Achievers

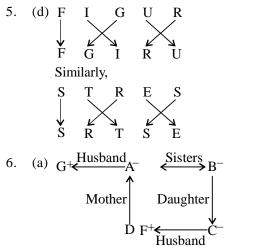
SSC Phase XII Exam. – Practice Set

Answer with Explanation

8.

(a) First figure 1. 15 + 16 = 22 + 9 or, 31 = 31Second figure দিন গুবায়ি 13 + 7 = 11 + 9 or, 20 = 20Third figure

- 21 + 15 = ? + 13 or, ? = 36 13 = |23|(c) Mirage is an illusion caused by hot air conditions 2. making one see something that is not there, especially the apperance of a sheet of water on a hot road or in a desert. Rainbow is an arch of seven colours formed in the sky when the sun shines through rain. 3. (a) $20 - 14 = 6; \frac{6}{2} = 3$ $13 - 7 = 6; \frac{6}{2} = 3$ 4. (b) $25 = 5 \times 5$ and
- $37 = (5 + 1)^2 + 1$ $49 = 7 \times 7$ and $? = (7 + 1)^2 + 1 = 65$ জ্যাচিডাৰ্ম



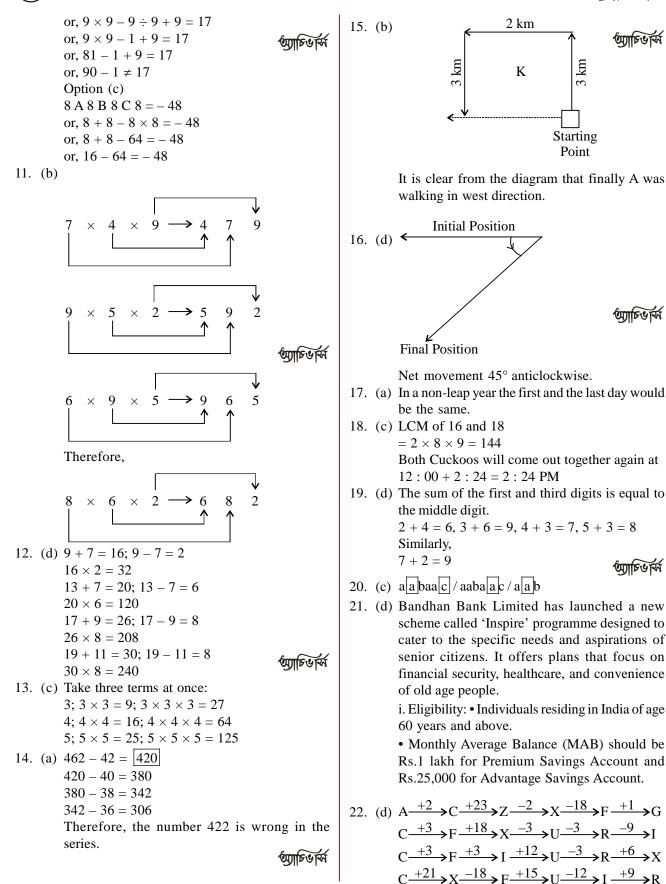
Clearly C is daughter of D's mother A's sister (B) i.e., C is D's cousin.

7. (b)

$$\begin{array}{c|c} -\Rightarrow \div & +\Rightarrow -\\ \hline \div \Rightarrow \times & \times \Rightarrow + \end{array}$$
Option (a)

 $70 - 2 + 4 \div 5 \times 6 = 44$ দিন গুৰায়ে $\Rightarrow 70 \div 2 - 4 \times 5 + 6 = 44$ \Rightarrow 35 - 20 + 6 = 44

