ತರಗತಿ – 10

ಕರ್ನಾಟಕ ಸರ್ಕಾರ

ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆ

01-E

ಕರ್ನಾಟಕ ಶಾಲಾ ಗುಣಮಟ್ಟ ಮೌಲ್ಯಾಂಕನ ಮತ್ತು ಅಂಗೀಕರಣ ಪರಿಷತ್ತು (ರಿ.)

6ನೇ ಅಡ್ಡ ರಸ್ತೆ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003.

ಕಲಿಕಾ ಸಾಧನಾ ಸಮೀಕ್ಷೆ – 2018–19

ಮಾಧ್ಯಮ : ಇಂಗ್ಲೀಷ್

ವಿಷಯ : ವಿಜ್ಞಾನ, ಸಮಾಜ ವಿಜ್ಞಾನ, ಗಣಿತ

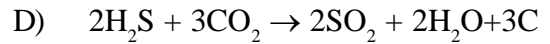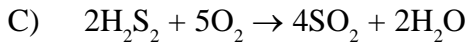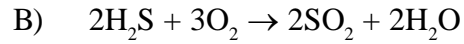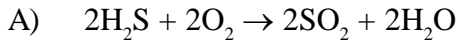ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು :   ಸಮಯ : 3.00 ಗಂಟೆ

1. ಪ್ರಶ್ನೆಗಳನ್ನು ಮೊದಲು ಓದಿ ಅರ್ಥೈಸಿಕೊಳ್ಳುವುದು.

2. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಬಲಗಡೆ ನೀಡಿರುವ ಸಂಖ್ಯೆಯನ್ನು ಓ.ಎಂ.ಆರ್.ನಲ್ಲಿ ನಿಗದಿಪಡಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ಕಡ್ಡಾಯವಾಗಿ '✓' ಮಾಡುವುದು.

3. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ A, B, C, D ಎಂಬುದಾಗಿ 4 ಆಯ್ಕೆಯ ಉತ್ತರಗಳನ್ನು ನೀಡಲಾಗಿರುತ್ತದೆ. ಅವುಗಳಲ್ಲಿ ಸರಿಯಾದ ಒಂದು ಉತ್ತರಕ್ಕೆ ಮಾತ್ರ ಓ.ಎಂ.ಆರ್.ನಲ್ಲಿ '✓' ಮಾಡುವುದು.

   ಉದಾಹರಣೆ: 2ನೇ ಪ್ರಶ್ನೆಗೆ B ಸರಿ ಉತ್ತರವಾಗಿದ್ದಲ್ಲಿ ಹೀಗೆ '✓' ಮಾಡುವುದು.   2. | A | B ✓ | C | D |

4. ಓ.ಎಂ.ಆರ್.ನಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ನಿಗದಿಪಡಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಸಹಿ ಮಾಡುವುದು ಹಾಗೂ ಶಿಕ್ಷಕರು ಶಿಕ್ಷಕರಿಗೆ ನಿಗದಿಪಡಿಸಿರುವ ಸ್ಥಳದಲ್ಲಿ ಸಹಿ ಮಾಡುವುದು.

1) Translate the following statement into chemical equation and then balance it.

Hydrogen sulphide gas burns in air to give water and Sulphur dioxide.

A) $2H_2S + 2O_2 \rightarrow 2SO_2 + 2H_2O$

B) $2H_2S + 3O_2 \rightarrow 2SO_2 + 2H_2O$

C) $2H_2S_2 + 5O_2 \rightarrow 4SO_2 + 2H_2O$

D) $2H_2S + 3CO_2 \rightarrow 2SO_2 + 2H_2O + 3C$

2) Take 50ml of water in beaker A and copper sulphate solution in beaker B. Add four spatulas of ammonium nitrate and fine iron fillings to beakers A and B respectively. State which reaction is exothermic and which one is endothermic.
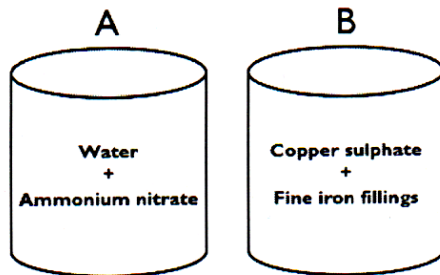

A) Beaker A - Endothermic reaction, Beaker B - Exothermic reaction

B) Beaker A - Exothermic reaction, Beaker B - Endothermic reaction

C) Beaker A - Endothermic reaction, Beaker B - Endothermic reaction

D) Beaker A - Exothermic reaction, Beaker B - Exothermic reaction

3) **Carbonated water (H_2CO_3) is an ingredient in soft drinks. A reaction takes place when carbonated water breaks down to produce water (H_2O) and carbon dioxide (CO_2). This occurs when a can of soft drink is opened and some of the carbon dioxide fizzes out.**

The above reaction is an example of a :

A) Combination reaction   B) Double displacement reaction

C) Decomposition reaction   D) Displacement reaction

4) **Why is curd not kept in brass or copper vessel?**
  A) Curd is basic in nature. Basic substances when reacts with brass or copper metal produces rusting in the vessel.
  B) Curd is produced by acidification of milk. This process of acidification is not possible in brass or copper vessel. Curd is stored in glass vessel.
  C) Curd contains acetic acid. When curd is kept in brass or copper vessel, metal react with acid and liberate hydrogen gas which may spoil the curd.
  D) Curd contains lactic acid. When curd is kept in brass or copper vessel, metal react with acid and liberate hydrogen gas which may spoil the curd.

