RAILWAY
RECRUITMENT
BOARD

# RRB ALP 2024

## PRACTICE PAPER

Railway Recruitment Boards
Assistant Loco Pilot
Model Question Papers

aglasem.com

Railway Recruitment Board (RRBs)

# Assistant Loco Pilot & Technician

# PRACTICE SET 2

**DIRECTIONS**

1. This Question paper consists of 75 objective type questions, to be completed in maximum 60 min.
2. All questions are compulsory and 1/3rd mark will be deducted for each incorrect answer.

**1.** What will be the difference between SI and CI on a sum of ₹ 15000 for 2 yr at the same rate of interest of $12\frac{1}{2}\%$ per annum?
(a) ₹ 234.375 (b) ₹ 230.550
(c) ₹ 250.129 (d) ₹ 324.357

**2.** 8 men can finish a certain amount of work in 40 days. If 2 more men join with them, the days needed to do the same amount of work is
(a) 30 (b) 32 (c) 36 (d) 25

**3.** A motorist travelled between two towns, which are 65 km apart, in 2 h and 10 min. Find the speed.
(a) 600 m/min
(b) 500 m/min
(c) 700 m/min
(d) 200 m/min

**4.** *AB* and *CD* are lines, *P* is point on *AB*. A line *PQ* meets *CD* at *R*. If $\angle BPR = 30°$ and $\angle CRQ = 150°$, then
(a) *AB* and *CD* are perpendicular
(b) *AB* and *CD* are parallel
(c) *CD* and *PQ* are perpendicular
(d) None of the above

**5.** How many metres of carpet 63 cm wide will be required to cover the floor of a room 14 m by 9 m?
(a) 200 m (b) 210 m
(c) 220 m (d) 185 m

**6.** Simple interest of ₹ 7500, for 8 yr at 6% per annum is
(a) ₹ 4200 (b) ₹ 3600
(c) ₹ 2800 (d) ₹ 3400

**7.** A number of two digits is 6 times the sum of its digits. When the sum of its digits is added to the number, the result is 63. What is the number?
(a) 32 (b) 42
(c) 53 (d) 54

**8.** The result of division $a^3 + b^3$ by $a + b$ is
(a) $a^3 - ab + b^2$ (b) $a^2 + ab + b^3$
(c) $a^2 - ab + b^2$ (d) $a - ab - b^2$

**9.** A cricket player scored the following runs in 11 one day matches 65, 30, 7, 60, 65, 65, 30, 28, 30, 15, 30. The modal score is
(a) 27 runs (b) 30 runs
(c) 32 runs (d) 31 runs

**10.** The cube root of (– 216000) is
(a) – 60 (b) 60
(c) – 70 (d) 80

**11.** If a commission of 20% is given on the written price, the gain is 60%. What will be the percentage of gain if the commission is increased to 25%?
(a) 50% (b) 37%
(c) 62% (d) 80%

**12.** Which of the following fractions is less than $\frac{1}{5}$?
(a) $\frac{8}{35}$ (b) $\frac{8}{37}$
(c) $\frac{2}{11}$ (d) $\frac{8}{39}$

**13.** If 7 : 8 :: *x* : 24, then the value of *x* is
(a) 20 (b) 21
(c) 20.5 (d) 21.6

**14.** If the mean of the following data is 13.5, then the value of *p* is

| *x* | 5 | 10 | *p* | 20 | 25 |
|---|---|---|---|---|---|
| *f* | 10 | 10 | 10 | 2 | 8 |

(a) 15 (b) 150
(c) 10 (d) None of these

**15.** If $\sec\alpha = \frac{5}{4}$, then $\frac{\tan\alpha}{1+\tan^2\alpha}$ is equal to
(a) $\frac{9}{25}$ (b) $\frac{12}{25}$
(c) $\frac{3}{4}$ (d) $\frac{1}{25}$

**16.** In a certain code language, CLOUD is written as FORXG. How will the word RAINY be written in that code language?
(a) TILOZ (b) UDLQB
(c) MDJOX (d) STLNR

**17.** What will be the next term of given series?
1, 4, 10, 19, 31, 46, ?
(a) 64 (b) 61
(c) 58 (d) 55

**18.** Find the odd man out.
(a) ATNIR (b) CUTKR
(c) ADRO (d) TMAR

**19.** Select the related word from the given alternatives.
Curd : Milk : Oil : ?
(a) Paper (b) Coconut
(c) Flame (d) Lamp