Option (b) দিন গুৰায়ে $70 - 2 + 4 \div 5 \times 6 = 21$ $70 \div 2 - 4 \times 5 + 6 = 21$ $\Rightarrow 35 - 20 + 6 = 21$ $\Rightarrow 41 - 20 = 21$ (d) ÷⇒- $- \Rightarrow \times$ $\times \Rightarrow +$ $+ \Rightarrow \div$ Option (a) $36 \times 6 + 3 - 2 < 20$ \Rightarrow 36 + 6 ÷ 3 × 2 < 20 \Rightarrow 36 + 2 × 2 \lt 20 Option (b) $36 \times 6 + 3 \times 2 = 30$ $\Rightarrow 36 + 6 \div 3 + 2 = 30$ $\Rightarrow 36 + 2 + 2 \neq 30$ Option (c) $36 + 6 \times 3 + 2 = 20$ $\Rightarrow 36 \div 6 + 3 \div 2 = 20$ ন্দাগুৰায়ে $\Rightarrow 6 + \frac{3}{2} \neq 20$ Option (d) $36 + 6 - 3 \times 2 = 20$ $\Rightarrow 36 \div 6 \times 3 + 2 = 20$ $\Rightarrow 6 \times 3 + 2 = 20$ $\Rightarrow 18 + 2 = 20$ 9. (d) +⇒- $-\Rightarrow\times$ $\times \Longrightarrow \div$ $\div \Longrightarrow +$ $25 \times 5 \div 30 + 8 - 2 = ?$ $? = 25 \div 5 + 30 - 8 \times 2$ $\Rightarrow ? = 5 + 30 - 16 = 19$ 10. (c) $A \rightarrow +$ $B \rightarrow C \rightarrow \times$ $D \rightarrow \div$ Option (a) 8 B 6 D 2 A 4 C 3 = 15 or, $8 - 6 \div 2 + 4 \times 3 = 15$ or, $8 - 3 + 4 \times 3 = 15$ or, 8 - 3 + 12 = 15or, 20 - 3 = 15জ্যাতি ভার্মি or, $17 \neq 15$ Option (b) 9 C 9 B 9 D 9 A 9 = 17



(২

Achievers

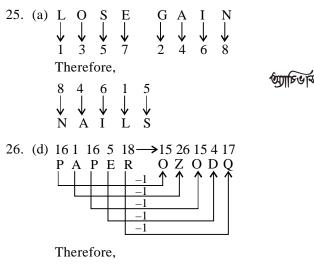
- 23. (a) According to question the new series will be: Z X V T R P N L J H F D B
- 24. (a) Gujarat has been recognised as the 'petro capital' of India, due to the presence of the Reliance Industry Limited's Jamnagar refinery and ONGC Petro Additions Limited (OPaL)'s state-of-theart petrochemical complex at Dahej in Bharuch district.

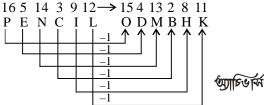
• RIL-Jamnagar refinery complex is the largest and most complex single-site refinery in the world.

• The refinery can process 1.4 million barrels of crude oil per day. The Refinery has a complexity index of 21.1 which is the highest in the world. i. OPaL Refinery Complex is one of South Asia's single largest petrochemical complexes.

• It is a joint venture(JV) between the Oil and Natural Gas Corporation (ONGC), the Gas Authority of India (GAIL) & Gujarat State Petroleum Corporation Limited (GSPC).

Note : Dahej's PCPIR is one of the four PCPIRs declared by the Government of India(GoI) under the PCPIR Policy 2007.





27. (c) The Government of India, has constituted the 16th Finance Commission of India with Dr. Arvind Panagariya, former Vice-Chairman (VC), NITI Aayog (National Institution for Transforming India) (2015 to 2017) as Chairman.

• Ritvik Ranjanam Pandey, Joint Secretary (Revenue), Ministry of Finance, was appointed as the Secretary to the Commission. He is a 1998 batch IAS officer of Karnataka cadre. The other members of the 16th commission will be notified separately.

• Tenure : The Chairman and other members of the Commission will hold the post from the date on which they assume office up to the date of submission of Report or 31st October 2025.