5) **Why does toothpaste helps in preventing tooth decay?**
  A) Toothpaste is basic in nature. Our mouth contains acid, toothpaste helps in neutralizing it in the mouth.
  B) Toothpaste consist of useful chemicals which prevents in tooth decaying.
  C) Toothpaste is acidic in nature and contains acetic acid. This helps in fighting infections and helps in preventing tooth decay.
  D) Toothpaste is basic in nature and sour in taste. It helps in cleaning of tooth because of its corrosive abilities.

6) **There are four different solutions kept in four different test tubes (TT). What color is expected when a piece of red litmus paper is dropped in each test tube?**
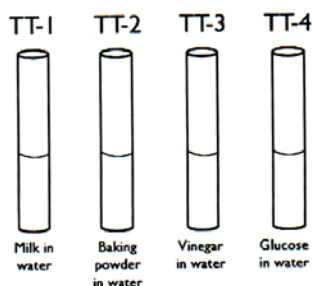
A) TT-1 = Red, TT2 = Blue, TT3 = Red, TT4 = Red
B) TT-1 = Blue, TT2 = Blue, TT3 = Red, TT4 = Red
C) TT-1 = Blue, TT2 = Red, TT3 = Blue, TT4 = Blue
D) TT-1 = Blue, TT2 = Red, TT3 = Blue, TT4 = Red

7) **A farmer was unhappy because of his low crop yield. He discussed the problem with an agricultural scientist and realized that the soil of his field was acidic. What remedy would you suggest the farmer to neutralize the soil?**
A) Add Sulphur fertilizers to the soil
B) Add limestone powder to the soil
C) Add baking soda to the soil
D) Add sand to the soil

8) **In the following reaction, identify the salt formed.**
$Ca(OH)_2 + Cl_2 \rightarrow$ _____ $+H_2O$
A) Bleaching powder
B) Baking soda
C) Washing soda
D) Sodium Hydrogencarbonate

9) **Match the type of salt with their application.**

SNo.	Type of salt	SNo.	Use
1.	Plaster of paris	W	Cleaning surfaces
2.	Washing soda	X	Making ceilings
3.	Baking soda	Y	Detergents
4.	Bleaching powder	Z	Baking

A) 1 - W, 2 - X, 3 - Y, 4 - Z
B) 1 - X, 2 - Z, 3 - W, 4 - Y
C) 1 - X, 2 - Y, 3 - Z, 4 - W
D) 1 - Y, 2 - Z, 3 - W, 4 - X

10) **Which is correct order as per the reactivity of the metals.**
A) Na > Fe > Cu > Au
B) Fe > Na > Cu > Ag
C) Cu > Zn > Fe > Ag
D) Zn > Cu > Fe > Ag

11) **Recognize the correct equation for the reaction of iron with steam.**
A) $Fe + H_2O \rightarrow FeO + H_2$
B) $3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$
C) $2Fe + 2H_2O \rightarrow Fe_3O_4 + 2H_2$
D) $Fe + 2H_2O \rightarrow FeO_2 + 2H_2$

12) **Electric wires are made of copper and are covered with rubber like material because.**
A) Rubber is a good conductor of electricity and allow current to flow through it.
B) Copper is a good conductor of electricity while rubber provides the necessary insulation.
C) Rubber covering helps to avoid corrosion in copper
D) Rubber forms oxide layer on copper wire surface which stops the reaction with air

13) **Several steps are involved in the extraction of pure metal from ores. In the given flow chart, what is the process X used in the extraction of zinc carbonate and iron carbonate?**
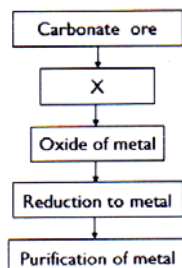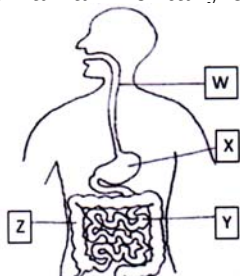

A) Electrolysis of molten ore
B) Roasting
C) Calcination
D) Refining

14) **In which of the following groups of organisms, food material is broken down outside the body and then absorbed?**
   A) Mushroom, Green plants, Amoeba
   B) Yeast, Mushroom, Bread mold
   C) Paramecium, Amoeba, Cuscuta
   D) Cuscuta, Lice, Tapeworm

15) **Figure shows parts in human alimentary canal. What are W, X, Y and Z?**

   A) W = Oesophagus, X = Large intestine, Y = Small intestine, Z = Liver
   B) W = Oesophagus, X = Small intestine, Y = Stomach, Z = Large intestine
   C) W = Oesophagus, X = Stomach, Y = Small intestine, Z = Large intestine
   D) W = Oesophagus, X = Stomach, Y = Pancreas, Z = Large intestine