**20.** Find the odd man out.
(a) 729 (b) 125 (c) 216 (d) 625

**21.** Find the missing number.

| | | |
|---|---|---|
| 21 | 17 | 13 |
| 12 | 19 | 19 |
| 9 | 14 | 17 |
| 24 | 22 | ? |

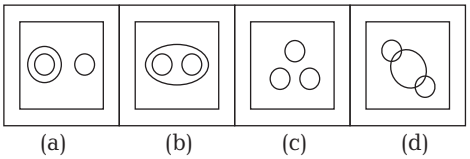
(a) 12 (b) 15 (c) 18 (d) 20

**22.** Seema and Reena are Sam's wives. Rita is Reena's step daughter. How is Seema related to Rita?
(a) Daughter (b) Sister
(c) Mother (d) Aunt

**23.** If South-East becomes East, North-West becomes West, South-West becomes South and so on, what will North become?
(a) North-West (b) South-West
(c) North-East (d) South-East

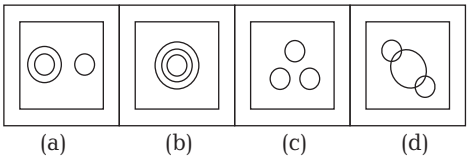
**Directions** (Q. Nos. 24 and 25) *Which of the given Venn diagrams out of* (*a*), (*b*), (*c*) *and* (*d*) *correctly illustrates the relationship among the following classes*?

**24.** Birds, Eagle, Ostrich



(a) (b) (c) (d)

**25.** City, District, Panchayat



(a) (b) (c) (d)

**Directions** (Q. Nos. 26 and 27) *In each of the following questions, there is some relationship between the two terms to the left of* (: :) *and the same relationship continues between the two terms to its right. Also, in each question, one term either to the right of* (::) *or to the left of it is missing. This term is given as one of the alternatives given below each question. Find out the missing term.*

**26.** AG : IO :: EK : ?
(a) LR (b) MS
(c) PV (d) SY

**27.** LOGIC : BHFNK :: CLERK : ?
(a) XVRPA (b) QBKJA
(c) LPRTU (d) JQDKB

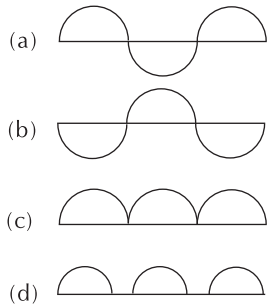
**28.** In this question, arrange the given words in a meaningful sequence and then choose the most appropriate sequence from amongst the alternatives provides below each question.
1. Child 2. Job
3. Marriage 4. Infant
5. Education
(a) 1, 3, 5, 2, 4 (b) 3, 5, 2, 1, 4
(c) 4, 1, 3, 5, 2 (d) 4, 1, 5, 2, 3

**29.** Eye is related to 'See', in the same way as Ear is to
(a) Ring (b) Sound
(c) Hear (d) Smell

**30.** If the second half of the following alphabets is written in the reverse order, which will be the 10th letter to left of 9th letter counting from the right end?
ABCDEFGHIJKLMNOPQRSTUVWXYZ
(a) I (b) C
(c) J (d) H

**31.** At any point P on the ground the angles of elevation of the top of a 10 m high building and that of a helicopter flying just over the building are 30° and 60° respectively. Find the height of the helicopter from the earth.
(Given, $\sin 30° = \frac{1}{2}$, $\cos 30° = \frac{\sqrt{3}}{2}$)
(a) $10\sqrt{3}$ m (b) 20 m
(c) $\frac{30}{\sqrt{3}}$ m (d) 30 m

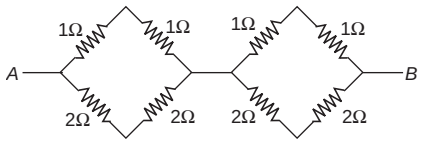
**32.** The output of the following circut is




**33.** Two spheres of same size are made of same metal, but one is hollow and the other is solid. Both are heated to the same temperature. Then
(a) hollow sphere will expand more than the solid one
(b) solid sphere will expand less than the hollow one
(c) both the spheres will expand equally
(d) only solid sphere will expand

**34.** The ratio of the wavelengths of first harmonic : second harmonic : third harmonic in a stretched string is
(a) 1 : 2 : 3 (b) 6 : 3 : 2
(c) 2 : 3 : 6 (d) 3 : 2 : 1

