Manav Rachna International School

SESSION: 2021-22
SCHOLARSHIP TEST PAPER
FOR GRADE IX

Duration: 2 Hours **M.M: 100**

KINDLY FILL THE GIVEN DETAILS

Name: _____

Father's Name: _____

Mother's Name: _____

Current Class: _____

Examination Centre: Manav Rachna International School _____

GENERAL INSTRUCTIONS:

- This paper is divided into 4 sections
  SECTION – A: Logical Reasoning: 20 marks (All questions carry 2 marks each)
  SECTION – B: English: 20 marks (All MCQs carry 1 mark each, Short Answer Type Questions carry 2 marks each, Long Answer Type Question carries 10 marks)
  SECTION – C: Math: 30 marks (All Objective Questions carry 1 mark each. All Subjective Questions carry 2.5 marks each)
  SECTION – D: Science: 30 marks (All Objective Questions carry 1 mark each. All Subjective Questions carry 2 marks each)
- All sections are compulsory.
- Read each question carefully before answering.
- Objective Questions need to be **tick marked** in the question paper itself and submitted.
- Subjective Questions need to be attempted in the answer sheets provided and submitted.

SECTION A
LOGICAL REASONING

1. Elated is the opposite of despondent; enlightened is the opposite of ignorant. Careful is to cautious as boastful is to ____
   a) arrogant
   b) humble
   c) joyful
   d) suspicious

2. Which word does not belong with the others:
   a) book
   b) glossary
   c) chapter
   d) index

3. Mark the odd word out:
   a) simmer
   b) seethe
   c) cool
   d) bubble

4. Cup: Lip: Bird:
   a) grass
   b) nest
   c) tree
   d) beak

5. Choose the alternative which closely resembles the water-image of the given combination.

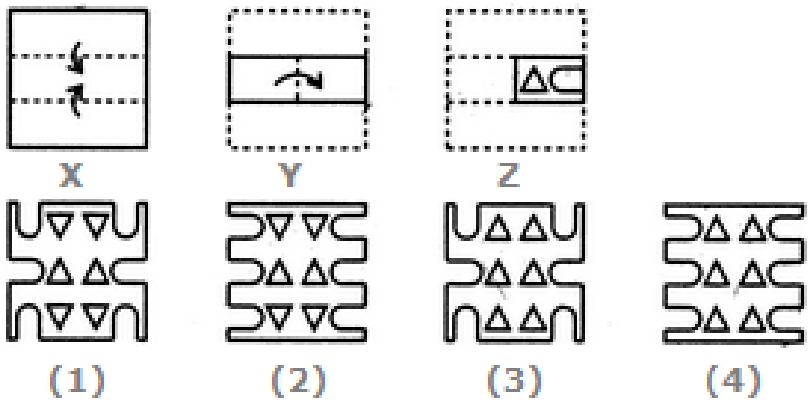
GR98AP76ES

(1) GR68AP19ES (2) GR88AP19ES

(3) GR88AP19ES (4) GR88AP19ES

a) 1
b) 2
c) 3
d) 4

6. Choose a figure which would most closely resemble the unfolded form of Figure Z.



a) 1
b) 2
c) 3
d) 4

7. Posthumous Award occurs when an award is given to someone, after their death. Choose from the situations below, the best examples of Posthumous Award.

   a) Late yesteryear actress Sridevi was awarded with a Lifetime Achievement Award posthumously in Filmfare 2019.
   b) Chitra never thought she'd live to receive a third booker prize for her novel.
   c) Emanuel has been honored with a prestigious literary award for his writing career and his daughter accepted the award on behalf of her deceased father.
   d) Meenal's publisher canceled her book contract after she failed to deliver the manuscript on time.