16) **How does bile helps during digestion?**
   A) Absorption of fat
   B) Emulsification of fat
   C) Digestion of fat
   D) Assimilation of fat

17) **Figure shows excretion system in human body. Identify the organ which filter extra water and toxins from the blood?**
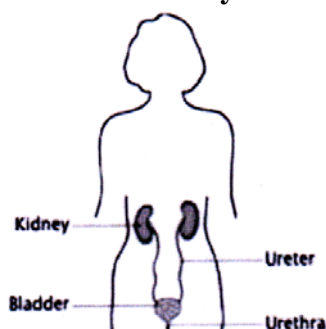
   A) Kidney
   B) Ureter
   C) Bladder
   D) Urethra

18) **Hormones are secreted by endocrine glands and have specific functions. Match each hormone with their function.**

SNo.	Hormone	SNo.	Functions
1.	Growth hormone	W	Development of male reproductive organs
2.	Insulin	X	Stimulates pituitary gland
3.	Testosterone	Y	Regulates metabolism for body growth
4.	Releasing hormone	Z	Regulates body sugar level

   A) 1 - Z, 2 - Y, 3 - W, 4 - X
   B) 1 - X, 2 - Z, 3 - W, 4 - Y
   C) 1 - W, 2 - X, 3 - Y, 4 - Z
   D) 1 - Y, 2 - Z, 3 - W, 4 - X

19) **Following figure shows parts of human brain. Which of the following statement is true.**
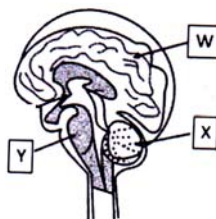
    A)   X is Cerebellum and it controls memory

    B)   W is Cerebrum and it coordinates sensory input and motor input

    C)   Y is Medulla and is responsible for muscle co-ordination and balance

    D)   W is Cerebrum and it controls vital processes such as heart rate and breathing

20) **Which of these is not a reflex action?**

    A)   Salivation   B)   Secretion of sweat

    C)   Flexion due to needle prick   D)   Blinking of eyes due to strong light

21) **The movement in Figure 1 and Figure 2 are :**
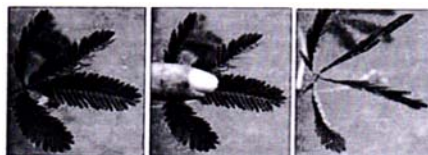

Figure 1: Movement of plant towards light

Figure 2: Movement of leaves of sensitive plant

    A)   Independent of growth

    B)   Dependent of growth

    C)   Figure 1- Independent of growth and Figure 2 - Dependent of growth

    D)   Figure 1- Dependent of growth and Figure 2 - Independent of growth

22) **The given graph is plotted for V-I to verify Ohm's law. The resistance used in the experiment is :**

    A)   1 Ω B)   1.5 Ω C)   2 Ω D)   3 Ω
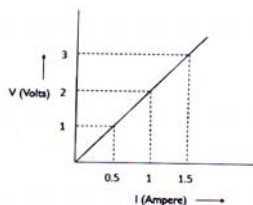
23) **How will three resistors (R1, R2 and R3) each of resistance 6Ω be connected so that the combination has resistance of 9 Ω.**
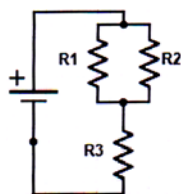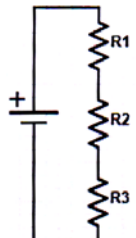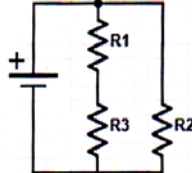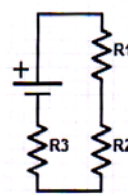
           A)   B)   C)   D)

24) **An electric bulb is connected to a 240V generator. The current flowing through it is 0.25A. What is the power of the bulb?**

    A)   100W   B)   120W   C)   80W   D)   60W

25) **Which is the direction of magnetic lines of force acting on a current carrying wire placed in a magnetic field?**
   A) along the electric current
   B) perpendicular to magnetic field
   C) opposite to the electric current
   D) opposite to magnetic field

26) **Equal magnitude of current is flowing in following four circular rings. Which circular ring has the strongest magnetic field at the center?**

   A)   B)   C)   D)

27) **Which of the following rule is used to determine the direction of rotation of DC motor?**
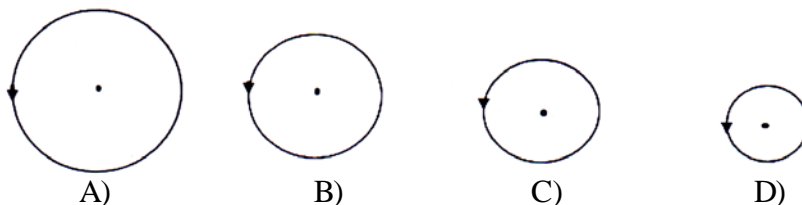   A) Coloumb's Law
   B) Lenz's Law
   C) Fleming's Right-hand Rule
   D) Fleming's Left-hand Rule

