior to R. here case-1 ruled out. So, the final arrangement will be:

Designation	Persons
GM	M
DGM	P
AGM	R
Manager	S
AM	N
PO	Q
Clerk	H

S87. Ans.(b)
Sol. From the given statements, M is senior to the one who is manager. More than two designations are there between M and N who is not PO. There is one designation is between N and H. Here we get four possibilities i.e., case-1, case-2, case-3 and case-4.

| Designation	Case-1 Persons	Case-2 Persons	Case-3 Persons	Case-4 Persons
GM			M	M
DGM		M		
AGM	M		H/	
Manager				
AM	H	H	N	H
PO				
Clerk	N	N	H/	N

Now there are as many designations between M and S as between S and H. Here case-2 is ruled out. S is not DGM. One designation is there between S and P who is senior to R. Here case-4 ruled out.

Designation	Case-1 Persons	Case-3 Persons
GM		M
DGM	P	P
AGM	M	R/
Manager	S	S
AM	H	N
PO	R	R/
Clerk	N	H

Now, Q is junior to R. here case-1 ruled out. So, the final arrangement will be:

Designation	Persons
GM	M
DGM	P
AGM	R
Manager	S
AM	N
PO	Q
Clerk	H

S88. Ans.(b)
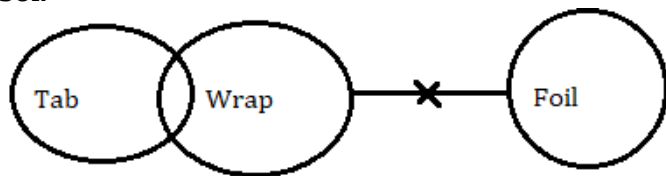**Sol.**
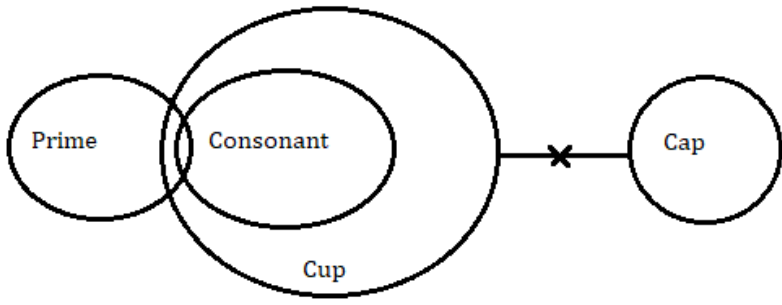
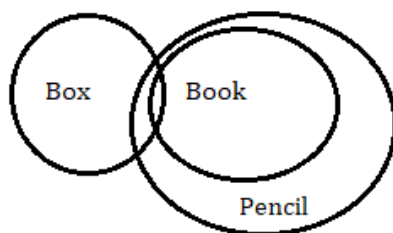**S89. Ans.(e)**
Sol.
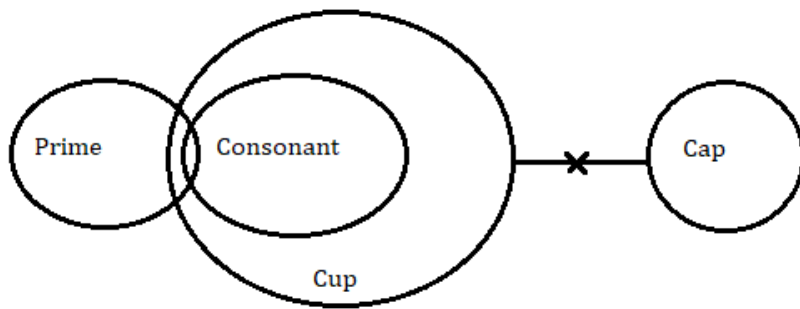
S90. Ans.(e)
Sol.
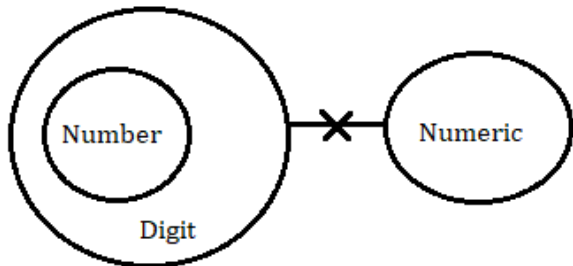
S91. Ans.(e)
Sol.