8. Kunal, Jiten, and Nitin are 3 brothers. If the following statements are all true, which of them is the youngest?

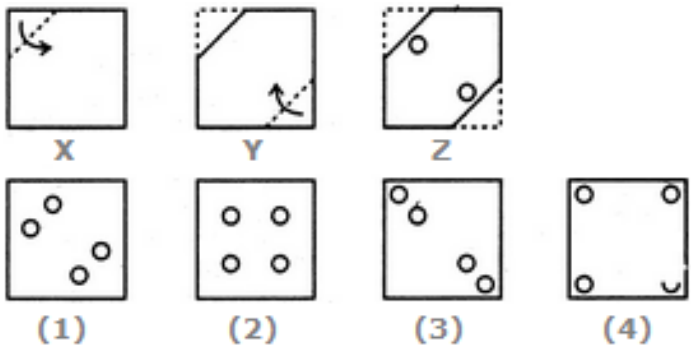
✓Kunal is the oldest.

✓Nitin is not the oldest.

✓Jiten is not the youngest.

a) Jiten
b) Kunal
c) Nitin
d) Both Jiten and Nitin

9. Choose a figure which would most closely resemble the unfolded form of Figure Z

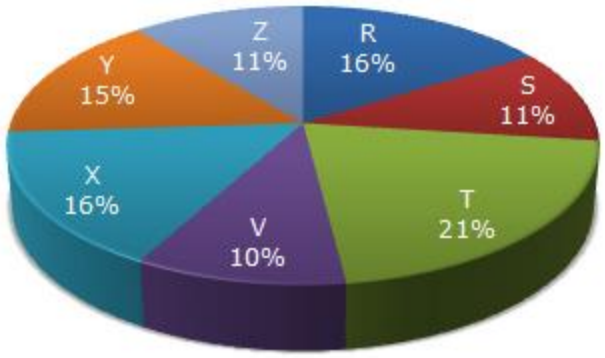


a) 1
b) 2
c) 3
d) 4

10. Study the following pie chart and the table and answer the questions based on them.

Proportion of Population of Seven Villages in 1997

Village	% Population Below Poverty Line
X	38
Y	52
Z	42
R	51
S	49
T	46
V	58



If the population of village R in 1997 is 32000, then what will be the population of village Y below poverty line in that year?

a) 14100
b) 15600
c) 16500
d) 17000

SECTION B
ENGLISH

1. Read the following passage and answer the questions that follow:

The Oxford Dictionary defines a quack as a person who dishonestly claims to have special knowledge and skill in some field, especially in medicine. Passages I and II below present two examples of 'quackery' practised more than a hundred years ago. Passages III and IV provide additional information.

I

Elisha Perkins (1741–1799) was a doctor with an undistinguished record. He decided to put to use the new and largely misunderstood science of electricity. He produced a pair of metal rods almost certainly made of unadulterated iron but reputed to be a complex alloy containing gold and platinum. They became known as Perkins's Metallic Tractors. Users were instructed to draw these rods over the affected part of the body, always away from the centre, and never in the reverse direction for a specified time daily. Perkins claimed that the rods cured aches and pains, fevers and debilities, paralysis and 'deformities of all types'. The rods sold for $10 a pair and made their inventor a rapid fortune.

II

Various quacks invented electric rings. These, according to the advertisements, demonstrated quite spontaneously the power of the current (produced by the action of sweat upon the rare metals which made the ring) which drew diseases from the body – users found that every few months a deposit had to be scraped from the inside of the ring and this, said the quacks, was the residue of the disease, forced from the body. But no, replied the American Bureau of Chemistry, who analysed one of the rings; it was rust from the plain iron of which the ring was made.

III

Sir Kenelm Digby (1603–1665) had a 'sympathetic powder' which he said was brought from the East by a friar. It reportedly healed wounds merely by being applied to the victim's bloodstained clothing. The wound itself received no treatment at all.

IV

In 1911, the British Medical Journal gave three reasons as to why quacks were successful.

i) The inherent tendency of human nature to delude itself.
ii) The failure of orthodox medicine to cure many diseases.
iii) The dishonesty of the unscrupulous.