28) **There are two coils wound on a non-conducting cylindrical rod as shown in figure. Initially, the plug key is not inserted. Then the plug key is inserted and later removed. What is the observation in galvanometer?**
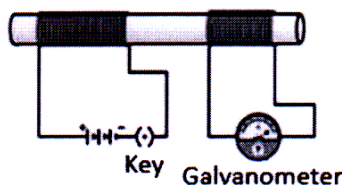
Key   Galvanometer

   A) There is a momentary deflection in the galvanometer but it dies out shortly and there is no effect when the plug key is removed.
   B) There are momentary galvanometers deflections that die out shortly, the deflections are in opposite directions.
   C) The deflection in the galvanometer remains zero throughout
   D) There are momentary galvanometers deflection in the same direction when the plug key is inserted and removed.

29) **In the given food pyramid, suppose the amount of energy at fourth trophic level is 2 kJ, what will be the energy available at the producer level?**
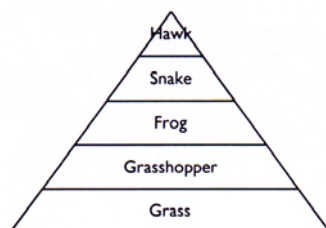
   A) 2 kJ   B) 20 kJ   C) 200 kJ   D) 2000kJ

30) **Rohini is celebrating her birthday and decides not to use disposable plastic plates and cups for the party because they are made of :**
   A) materials with light weight
   B) toxic materials
   C) non-biodegradable materials
   D) biodegradable materials

31) **On the map of India given below, identify the latitude which is marked by the dotted line.**

A) Equator B) Tropic of Capricorn
C) Tropic of Cancer D) Arctic Circle

32) **If there were no Himalayas, India would have been a desert because -**
A) the hot winds from Central Asia would easily blow in India as there would be no mountains to stop them.
B) there would be no thick forests which now cover the slopes of the Himalayas and vegetation would be scanty.
C) there would be no mountains and the region would be covered by vast stretches of sandy plains.
D) there would be no obstruction of the rain bearing winds and therefore no rain.
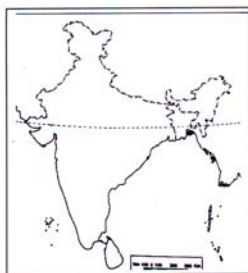
33) **Identify the option which has both statements about Western Ghats and Eastern Ghats correctly stated.**

Options	Western Ghats	Eastern Ghats
A)	They are continuous mountain range	They are not continuous
B)	They are lower than the Eastern Ghats	They are higher than the Western Ghats
C)	They extend from Mahanadi valley in the north till the Nilgiri hills in the south	They extend from Tapi valley in the north to Kanyakumari.
D)	They run parallel to the west coast of India	They lie perpendicular to the east coast of India

34) **The convectional rainfall that occurs in the summer season in the state of Karnataka is called-**
A) Andhis B) Kal Baisakhi C) Coffee Blossom D) Mango Showers

35) **The map of India given below shows the pressure distribution over the mainland of India and the surrounding seas. The arrows shown on the map are the direction of the South West monsoon winds. Study the pressure and wind system and identify the season.**

A) The Summer Season B) The Winter Season
C) The Rainy Season D) The Retreating Monsoon Season

36) **The map of India given below shows the annual distribution of rainfall.**

In which rainfall zone would you find Tropical Evergreen Forests? In areas with rainfall -
A) above 200 cm   B) between 100 to 200 cm
C) between 60 to 100 cm   D) under 60 cm

37) **These soils are derived from the basalt rock, high in clay content, retentive of moisture and extremely compact. This soil is -**
A) Alluvial Soil   B) Black Soil   C) Red Soil   D) Laterite Soil

38) **The flow diagram below shows a farming system that Venkatesh follows :**

Venkatesh has -	Venkatesh does -	Venkatesh grows -
i. 1 hectare of land ii. 2 bullocks iii. Wooden plough iv. Seeds and manure v. Family labour	i. Ploughing ii. Sowing iii. Transplanting iv. Harvesting	i. Rice ii. Vegetables (both are consumed by Venkatesh and his family. Not sold in the market)

Identify **the type of farming** system that Venkatesh follows -
A) Mixed farming   B) Commercial farming
C) Intensive farming   D) Subsistence type of farming

39) **The Damodar Valley Project was set up to provide multiple benefits. Identify the benefit which helps in the conservation of water of river Damodar.**
A) Development of fishing   B) Generation of hydro-electricity
C) Dams to store flood water for irrigation   D) Provide recreational facilities

40) **One of the following methods given below help in soil conservation.**
A) Practicing shifting cultivation   B) Planting trees around the farm land
C) Encouraging grazing of animals   D) Allowing run-off to flow at a rapid speed