Note: The 16th commission is set to submit its report by 31st October 2025 covering a period of five years commencing on the 1st April 2026. i. Arvind Panagariya is a Professor of Economics and the JagdishBhagwati Professor of Indian Political Economy at Columbia University, the United States of America (USA).

ii. He has also served as the Chief Economist of the Asian Development Bank (ADB) from 2000 to 2002. He was honoured with Padma Bhusan (Literature and Education) in 2012.

- 28. (a) There is no 'l' letter in the key word.
- 29. (a) Article 222 empowers the President to transfer judges from one High Court to another. Clause (2) of this article goes on to provide that when a judge is so transferred he shall be entitled to receive in addition to his salary a compensatory allowance. It is felt that there is no real justification for granting such an allowance and it is accordingly proposed to omit clause.
- 30. (b) Felix-Antoine Tshisekedi Tshilombo, the leader of the Union for Democracy and Social Progress (UDPS) party, was re-elected as the President of the Democratic Republic of Congo (DRC) for the 2nd term.

• He is set to be sworn in as the President of Congo on 20th January 2024.

i. He was first elected as the President of Congo in 2019 succeeding Joseph Kabila..During his tenure as President, He also served as Chair of the African Union (AU) in 2021. Note : From 1971 to 1997, Congo was officially known as the Republic of Zaire.

31. (b) The Dead Sea is a salt lake bordering Jordan to the east and Israel and the West Bank to the west. With 33.7% salinity, it is also one of the world's saltiest bodies of water. It is 8.6 times saltier than the ocean. This salinity makes for a harsh environment in which animals cannot flourish, hence its name.

୰ୄ

- 32. (c) The Sahara is the largest subtropical hot desert and third largest desert after Antarctica and the Arctic. At over 9,400,000 square kilometres, it covers most of North Africa, making it almost as large as China or the United States. In terms of area, the Arabian and the Kalahari Deserts come at second and third places among subtropical deserts.
- 33. (d) Daocheng Yading Airport is scheduled for construction in Daocheng County in Garzê Tibetan Autonomous Prefecture of Sichuan Province, China. At 4,410 m above sea level, it will be higher than Qamdo Bangda Airport, the world's current highest airport.
- 34. (c) OMOs are the market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis.
- 35. (a) Factor cost or national income by type of income is a measure of national income or output based on the cost of factors of production, instead of market prices. This allows the effect of any subsidy or indirect tax to be removed from the final measure.
- 36. (c) In capitalism, people may sell or lend their property, and other people may buy or borrow them. In many countries with mixed economies (part capitalism and part socialism) there are laws about what we can buy or sell, or what prices we can charge, or whom we can hire or fire.
- 37. (c) When prices rise between 20% to 100% per annum or even more, it is called galloping or hyperinflation. Such a situation brings a total collapse of the monetary system because of the continuous fall in the purchasing power of money. Galloping inflation has adverse effect on middle and low income groups in the society.
- 38. (d) In optics, Lambert's cosine law says that the radiant intensity or luminous intensity observed from an ideal diffusely reflecting surface or ideal diffuse radiator is directly proportional to the cosine of the angle between the observer's line of sight and the surface normal. The law is also known as the cosine emission law or Lambert's emission law. A surface which obeys Lambert's law is said to be Lambertian, and exhibits Lambertian reflectance. Such a surface has the same radiance when viewed from any angle. This means, for example, that to the human eye it

has the same apparent brightness (or luminance).

39. (a) On 1st January 2024, Nadia Calvino Santamaria, a Spanish economist and civil servant, took over as the 8th President of the European Investment Bank (EIB), the lending arm of the European Union (EU).

• With this appointment, she became the first woman President of EIB. She succeeds Werner Hoyer of Germany, who held the post since 2012. Note: She has been serving as the First Vice-President(VP) and Minister for Economy, Trade and Companies, Government of Spain since July 2021.

• She also served as Director-General for the Internal Market of the European Commission (2010-2014) and Director-General for Budget of the European Commission(2014-2018).

• She has also served as the Chair of the International Monetary and Financial Committee (IMFC) of the International Monetary Fund (IMF) (since 3rd January 2022).