**35.** Find the equivalent resistance between *A* and *B*.




(a) $\frac{8}{3}\ \Omega$ (b) $\frac{4}{3}\ \Omega$
(c) $\frac{2}{3}\ \Omega$ (d) $\frac{16}{3}\ \Omega$

**36.** Which metal is abundantly found in earth's crust?
(a) Aluminium (b) Potassium
(c) Iron (d) Calcium

**37.** Which of the following elements substitutes hydrogen from dilute acids?
(a) Aluminium (b) Iron
(c) Gold (d) Copper

**38.** The atomic number of an element is 11 and the mass number is 23. The respective number of electrons, protons and neutrons in this atom will be
(a) 11, 11, 12 (b) 11, 12, 11
(c) 12, 11, 11 (d) 23, 11, 23

**39.** Which of the following reaction involves the combination of two elements?
(a) $CaO + CO_2 \longrightarrow CaCO_3$
(b) $4Na + O_2 \longrightarrow 2Na_2O$
(c) $SO_2 + \frac{1}{2} O_2 \longrightarrow SO_3$
(d) $NH_3 + HCl \longrightarrow NH_4Cl$

**40.** The ore to thorium is
(a) llemenite (b) Monazite
(c) Pitchblende (d) Galena

**41.** Which of the following vitamins is helpful in coagulation of blood?
(a) C (b) D (c) E (d) K

**42.** Muscle fatigue occurs due to accumulation of
(a) pyruvic acid (b) lactic acid
(c) oxaloacetic acid (d) uric acid

**43.** Anthrax is a serious disease of
(a) cattle (b) poultry
(c) fishes (d) All of these

**44.** Excessive secretion from the pituitary gland in children results in
(a) dwarfism
(b) gigantism
(c) weakening of bones
(d) None of the above

**45.** Which of the following wildlife sanctuaries is in Asom?
(a) Dudwa (b) Manas
(c) Sunderban (d) Kanha

**46.** How long does the moon take to revolve once around the Earth?
(a) A little less than 28 days
(b) A little longer than 28 days
(c) Equal to 28 days
(d) None of the above

**47.** Which country has become the world's largest steel producer in 2017, as per latest report published by World Steel Association (WSA)?
(a) Japan (b) India
(c) United States (d) China

**48.** Where is the Sahara Desert?
(a) South Africa (b) North Africa
(c) Europe (d) Asia

**49.** Amir Khusro was the court poet of
(a) Firoz Tughlaq (b) Sikandar Lodi
(c) Balban (d) Alauddin Khilji

**50.** The Kalahari Desert is in
(a) South-West Africa
(b) North Africa
(c) North-West Mexico
(d) South-West Asia

**51.** Red Cross was founded by
(a) J.H. Durant (b) Baden Powell
(c) Trygve Lie (d) Frederick Passey

**52.** The Hundred Year War was fought between
(a) France and Germany
(b) Germany and Austria
(c) France and England
(d) England and Austria

**53.** Seychelles is located in the
(a) Pacific ocean
(b) Indian ocean
(c) Atlantic ocean
(d) Mediterranean sea

**54.** With which of the following instruments does a sailor in a submarine see the objects on the surface of sea?
(a) Periscope (b) Telescope
(c) Gyroscope (d) Stereoscope

**55.** The Dronacharya Award for sports coaches was instituted in the year
(a) 1984 (b) 1985
(c) 1987 (d) 1988

**56.** Which State Government has launched 'Shakti' app for women's safety in the State?
(a) Himachal Pradesh
(b) Punjab
(c) Haryana
(d) Uttar Pradesh

**57.** The British Government declared for the first time that their intention in India is to gradually establish responsible government through
(a) The Regulating Act, 1773
(b) The Government of India Act, 1858
(c) The Cripps Proposal, 1942
(d) The August declaration, 1917

**58.** Who was the first Indian to receive the World Food Prize?
(a) Dr. Verghese Kurien
(b) Dr. M.S.Swaminathan
(c) Dr. Amita Patel
(d) None of the above

**59.** The first electric railway was opened in
(a) 1853 (b) 1885
(c) 1905 (d) 1929

**60.** Who wrote the 'Communist Manifesto'?
(a) Lenin (b) Karl Marx
(c) Stalin (d) None of these

**61.** Which State has the lowest area under forests?
(a) Gujarat (b) Uttar Pradesh
(c) Andhra Pradesh (d) Haryana

**62.** The boundary line between India and China is called
(a) McMahon line (b) Durand line
(c) Red line (d) Radcliffe line