S92. Ans.(e)
Sol.

S93. Ans.(a)
Sol. Given Word- MULTINATIONAL
After arrangement- AAIILLMNNOTTU

S94. Ans.(a)
Sol. From the given statements, more than three persons were younger to C. Only one person was born between C and P, so we have three possible cases i.e., case-1, case-2 and case-3. O is the youngest person:

Years	Age	Case-1	Case-2	Case-3
2000	21	C		P/
2002	19		C	
2004	17	P		C
2005	16		P	
2008	13			P/
2011	10			
2015	6	O	O	O

The age difference between P and C is same as the age difference between Y and O. So, case-2 is eliminated. M was born just before K. P was born before I. So, case-1 is eliminated. Hence the final arrangement is:

Years	Age	Persons
2000	21	P
2002	19	I
2004	17	C
2005	16	M
2008	13	K
2011	10	Y
2015	6	O

S95. Ans.(b)
Sol. From the given statements, more than three persons were younger to C. Only one person was born between C and P, so we have three possible cases i.e., case-1, case-2 and case-3. O is the youngest person:

Years	Age	Case-1	Case-2	Case-3
2000	21	C		P/
2002	19		C	
2004	17	P		C
2005	16		P	
2008	13			P/
2011	10			
2015	6	O	O	O

The age difference between P and C is same as the age difference between Y and O. So, case-2 is eliminated. M was born just before K. P was born before I. So, case-1 is eliminated. Hence the final arrangement is:

Years	Age	Persons
2000	21	P
2002	19	I
2004	17	C
2005	16	M
2008	13	K
2011	10	Y
2015	6	O

S96. Ans.(c)
Sol. From the given statements, more than three persons were younger to C. Only one person was born between C and P, so we have three possible cases i.e., case-1, case-2 and case-3. O is the youngest person:

Years	Age	Case-1	Case-2	Case-3
2000	21	C		P/
2002	19		C	
2004	17	P		C
2005	16		P	
2008	13			P/
2011	10			
2015	6	O	O	O

The age difference between P and C is same as the age difference between Y and O. So, case-2 is eliminated. M was born just before K. P was born before I. So, case-1 is eliminated. Hence the final arrangement is:

Years	Age	Persons
2000	21	P
2002	19	I
2004	17	C
2005	16	M
2008	13	K
2011	10	Y
2015	6	O

S97. Ans.(a)
Sol. From the given statements, more than three persons were younger to C. Only one person was born between C and P, so we have three possible cases i.e., case-1, case-2 and case-3. O is the youngest person:

Years	Age	Case-1	Case-2	Case-3
2000	21	C		P/
2002	19		C	
2004	17	P		C
2005	16		P	
2008	13			P/
2011	10			
2015	6	O	O	O

The age difference between P and C is same as the age difference between Y and O. So, case-2 is eliminated. M was born just before K. P was born before I. So, case-1 is eliminated. Hence the final arrangement is:

Years	Age	Persons
2000	21	P
2002	19	I
2004	17	C
2005	16	M
2008	13	K
2011	10	Y
2015	6	O

S98. Ans.(b)
Sol. From the given statements, more than three persons were younger to C. Only one person was born between C and P, so we have three possible cases i.e., case-1, case-2 and case-3. O is the youngest person:

Years	Age	Case-1	Case-2	Case-3
2000	21	C		P/
2002	19		C	
2004	17	P		C
2005	16		P	
2008	13			P/
2011	10			
2015	6	O	O	O

The age difference between P and C is same as the age difference between Y and O. So, case-2 is eliminated. M was born just before K. P was born before I. So, case-1 is eliminated. Hence the final arrangement is:

Years	Age	Persons
2000	21	P
2002	19	I
2004	17	C
2005	16	M
2008	13	K
2011	10	Y
2015	6	O

S99. Ans.(d)
Sol. Ram's position from left end = 23 + 12 = 35th
Mohan's position from left end = 35 – 5 = 30th
So, total number of friends in row = 19 + 30 – 1 = 48

S100. Ans.(a)
Sol. New number after modified – 2 5 3 4 **3** 9 5 1 7 6 9 4