- 40. (d) Magnetic resonance imaging (MRI), nuclear magnetic resonance imaging (NMRI), or magnetic resonance tomography (MRT) is a medical imaging technique used in radiology to visualize internal structures of the body in detail. MRI makes use of the property of nuclear magnetic resonance (NMR) to image nuclei of atoms inside the body. An MRI scanner is a device in which the patient lies within a large, powerful magnet where the magnetic field is used to align the magnetization of some atomic nuclei in the body, and radio frequency fields to systematically alter the alignment of this magnetization. This causes the nuclei to produce a rotating magnetic field detectable by the scanner-and this information is recorded to construct an image of the scanned area of the body. দ্যাগুৰাটি
- 41. (c) Railway tracks are banked on curves so that necessary centripetal force may be obtained from the horizontal component of the weight of the train. It helps the train to stay on the track as it negotiates the curve. The raised track provides required centripetal force to enable it to move round the curve.
- 42. (d) The separation of fat from milk is based on the fact that when liquids of different specific gravities revolve around the same centre at the same distance with the same angular velocity, a

Achievers

greater centrifugal force is exerted on the heavier liquid than on the lighter one.

- 43. (c) Higher water pressure on the base of the dam needs greater strength to hold it back.
- 44. (b) Attempts to create helicopters can be traced back to Leonardo da Vinci, but the first working prototype helicopter, the VS-300, was invented by Igor Sikorsky in 1939. The next model he designed was the R4 in 1942, which was the world's first mass produced helicopter.
- 45. (b) A sextant is a doubly reflecting navigation instrument used to determine the angle between an astronomical object and the horizon for the purposes of celestial navigation. Common uses of the sextant include sighting the sun at solar noon or Polaris at night (in the Northern Hemisphere) to determine latitude.
- 46. (d) The spectroheliograph is an instrument used in astronomy which captures a photographic image of the Sun at a single wavelength of light, a monochromatic image. The wavelength is usually chosen to coincide with an spectral wavelength of one of the chemical elements present in the Sun.
- 47. (a) Wernher Magnus Maximilian, Freiherr von Braun was a German-American rocket scientist, aerospace engineer, space architect, and one of the leading figures in the development of rocket technology in Nazi Germany during World War II and, subsequently, in the United States. In his 20s and early 30s, von Braun was the central figure in Germany's rocket development program, responsible for the design and realization of the V-2 combat rocket during World War II. After the war, he and some select members of his rocket team were taken to the United States as part of the then-secret Operation Paperclip. Von Braun worked on the United States Army intermediate range ballistic missile (IRBM) program before his group was assimilated by NASA. Under NASA, he served as director of the newly formed Marshall Space Flight Center and as the chief architect of the Saturn V launch vehicle, the super-booster that propelled the Apollo spacecraft to the Moon.
- 48. (d) The Apollo missions were a series of space missions, both manned and unmanned, flown by NASA between 1961 and 1975. They culminated with a series of manned Moon landings between 1969 and 1972. The first manned flight of Apollo was in 1968 and it succeeded in landing the first humans on Earth's

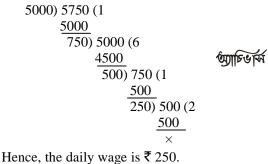
Moon in 1969 through 1972. It was during the Apollo 11 mission that astronauts Neil Armstrong and Buzz Aldrin landed their Lunar Module (LM) on the Moon on July 20, 1969 and walked on its surface while Michael Collins remained in lunar orbit in the command spacecraft, and all three landed safely on Earth on July 24.