41) **Rahul wants to open a savings account in a bank. He goes to the bank and meets the Manager. The following are the account opening steps explained by the Bank Manager.**
a. Deposit the initial amount to the account
b. Submit the bank account form duly filled.
c. Officers will verify all the particulars submitted.
d. Give reference for opening your Bank account.
e. Fill up the Bank account form or proposal form
Identify the correct sequence of opening a bank account
A) e, a, c, b, d   B) e, d, b, c, a   C) a, e, d, c, b   D) b, a, c, d ,e

42) **Identify from the list given below the Financial Institutions that fund self-employment schemes.**
A) Khaitan & Co.   B) Reserve Bank of India
C) Reliance Limited   D) Industrial Development Bank of India (IDBI)

43) **Identify the indicator which is <u>NOT</u> a measure of Human Development -**

    A)   Literacy attainment   B)   Life Expectancy

    C)   Per capita income   D)   National Income

44) **The Panchayati Raj is responsible for the following -**

    a.   Expansion of Railways

    b.   Maintenance of National Highways

    c.   Sanitation and public health

    d.   Agricultural development and expansion of irrigation

Identify which of the stated functions of the Panchayati Raj are true :

    A)   Only a and b   B)   Only c and d   C)   Only a and d   D)   Only c and a

45) **Read the newspapers clippings and answer the question that follows :**

Dalits are still segregated with little access to temples, water sources and upper caste areas .... *as per the survey conducted by Times of India, August 3, 2009*	Dalit man thrashed for riding bike in front of a sarpanch's house in Madhya Pradesh .... *The Tribune, June 25, 2018*

Which Fundamental Right **has been violated** in the above cases :

    A)   Right to Freedom   B)   Right against Exploitation

    C)   Right to Equality   D)   Right to freedom of Religion

46) **From the pictures identify those that belongs to the unorganised sector**

    A)   Pictures 1 and 2   B)   Pictures 3 and 4   C)   Pictures 1 and 4   D)   Pictures 2 and 3

47) **The two countries which accepted the Panchasheela principles are**

    A)   India and Egypt   B)   Maldives and Sri Lanka

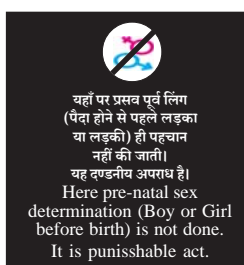   C)   Nepal and Bhutan   D)   India and China

48) **Identify which of the Steel Plant in India was set up with the assistance from USSR (present Russia).**

    A)   Tata Iron and Steel Plant (TISCO)   B)   Rourkella Steel Plant

    C)   Bokaro Steel Plant   D)   Visvesvaraya Steel Plant

49) **A large section of the India's population are unemployed because -**

    A)   many people are self-employed

    B)   over dependency on mining and industries

    C)   lack of skilled based education

    D)   abolition of child labour

50) **Read the advertisement given below and answer the question that follows :**

यहाँ पर प्रसव पूर्व लिंग
(पैदा होने से पहले लड़का
या लड़की) ही पहचान
नहीं की जाती।
यह दण्डनीय अपराध है।
Here pre-natal sex
determination (Boy or Girl
before birth) is not done.
It is punisshable act.

What is the above campaign about? Fight against -
A) Inequality
B) Gender discrimination
C) Exploitation
D) Illiteracy

51) **The map below shows a sea-route to India during the 15th century.**
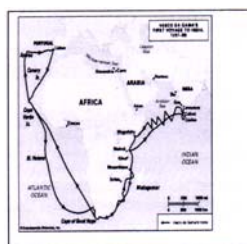
Identify the significance of the sea-route shown in the map
A) Columbus discovered this route to reach America and boost trade and commerce
B) Discovery of the sea route to India via cape of Good Hope increased trade between India and Europe
C) Marco Polo sailed through this route to reach China.
D) Ibn Batuta took this route to reach the court of Delhi Sultans.

52) **One of the following option is incorrectly matched. Identify the incorrect match.**
A) Periyar - Temple entry movement
B) Dayanand Sarasvati - Back to the Vedas
C) Jyotiba Phule - Gulamgiri
D) Vivekananda - Theosophical Society

53) **Tipu Sultan and Hyder Ali invited the French experts to modernize the army and to improve the quality of the artifacts to gain better share in the market. The French wanted to help Tipu Sultan because the French -**
A) were fighting against the British both in India and America
B) and Tipu were good friends
C) were unhappy with the other native chiefs
D) were impressed by his military organization.

54) **The images given below are of Rani Chennamma and Rani Laxmibai. They fought against a policy introduced by Lord Dalhousie. Identify the policy for which they fought against the British.**

A) Subsidiary Alliance
B) Doctrine of Lapse
C) Dyarchy
D) Mahalwari System

55) **Consider the following statement related to the First War Independence in India.**
   a.   The Indian soldiers were happy to work overseas
   b.   Doctrine of Lapse and Subsidiary Alliance lead to the annexation of Jhansi and Mysore
   c.   The mutiny lacked direction and leadership
   d.   Industrial Revolution in England created a huge market for the weavers and craftsmen in England
   Which of the statement given above is/are correct
   A) Only d   B) a and c   C) b and c   D) d and b

56) **A new phase of history of India began after 1857. Several important changes were introduced. One important change being :**
   A) The East India Company carried on with the same land revenue policies.
   B) Transferred the powers of the East India Company to the British Crown.
   C) The Governor-General of India was the representative of the Crown.
   D) More soldiers were recruited from Bihar and Awadh.