Answer the given questions:

i. For the quacks referred to in I and II, to be successful was to
   a) gain the highest possible qualifications.
   b) master the latest scientific developments.
   c) have the public believe in and buy the remedy.
   d) prove that ordinary doctors were incompetent.

ii. Elisha Perkins warned users that the rods should 'never' be used in the reverse direction (I). The most likely reason for his issuing this warning was to

a) protect the precious metals in the rods.
b) prolong the healing powers of the rods.
c) reassure people that the rods were easy to use.
d) suggest that the rods were powerful and therefore potentially dangerous.

iii. The fact that the 'sympathetic powder' was 'brought from the East by a friar' (III) helped to make it seem

a) rare and genuine.
b) amusing and dubious.
c) soothing and antiseptic.
d) practical and economical.

iv. Passages I–IV mention a number of individuals, groups and organisations. Which one of the following would the writers of the passages consider to be the most believable and reliable?

a) Elisha Perkins (I) and Sir Kenelm Digby (III)
b) the friar (III) and people who used electric rods (I)
c) the American Bureau of Chemistry (II) and the British Medical Journal (IV)
d) the pioneers of the science of electricity (I) and the inventors of electric rings (II)

v. Passage IV mentions 'the inherent tendency of human nature to delude itself' (line 24). Which one of the following is a clear example of this tendency?

a) People stating that they were cured after taking orthodox medicine.
b) People reporting that they felt better soon after putting on electric rings.
c) People rubbing powder into their wounds instead of leaving it on their clothing.
d) People disregarding warnings about using metallic rods in the reverse direction.

vi. Point ii) of Passage IV suggests that quackery arose because

a) most people could not afford orthodox medicine.
b) orthodox medicine could not cure many common illnesses.
c) people were frightened of the treatments provided by orthodox medicine.
d) quacks explained their treatments in a way that ordinary people could understand.

vii. Which of the following is closest in meaning to 'delude'?

a) mislead
b) truthful
c) inform
d) be honest

viii. On the basis of your reading of the passage, answer these questions briefly.

a) How did the 'sympathetic powder' heal wounds?
b) What claim was presented by the American Bureau of Chemistry?

2 i). Social Media harms real life communication. Write a debate either for or against the motion.

OR

2 ii). Write a hypothetical letter to any writer of your choice, complimenting him/her on his work and contribution to literature.

SECTION C
MATH

OBJECTIVE

1. If *n* is divided by 4, the remainder is 3. The remainder when 2*n* is divided by 4 is
   a) 0 b) 2 c) 6 d) 3

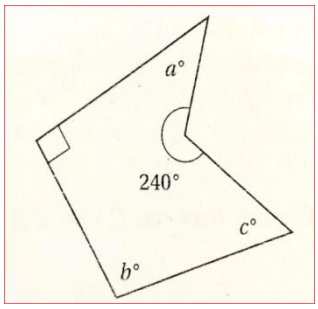
2. A triangle and a trapezium are equal in area. They also have the same altitudes. If the base of the triangle is 36 cm, the mean of the parallel sides of the trapezium is :
   a) 72cm b) 9 cm c) 18 cm d) 36 cm

3. How many non-overlapping triangles can we make in polygon having n sides by joining the vertices?
   a) n-1 b) n-2 c) n-3 d) n-4

4. In a game, a blue chip is worth 2 Rupees more than a red chip, and a red chip is worth 2 Rupees more than a green chip. If 5 green chips are worth m Rupees, then which of the following represents the value, in Rupees, of 10 blue chips and 5 red chips?
   a) 50+3m b) 18+60m c) 40+3m d) 28+20m

5. What is the perimeter of the equilateral triangle inscribed in a circle with circumference 24π?
   a) $36\sqrt{2}$ b) $30\sqrt{3}$ c) $36\sqrt{3}$ d)42