- 49. (c) The metric system in weights and measures was adopted by the Indian Parliament in December 1956.
- 50. (a) Dwight D. Eisenhower (1953-1961) was the first U.S. President to visit independent India and made a visit in 1959. Richard Nixon (in 1969), Jimmy Carter (in 1978) and Bill Clinton (in 2000) were the other American presidents who visited India.
- 51. (a) Let m = n = p and m n = 2p m + n = 2p ∴ $(m - n)(m + n) = 4p^2$ $\Rightarrow m^2 - n^2 = 4p^2$

52. (a)
$$2^{96} + 1 = (2^{32})^3 + 1^3$$

= $(2^{32} + 1) (2^{64} - 2^{32} + 1)$
Clearly, $2^{32} + 1$ is a factor of $2^{96} + 1$

- 53. (c) divisible by (11×13)
- 54. (b) It is required to find the highest common factor of 5750 and 5000, because his daily wage is their common factor.



55. (b) Five crates out of 25 crates of oranges were lost.

 \therefore C.P. of 20 crates of oranges = Rs. 10000 S.P. of 20 crates of oranges

$$= \text{Rs.}\left(\frac{10000 \times 125}{100}\right) = \text{Rs. } 12500$$

∴ S.P. per crate $=\frac{12500}{20} = \text{Rs. } 625$

- 56. (d) When each number is multiplied by 8, the new average gets multiplied by 8. i.e., $21 \times 8 = 168$
- 57. (c) Total SP = ₹ 240000 CP of car = ₹ $\left(\frac{100}{80} \times 120000\right)$ = ₹ 150000

¢

CP of jeep

$$= \overline{\mathbf{x}} \left(\frac{100}{120} \times 120000 \right) = \overline{\mathbf{x}} 100000$$
Total CP = ₹ 250000
∴ Loss = ₹ (250000 - 240000) = ₹ 10000
58. (d) $\frac{a}{b} + \frac{b}{a} = 2$
 $\Rightarrow \frac{a^2 + b^2}{ab} = 2$
 $\Rightarrow a^2 + b^2 = 2ab$
 $\Rightarrow a^2 + b^2 - 2ab = 0$
 $\Rightarrow (a - b)^2 = 0 \Rightarrow a - b = 0$
59. (a) Total height of 5 friends
 $= (6 \times 167 - 162) \text{ cm.}$
 $= (1002 - 162) \text{ cm.}$
 $= (1002 - 162) \text{ cm.}$
 $= 840 \text{ cm.}$
∴ Required average = 840/5 = 168 cm.
60. (a) Ratio of first and second class fares = 3 : 1
Ratio of total amount = 3 × 1 : 1 × 50 = 3 : 50
∴ Amount collected from second class
passengers
 $= \overline{\mathbf{x}} \left(\frac{50}{53} \times 1325 \right) = \overline{\mathbf{x}} 1250$
61. (a) Kites of 20 are available for 19.
Hence, discount = 5%
i.e. $\frac{1}{20} \times 100$
If one gets kites of 20 for 18, discount = 10%
∴ Required answer
20 kites $\rightarrow 2$ kites
 27 kites $\rightarrow = \frac{2}{20} \times 27 \approx 3$
62. (b) Total revenue earned
 $= \overline{\mathbf{x}} \left(9900 \times \frac{20}{100} \times 10 + 9900 \times \frac{80}{100} \times 20 \right)$
 $= \overline{\mathbf{x}} (19800 + 158400) = \overline{\mathbf{x}} 178200$
63. (a) C.P of 1 bucket = x
C.P. of 1 mug = y
∴ 8x + 5y = 92 ...(i)
5x + 8y = 77(ii)
By using equation (i) × 5 - equation (ii) × 8,
 $40x + 25y - 40x - 64y$
 $= 460 - 616$
 $\Rightarrow -39y = -156$
 $\Rightarrow y = 4$
From equation (i),
8x + 20 = 92

 $\Rightarrow 8x = 92 - 20 = 72$

৬

6

$$\Rightarrow x = 9$$

$$\therefore C.P. of 2 mugs and 3 buckets$$

$$= 2 \times 4 + 3 \times 9$$

$$= 8 + 27 = 35$$

64. (c) As given,

$$2A = 3B$$

$$\Rightarrow A : B = 3 : 2 and, 4B = 5C$$

$$\Rightarrow B : C = 5 : 4$$

$$\therefore A : B : C$$

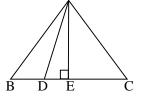
$$= 3 \times 5 : 2 \times 5 : 2 \times 4$$

$$= 15 : 10 : 8$$

$$\therefore A : C = 15 : 8$$

65. (c) The numbers of the sequence are the consecutive prime numbers starting from 3. Since, 9 is not a prime number, it should be replaced by 11.