57) **Read the text given in the two boxes and answer the question that follows :**

This Act was further built on the report submitted by Motilal Nehru in 1928. It also formed the basis for the formation of the Constitution of India	Indians took active part in the First World War, the Secretary of State argued in favour of providing more seats to the Indians in the matter of administration.

   The above two Acts which were crucial in the process of constitutional development are -
   A) Pitts Act 1784 and the Charter Act of 1813
   B) Indian council Act of 1909 and Indian Government Act 1858
   C) Indian Council Act 1892 and Indian Council Act 1861
   D) Indian Council Act of 1919 and Indian Government Act 1935

58) **Manjunath is a farmer and lives in Mysore which is a part of British India. He is the owner of the land and tills the land. He pays land tax directly to the East India Company unlike other farmers of Bengal. This form of paying taxes directly to the Company comes under the -**
   A) Permanent settlement of Bengal   B) Mahalwari system
   C) Ryotwari system   D) Zamindari system

59) **The British wanted a stronger state under Maharaja Ranjit Singh of Punjab -**
   A) to protect British India from the north-west invasion
   B) to help in fighting against the other kingdoms
   C) because Maharaja Ranjit Singh was a personal favourite of the British
   D) Because there was lack of trust between the British and the other kings.

60) **Consider the two statements given below. One is the statement (S) and the other is the reason (R)**
   Statement (S) : The Indian king had to keep the British Army in his kingdom according to the new policy of subsidiary alliance.
   Reason (R) : The British could keep an eye on the Indian kings so that they do not ally with the other kings.
   As per the above mentioned statement and reason given, which of the following is correct?
   A) S and R both are true and S is the correct interpretation of R
   B) S and R both are true but S is not the correct interpretation of R
   C) S is true but R is false
   D) S is false but R is true.

61) In an arithmetic progression, the difference between two consecutive terms is always:

A) Increasing

B) Constant

C) Decreasing

D) Varying

62) In the given figure DE is a line that is parallel to the side AC of the triangle ABC. Then,

A) $\dfrac{BD}{DA} = \dfrac{BE}{BA}$

B) $\dfrac{BD}{DA} = \dfrac{AE}{EC}$

C) $\dfrac{BD}{DA} = \dfrac{BE}{BC}$

D) $\dfrac{BD}{DA} = \dfrac{BE}{EC}$
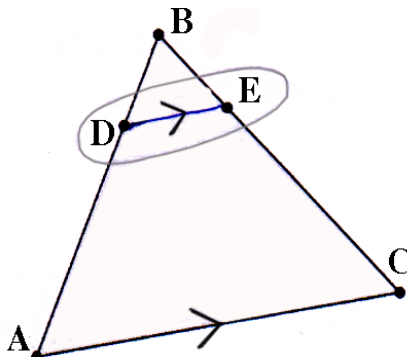
63) The solution (when it exists) of a pair of linear equations represented by the lines is:

A) A point on one of the lines but not the other.

B) The origin.

C) A point on both the lines.

D) A point that is not on either line.

64) A secant of a circle becomes its tangent when:

A) The end points of the corresponding chord coincide.

B) It passes through the centre of the circle.

C) The corresponding chord is bisected by the perpendicular drawn from the centre to it.

D) It does not bisect the circle.

65) If an arc of a circle subtends an angle of 60° at the centre of the circle then:

A) Area of the minor sector is $\dfrac{1}{3}$ the area of the circle.

B) Area of the minor sector is $\dfrac{1}{6}$ the area of the circle.

C) Area of the minor sector is $\dfrac{1}{5}$ the area of the circle.

D) Area of the minor sector is $\dfrac{1}{4}$ the area of the circle.

66) In the given figure AC:CB is
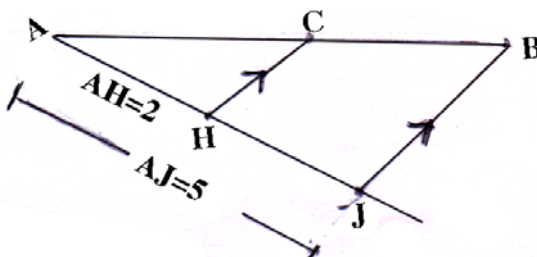

A) 2:5   B) 2:3   C) 2:7   D) 3:7

67) In the given figure AB is a line segment. C and D are the points of trisection of AB. The point D divides CB in the ratio:
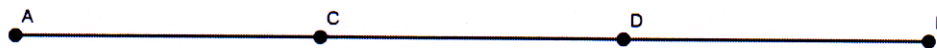
A) 1:1　　　　B) 2:1　　　　C) 1:2　　　　D) 1:3

68) The length of hypotenuse of a right-angle triangle is equal to:
A) The sum of the squares of the other two sides of it
B) The square root of the sum of the other two sides of it.
C) The square root of the sum of the squares of the other two sides of it.
D) The square of the sum of the square roots of the other two sides of it.