6. In the adjoining figure, find the value of (a+b+c)?



   a) 240^0 b) 210^0 c) 180^0 d) 150^0

7. A number was chosen at random from the first 300 three digit natural numbers. Find the probability of it ending with a zero.

   a) 2/5 b) 1/5 c) 1/10 d) 2/15

8. If the sum of the diagonals of a rhombus is 10 cm and its perimeter is $4\sqrt{13}$cm, then the lengths of its diagonals(in cm) are :

   a) 5,5 b) 6,4 c) 7,3 d) 8,2

9. If a, b and c are different positive integers and $2^a.2^b.2^c = 64$, then the value of $2^a + 2^b + 2^c$ is

   a) 14 b) 17 c) 28 d) 34

10. Surbhi customized her bicycle by exchanging the front wheel for a wheel that had one half the diameter of the back wheel. Now when Surbhi rides the bicycle, how many revolutions does the front wheel make for each revolution of the back wheel?

a) 8 b) 4 c) 2 d) $\frac{1}{2}$

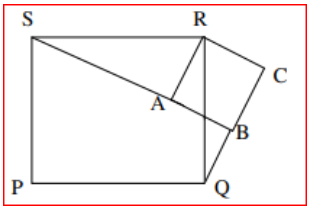
11. Area of six surfaces of a cuboid are 12, 12,20, 20,15 and 15 sq.cm respectively. Volume of this cuboid in cm^3 is

a) 12 b) 15 c) 60 d) 94

12. Four years ago, my age was twice what my son's age will be four years hence. How many years hence will my age be twice my son's age, at the same time?

a) 9 b) 12 c) 18 d) 21

13. In the figure, A is a point in the interior of square PQRS. ABCR is also a Square. If RC=27cm and QB=28 cm, then find the length of BS (in cm).



a) 62 cm b) 72 cm c) 82 cm d) 92 cm

14. The sum of all the factors of 2500 which are also perfect squares is equal to :

a) 3250 b) 755 c) 3255 d) 2630

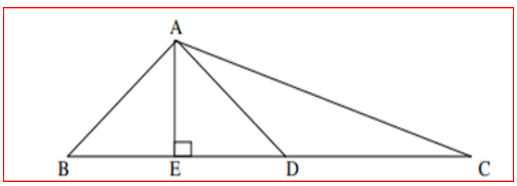
15. The perimeter of a regular hexagon and a square are equal. The ratio of the area of the square to the area of the hexagon is:

a) $3:\sqrt{2}$ b) $2:3\sqrt{3}$ c) $1:\sqrt{3}$ d) $3:2\sqrt{3}$

16. ΔABC is an equilateral triangle of side $2\sqrt{3}$ cm. O is any point in the interior of ΔABC. If x, y and z are perpendicular distances of point O from the sides of the triangle, then find (x +y+ z) (in cm).

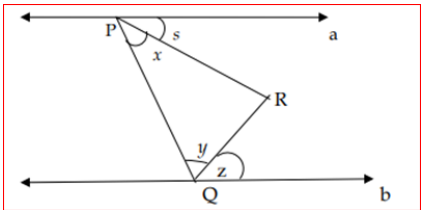
a) $\sqrt{3}$cm b)$3\sqrt{3}$ cm c) 3 cm d) 2 cm

17. In the figure , AE $\perp$BC ,D is the mid-point of BC. If AB = c, AE= h, AD = d, BC= a and AC= b, then find ED(in terms of a, b and d) .



a) $\frac{4d^2-4b^2-a^2}{4a}$ b) $\frac{4b^2-4d^2-a^2}{4a}$ c) $\frac{b^2-4d^2-a^2}{4a}$ d) $\frac{4b^2+4d^2-a^2}{4a}$