$$AE \perp BC$$

$$\therefore BE = EC = 5 \text{ cm}$$

$$AC = 10 \text{ cm}$$

দি গুৰাটে

$$AE = \sqrt{10^2 - 5^2}$$

= $\sqrt{100 - 25} = \sqrt{75} = 5\sqrt{3}$ cm
$$DE = DC - EC$$

= $\frac{2}{3} \times 10 - 5 = \frac{5}{3}$ cm
$$\therefore AD = \sqrt{\left(\frac{5}{3}\right)^2 + \left(5\sqrt{3}\right)^2}$$

= $\sqrt{\frac{25}{9} + 75} = \sqrt{\frac{25 + 675}{9}}$
= $\sqrt{\frac{700}{9}} = \frac{10\sqrt{7}}{3}$ cm

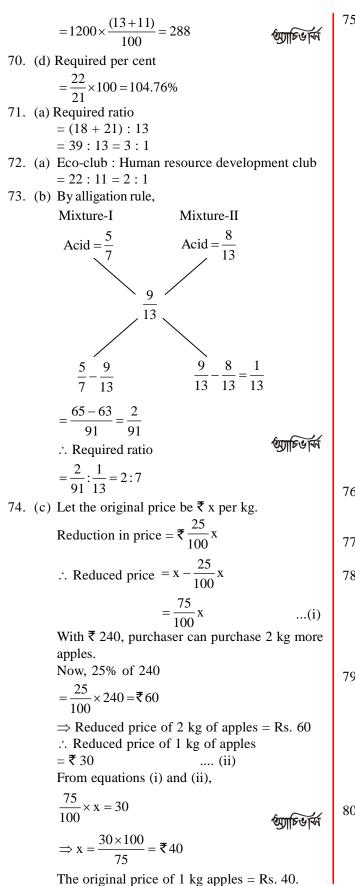
67. (b) Increase in radius of circle = Increase in circumference of circle = 5%: Increase in area

$$= \left(5 + 5 + \frac{5 \times 5}{100}\right)\% = 10.25\%$$

68. (a) Students enrolled in NCC activities $=\frac{1200\times15}{100}=180$

69. (c) Total students in HRD & Debating club

U



5. (d) Suppose total number of votes cast = x.

$$\therefore$$
 Number of illegal votes = 4%
of $x = \frac{4x}{100} = \frac{x}{25}$
 \therefore Number of valid votes
 $= x - \frac{x}{25} = \frac{25x - x}{25} = \frac{24x}{25}$
Votes secured by the contestant who is defeated.
 $= \frac{24x}{25} - \frac{24x}{25} \times \frac{55}{100}$
 $= \frac{24x}{25} (1 - \frac{55}{100}) = \frac{24x}{25} \times \frac{45}{100}$
According to the question,
 $\frac{24x}{25} \times \frac{55}{100} = 240 = \frac{24x}{25} \times \frac{45}{100}$
 $\Rightarrow \frac{24x}{25} (\frac{55}{100} - \frac{45}{100}) = 240$
 $\Rightarrow \frac{24x}{25} \times \frac{10}{100} = 240$
 $\Rightarrow \frac{24x}{25} = 240$
 $\Rightarrow \frac{24x}{25} = 240$
 $\Rightarrow x = \frac{250 \times 240}{24} = 2500$
 \therefore Total number of votes cast = 2500
5. (b) Use of Double comparatives (more and better)
is incorrect.
Hence, better will replace more better.
7. (c) Will the truth be told to us by her? (Passive)
The sentence is in Simple Present Tense. (Active)
8. (a) majestic (Adjective) : impressive; splendid
august (Adjective) : inpressive; making you feel
respect
important (Adjective) : of great value
difficult (Adjective) : of great value
difficult (Adjective) : of acasy
huge (Adjective) : enormous; vast
0. (b) truth (Noun) : the facts in reality and not guess
work
veracity (Noun) : the right to do or say anything
without anyone stopping you
wisdom (Noun) : the ability to make sensible
decisions
loyalty (Noun) : the quality of being faithful
0. (a) gigantic (Adjective) : extremely large
colossal (Adjective) : extremely large
colourful (Adjective) : extremely