**63.** It is 12 noon at Greenwich. What will be the time at a place situated at 55° east longitude?
(a) 8.40 am (b) 3.20 pm
(c) 5.00 am (d) 12.00 midnight

**64.** Which of these sports personality has won the 2017 sportsperson of the year award in India?
(a) Virat kohli (b) PV sindhu
(c) MS Dhoni (d) Sushil kumar

**65.** The UNO came into existence in
(a) 1946 (b) 1945
(c) 1947 (d) 1950

**66.** Broad Gauge Railway Locomotives, are manufactured by Indian Railways at
(a) Patiala (b) Varanasi
(c) Chittaranjan (d) (b) and (c)

**67.** What is "Wall Street"?
(a) Stock Exchange at Calcutta
(b) Stock Exchange at New York
(c) An Indian Township in Britain
(d) None of the above

**68.** Which of the following is not a country in Asia?
(a) Malaysia (b) Indonesia
(c) Romania (d) Combodia

**69.** Independence is my birthright and I shall get it' was said by
(a) Gopal Krishna Gokhale
(b) Mahatma Gandhi
(c) Lokmanya Tilak
(d) Lala Lajpat Rai

**70.** The Himalayan mountain system belongs to which one of the following?
(a) Fold mountains
(b) Volcanic mountains
(c) Block mountains
(d) None of the above

**71.** First Lady Governor of any state in India was
(a) Rajkumari Amrit Kaur
(b) Padmja Naidu
(c) Sarojini Naidu
(d) Sarla Grewal

**72.** Who discovered the 'Laws of floating bodies'?
(a) Newton (b) Wright Brothers
(c) Galileo (d) Archimedes

**73.** Which European city is situated on river Schelde?
(a) Brussels
(b) Vienna
(c) Antwerp
(d) Madrid

**74.** The title 'Devanam Piya' was given to
(a) Harsha
(b) Kanishka
(c) Ashoka
(d) Chandragupta Vikramaditya

**75.** Alauddin Khilji had enforced the price control policy to benefit
(a) soldiers (b) traders
(c) peasants (d) common man

## Answers

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *(a)* | 2 | *(b)* | 3 | *(b)* | 4 | *(b)* | 5 | *(a)* | 6 | *(b)* | 7 | *(d)* | 8 | *(c)* | 9 | *(b)* | 10 | *(a)* |
| 11 | *(a)* | 12 | *(c)* | 13 | *(b)* | 14 | *(a)* | 15 | *(b)* | 16 | *(b)* | 17 | *(a)* | 18 | *(c)* | 19 | *(b)* | 20 | *(d)* |
| 21 | *(b)* | 22 | *(c)* | 23 | *(a)* | 24 | *(b)* | 25 | *(b)* | 26 | *(b)* | 27 | *(d)* | 28 | *(d)* | 29 | *(c)* | 30 | *(d)* |
| 31 | *(d)* | 32 | *(d)* | 33 | *(c)* | 34 | *(a)* | 35 | *(a)* | 36 | *(a)* | 37 | *(b)* | 38 | *(a)* | 39 | *(b)* | 40 | *(b)* |
| 41 | *(d)* | 42 | *(b)* | 43 | *(a)* | 44 | *(b)* | 45 | *(b)* | 46 | *(a)* | 47 | *(d)* | 48 | *(d)* | 49 | *(d)* | 50 | *(a)* |
| 51 | *(a)* | 52 | *(c)* | 53 | *(b)* | 54 | *(a)* | 55 | *(b)* | 56 | *(a)* | 57 | *(d)* | 58 | *(b)* | 59 | *(d)* | 60 | *(b)* |
| 61 | *(d)* | 62 | *(a)* | 63 | *(b)* | 64 | *(b)* | 65 | *(b)* | 66 | *(c)* | 67 | *(b)* | 68 | *(c)* | 69 | *(c)* | 70 | *(a)* |
| 71 | *(c)* | 72 | *(d)* | 73 | *(c)* | 74 | *(c)* | 75 | *(a)* | | | | | | | | | | |

# Hints & Solutions

**1.** Required difference

$$= 1500\left(\frac{25}{2\times 100}\right)^2$$

$$= \frac{15000}{64}$$

$$= ₹\ 234.375$$

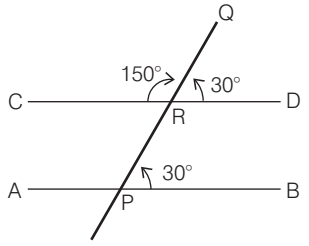
**2.** Given, $8 \times 40 = 10 \times ?$

$$\Rightarrow \quad ? = \frac{8\times 40}{10} = 32 \text{ days}$$

**3.** Required speed $= \left(\frac{65\times 1000}{2\times 60+10}\right)$

$$= 500 \text{ m/min}$$

**4.**




$\angle BPR = \angle DRQ = 30°$
$\angle CRQ = \angle APR = 150°$
$\angle CRD = \angle APB = 180°$ (line)

Hence, $AB$ and $CD$ are parallel.