69) The equation of a line parallel to $6x + 3y - 5 = 0$ is
A) $y = 2x + 5$　　B) $y = -2x + 3$　　C) $y = 3x + 2$　　D) $y = -3x + 1$

70) 25 is a term of the arithmetic progression.
A) 2, 4, 6, 8,......　B) 1, 5, 9, 13,......　C) 10, 20, 30,......　D) 3, 7, 9, 11,......

71) A factory producing motorcycles increases its production by 3000 motorcycles every year for 5 years. If, in the first year it produced 10,000 motorcycles, the total production at the end of 5 years is:
A) 80,000　　　　B) 22,000　　　　C) 58,000　　　　D) 1,05,000

72) A vertical pole casts a shadow 4 m long on the ground and at the same time of day, a vertical tower of height 42 m casts a shadow 28 m long on the same ground. The height of the pole is:
A) 7 m　　　　B) 14 m　　　　C) 6 m　　　　D) 24 m

73) In the figure two triangles AEC and CGB where C is a point on AB. AE is parallel to CG and EC is parallel to GB. The two triangles:
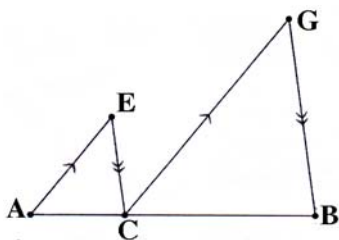

A) Are Similar　　　　　　　　B) Are Congruent
C) Are Isosceles　　　　　　　D) Have areas in the ratio 4 : 1

74) Which of the following statements is NOT true?
A) All congruent figures are similar.
B) If two triangles are similar then the ratio of their areas is constant.
C) If two triangles have corresponding angles equal, then the corresponding sides are equal.
D) If two angles have corresponding sides the same, then the corresponding angles are equal.

75) The solution of the equations $y = -2x + 3$ and $y = 3x - 2$ is :
   A) $(1, -1)$ B) $(-1, 1)$ C) $(-1, -1)$ D) $(1, 1)$

76) The given figure shows a circle with radius 7 cm. and centre A. The arc BC subtends an angle of 120° at the centre of the circle. To find the area of the segment BDC, you will need:

   A)   Area of the minor sector BAC
   B)   cos 60° or sin 60°
   C)   Base and height of the triangle BAC
   D)   Any two of the above
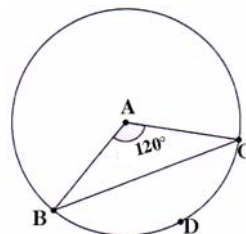
77) In the given figure the tangents at B and C, to the circle with centre A intersect at the point D. If $\lfloor BDC = \alpha$ and $\lfloor BAC = \beta$, then $\beta =$
   A) $180 + \alpha$
   B) $180 - \alpha$
   C) $90 + \alpha$
   D) $\alpha - 90$
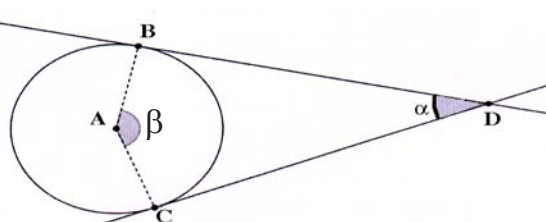
78) The given figure shows a square ABCD of side 18 m. A goat is tied at point A by a rope of length 14 m. The area that the goat CANNOT reach inside the square other than the area of AEF is:
   A)   324   sq. m.
   B)   170   sq. m.
   C)   154   sq. m.
   D)   80   sq. m.
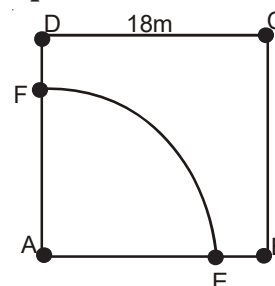
79) A (2, 1), B (9, 0), C (4, 5) & D (11, 4). Then ABCD represents a
   A)   Parallelogram   B)   Rectangle
   C)   Rhombus   D)   Square

80) (1, –6), (4, 0) and (–2, –3) are the coordinates of the vertices of a triangle. The coordinates of the centroid of the triangle are:
   A) $(3, 2)$ B) $(3, -1)$ C) $(1, -3)$ D) $(1, 3)$

81) The following steps are carried out to find the HCF of 560 and 170 using Euclid's division lemma
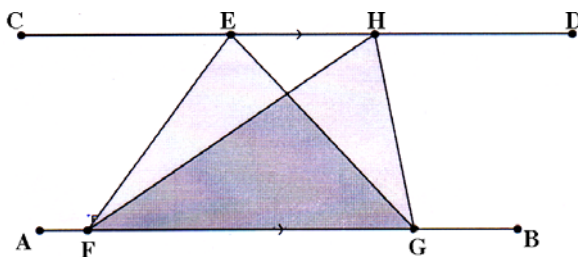 $560 = 170 \times 3 + 50$
   $170 = 50 \times 3 + 20$
   $50 = 20 \times 2 + 10$
   $20 = 10 \times 2 + 0$
   **The HCF of 560 and 170 is therefore:**
   A)   50   B)   20   C)   10   D)   2