٩

বর্ষ - ১১, ইস্যু - ১২ ★ এপ্রিল, ২০২৪

দিন হ ব্যায়ে

- 81. (d) calm (Adjective) : not excited, nervous or upset panicky (Adjective) : anxious about something; feeling or showing great fear; hysterical confident (Adjective) : feeling sure about your own ability to do things and be successful sober (Adjective) : serious and sensible; plain and not bright colours ক্ষাভবায়ে quiet (Adjective) : making very little noise
- 82. (a) authentic (Adjective) : known to be real and genuine and not a copy; true and accurate apocryphal (Adjective) : well-known but not true dubious (Adjective) : doubtful; not certain and slightly suspicious unsubstantiated (Adjective) : not proved to be true by evidence; unsupported fictitious (Adjective) : invented by somebody

rather than true

- 83. (a) sensitive (Adjective) : aware of and being able to understand other people and their feelings callous (Adjective) : not caring about other people's feelings or sufferings; cruel soft (Adjective) : not stiff or hard; not loud; kind and sympathetic kind (Adjective) : gentle, friendly and generous generous (Adjective) : giving or willing to give freelv
- 84. (b) one of the structures built will replace the one structure build. দনভাবায় The event shows a past time
- 85. (d) No error
- 86. (b) "Would you open the door, please?" she said $\downarrow \downarrow$ \downarrow \downarrow
 - H.V. Pro. Verb Rep. V. (me)
 - to me. \rightarrow (D.S.) She requested me to open the door. \rightarrow (I.S.) \downarrow \downarrow R

87. (d) in connection with (Idiom): for reasons connected with somebody or something with regard to (Idiom) : concerning someone or something with reference to (Idiom) : used for saying what you are talking or writing about Here, in connection with is the right usage.

88. (d) abdicate

abdicate (V.) : to give up the position of being king/queen; to fail/refuse to perform a duty abduct (V.) : to kidnap দিন গুৰাদেওঁ abandon (V.) : to leave abort (V.) : to end or cause to end before something has been completed because it is likely to fail

- 89. (b) helter-skelter : done in a hurry and in a way that lacks unity
 - Clothes were scattered helter-skelter.
 - The best option is in disorderly haste.
- 90. (d) The misspelt word is accomodation. The correct spelling is accommodation.
- 91. (d) The correctly spelt word is accommodative. The correct spellings of the other words are cumulative, commemorative, accumulative
- 92. (c) QRSP
- 93. (b) causes (Noun)
- 94. (a) published (Verb)
- 95. (a) on (Prep.)
- 96. (c) any other newspaper will replace any newspaper Here, that of any other newspaper is the right usage
- 97. (d) No error Look at the examples given below : Neither my sister nor my brother is interested. \downarrow
 - Singular Singular

Neither my sister nor my brothers are interested.

 \downarrow

Plural Plural

 \downarrow

98. (b) The sentence is in Passive Voice. Here, been will not be used.

Hence, held as hostages is the right usage.

- 99. (d) The beggar was laughed at by the boy. (Passive) The sentence is in Simple Past Tense. (Active) An Intransitive Verb may be changed into the Passive, when it is a Prepositional Verb as in-They laugh at us. (Active) We are laughed at by them. (Passive) ন্দাগুৰাটে
 - Prepositional Verb
- 100.(d) Promises must be kept. (Passive) The sentence is in Simple Present Tense. (Active). Modal (must) has been used.