**5.** Required carpet to cover the floor

$$= \frac{14\times 9\times 100\times 100}{63} \text{ cm}$$

$$= 20000 \text{ cm} = 200 \text{ m}$$

**6.** Simple interest $= \frac{7500\times 8\times 6}{100}$

$$= ₹\ 3600$$

**7.** Two digits number $= 10x + y$

Given, $10x + y = 6(x + y)$ …(i)

and $(10x + y) + (x + y) = 63$ …(ii)

After solving Eqs. (i) and (ii),

$x = 5$ and $y = 4$

$\therefore$ Required number $= 10\times 5 + 4 = 54$

**8.** $\frac{a^3+b^3}{a+b} = \frac{(a+b)(a^2-ab+b^2)}{(a+b)}$

$$= a^2 - ab + b^2$$

**9.** Frequency is 30, so mode is also 30.

**10.** From option (a)

$$(-60)\times(-60)\times(-60) = -216000$$

$$= (-60)^3$$

**11.** Marked price of article = ₹ 100

$\therefore$ Selling price = ₹ 80

$\therefore$ Cost price $= \frac{100}{160}\times 80 =$ ₹ 50

After discount = 25%

Selling price = ₹ 75

$\therefore$ Gain per cent $= \frac{25}{50}\times 100$

$$= 50\%$$

**12.** $\frac{1}{5} = \frac{2}{10} = \frac{8}{40}$

$\therefore$ $\frac{2}{11}$ is smaller than $\frac{1}{5}$.

**13.** $\frac{7}{8} = \frac{x}{24}$

$\Rightarrow \quad 8x = 7\times 24$

$\therefore \quad x = \frac{7\times 24}{8} = 21$

**14.**

| $x_1$ | $f_1$ | $f_1 \times x_1$ |
|---|---|---|
| 5 | 10 | 50 |
| 10 | 10 | 100 |
| $p$ | 10 | $10p$ |
| 20 | 2 | 40 |
| 25 | 8 | 200 |
| | $\sum f_1 = 40$ | $\sum f_1x_1 = 10p + 390$ |

$\therefore \quad$ Mean $(\bar{x}) = \frac{\sum f_1x_1}{\sum f_1} = \frac{10p+390}{40}$

$\Rightarrow \quad 13.5 = \frac{10p+390}{40}$

$\Rightarrow \quad 13.5\times 40 = 10p + 390$

$\Rightarrow \quad 540 - 390 = 100p \Rightarrow p = \frac{150}{10} = 15$

**15.** $\because \sec\alpha = \frac{5}{4}$

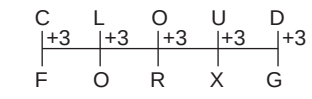
$\therefore \quad \tan\alpha = \sqrt{\sec^2\alpha - 1}$

$$= \sqrt{\frac{25}{16}-1} = \sqrt{\frac{25-16}{16}} = \sqrt{\frac{9}{16}} = \frac{3}{4}$$

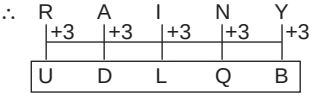
Now, $\frac{\tan\alpha}{1+\tan^2\alpha} = \frac{3/4}{1+(3/4)^2} = \frac{3/4}{1+9/16}$

$$= \frac{3/4}{25/16} = \frac{12}{25}$$

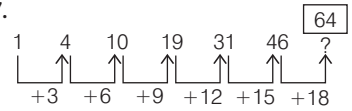
**16.**




$\therefore$



**17.**




**18.** Except (c), all contains alphabet T.

**19.** Curd is made from milk. Similarly, oil is made from coconut.

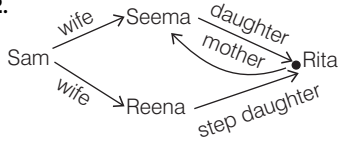
**20.** Except 625, all others are perfect cubes.