82) In the given figure two parallel lines AB and CD with points E,F,G,H on them. Triangles EFG and HFG are:

A) Similar to each other
B) Congruent to each other
C) Both isosceles triangles
D) Different from each other

83) Triangle PQR and triangle LMN are similar and their areas are in the ratio 4:1. The ratio of the corresponding sides is:

A) 2:1 B) 4:1 C) 16:1 D) 8:1

84) The Graph represents equations of a pair of lines. There equations are :
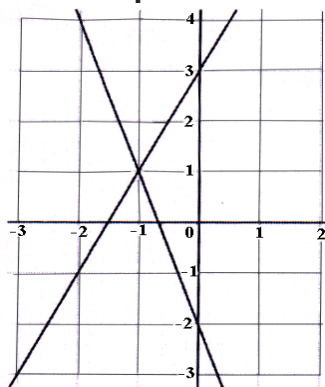
A) $y = 2x+3$ and $y = 3x – 2$
B) $y = 3x+2$ and $y = –3x –2$
C) $y = 3x+2$ and $y = –3x + 2$
D) $y = 2x+3$ and $y = –3x –2$

85) A two digit number is 9 more than the number obtained when its digits are reversed. If the sum of its digits is 9, find the number.

A) 45 B) 54 C) 72 D) 36

86) The figure shows a circle centred at B and with radius 2 cm. A and C are points on the circle and OA and OC are tangents to the circle. OABC is a:
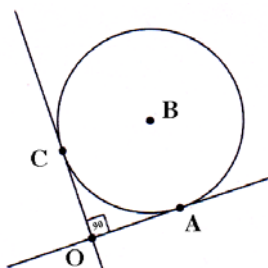
A) Rhombus
B) Rectangle
C) Parallelogram
D) Square

87) Two concentric circles centred at A and of radii 3 cm and 5 cm respectively are shown in figure. Chord CD of the outer circle is tangent to the inner circle at B. The area of triangle ACD is:
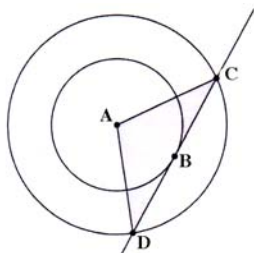
A)   8 sq.cm.

B)   6 sq.cm.

C)   12 sq.cm.

D)   4 sq.cm.

88) In the given figure shows the steps of the construction of a tangent to a circle with centre A from an external point C. step 2 shows a circle with centre M, passing through A and C, where M is the mid-point of AC. In step 3, the line CF, where F is one of the points of intersection of the two circles is shown. CF is a tangent to the circle with centre A because:

Step 1   Step 2   Step 3
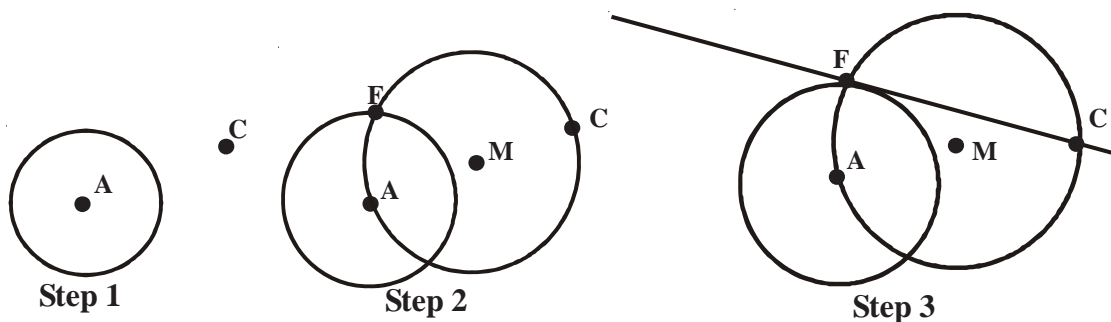
A)   M is the mid-point of A and C.

B)   The point F is on both circles.

C)   Angle AFC is the angle in the semi-circle.

D)   All of the above.

89) The prime factorization of two numbers A and B is: $A = 3^m \times 2^n \times 5$ and $B = 3^{m+1} \times 2^n \times 7$ the LCM of A and B is

A) $3^{m+1} \times 2^n \times 5 \times 7$

B) $3^{m+1} \times 2^n \times 7$

C) $3^m \times 2^n \times 5$

D) $3^m \times 2^n$

90) A certain rational number when reduced to its simplest form (i.e. there are no common factors in the numerator and denominator), has a denominator of 225. This rational number in decimal form.

A)   Is a terminating decimal

B)   Is a non-terminating, non-recurring decimal

C)   Is a non-terminating, recurring decimal

D)   Is a whole number