**21.** $(12 - 9) + 21 = 24$

and $(19 - 14) + 17 = 22$

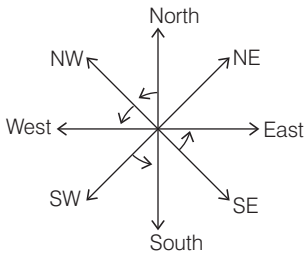
$\therefore$ $(19 - 17) + 13 = ?$

**22.**




Hence, Seema is mother of Rita.

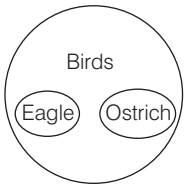
**23.**



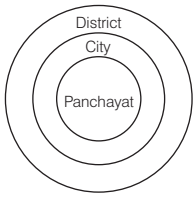

South-East becomes East. It means the direction indicator has been rotated through 45° anti-clockwise.

$\therefore$ North will become North-West.

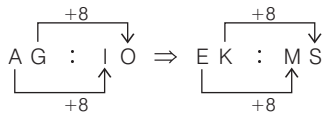
**24.**



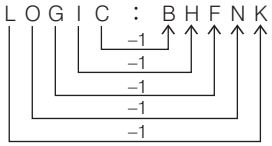

**25.**




**26.**




**27.**



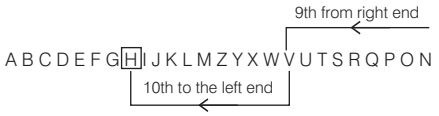

⇒ CLERK : JQDKB

**28.** Infant → Child → Education → Job → Marriage

i.e., 4, 1, 5, 2, 3

**29.** The function of 'Eye' is to 'See' and that of 'Ear' is to Hear.

**30.**




9th from right end is V and 10th to the left of V is H.

**46.** The Moon takes to revolve once around the Earth in the prograde direction and completes one revolution in about 27.323 days (a sidereal month).

**47.** China has remained the world's largest steel producer in 2017 by producing 831.7 million tonnes (MT), according to a latest report published by World Steel Association (WSA). Japan has acquired 2nd position while India overtook the US to become the world's 3rd largest steel producer.

**50.** The Kalahari Desert is a large semi-arid sandy savanna in South-West Africa extending for 900,000 square kilometres, covering much of Botswana, parts of Namibia and regions of South Africa.

**51.** The Red Cross is a private humanitarian institution founded in 1863 in Geneva, Switzerland, by Henry Dunant and Gustave Moynier.

**52.** The Hundred Years' War was a series of conflicts waged from 1337 to 1453 by rulers of the Kingdom of England, against the rulers of the Kingdom of France, over the succession to the French throne.

**54.** A telescope is an optical instrument that aids in the observation of remote objects by collecting electromagnetic radiation (such as visible light).

A gyroscope is a device used for measuring or maintaining orientation and angular velocity.

A stereoscope is a device for viewing a stereoscopic pair of separate images as a single three-dimensional image.

**56.** 'Shakti' app has been launched to ensure safety and protection of women in the State. it would be available in both Hindi and English languages and would not require internet connectivity.

**60.** On February 21, 1848, The Communist Manifesto is written by Karl Marx with the assistance of Friedrich Engels and was published in London by a group of German-born revolutionary socialists known as the Communist League.

**61.** The state with least area under forests in India is Haryana with approx. 1,584 sq km of forest coverage.

**66.** A broad gauge railway is a railway with a track gauge broader than the 1,435 mm standard-gauge railways. The broad gauge railway locomotives are manufactured by Indian railway at chittaranjan in Asansol.

**70.** Fold Mountains are mountains that form mainly by the effects of folding on layers within the upper part of the Earth's crust. Himalaya's mountain ranges are the best example of the folded mountains.

**72.** Laws of floating bodies is propounded by Archimedes. According to the principle the upward buoyant force that is exerted on a body immersed in a fluid, whether fully or partially submerged, is equal to the weight of the fluid that the body displaces and acts in the upward direction at the center of mass of the displaced fluid.

**73.** Antwerp is a Flemish city in Belgium. It is situated on the River Scheldt which linked to the North Sea by the Westerschelde estuary.

**74.** Ashoka in his Rock and Pillar Edicts used his name as Devnampriya or Priyadasi. He has mentioned his name as Ashoka only in one Edict named as Maski Edict.

**75.** According to Alauddin Khalji courtier Amir Khusrau the price control policy's main objective to the welfare of the general public. However, Ziauddin Barani states that the Sultan's objective was to maintain an unprecedentedly large army (the low prices would make low salaries acceptable for the soldiers).