18. If line a is parallel to b and ∠R = 90^0 .x:y = 3:2 and y+z =100^0,then find the value of s.



a) 54° b) 48° c) 36° d) 26°

19. If $2^x = 4^y = 8^z$ and $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{6z} = \frac{12}{5}$, then the value of z is:

a) 5/24 b)3/8 c) 5/8 d) 3/16

20. When 616 is divided by a certain positive number, which is 66 $\frac{2}{3}$% of the quotient, it leaves 16 as the remainder. The divisor is :

a) 16 b) 20 c) 24 d) 28

SUBJECTIVE

1. A man earns a compound interest of Rs 102.50 by investing certain sum of money for two years at 5% per annum. In a changed market scenario, the rate of interest was reduced to 4% per annum. What will be compound interest he will earn now for the same period?

2. The barrel of a fountain pen, cylindrical in shape, is 7cm long and 5mm in diameter. A full barrel of ink in the pen will be used upon writing 3300 words on an average. How many words can be written in a bottle of ink containing one fifth of a litre.

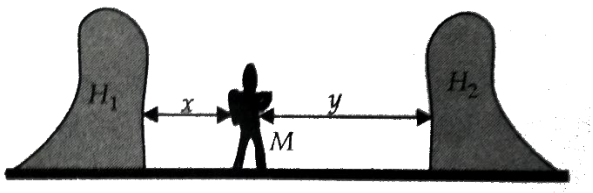
3. A steamer goes downstream and covers the distance between two ports in 5 hours, while it covers the same distance upstream in 6 hours. If the speed of the stream is 1 km/h, then find the speed of the steamer in still water.

4. Find the value of a, if pq^2a = $(4pq + 3q)^2 - (4pq - 3q)^2$

SECTION D
SCIENCE

OBJECTIVE

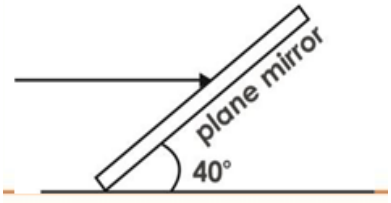
1. A man standing between two cliffs claps. He heard two successive echoes at regular intervals of 1s. How much is the distance between the two cliffs? (Take the speed of sound in air to be 340 m/s)



a) 210 m
b) 340 m
c) 510 m
d) 420 m

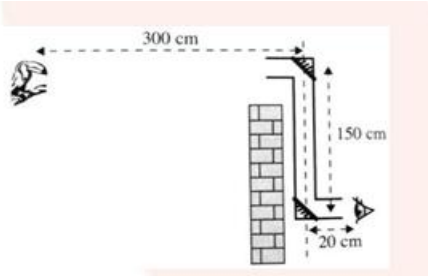
2. A plane mirror is inclined at $40^0$to the floor, an incident ray parallel to the floor strikes the mirror as shown in the diagram. If the angle of inclination of the mirror is increased to 50^0 without changing the direction of the ray, what is the new angle of reflection?

a) 0^o
b) 90^o
c) 50^o
d) 30^o



3. A mirror periscope is used to observe a bird as shown in the diagram. How far away will the bird appear to be from the observer?

a) 320 cm
c) 620 cm
b) 470 cm
d) 940 cm



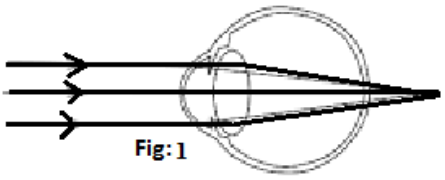
4. **Assertion (A)**: It is easier to write on a paper with a ball pen as compared to that on a smooth glass sheet.
Reason (R): Friction exerted by paper is lesser than that is exerted by smooth glass sheet.
a) Both (A) and (R) are true and (R) is the correct explanation of (A).
b) Both (A) and (R) are true but (R) is not the correct explanation of (A).
c) (A) is true but (R) is false.
d) (A) is false but (R) is true.

5. Match the explanation of different types of forces mentioned in the column I with the forces mentioned in column II.

Sl. No.	Objects		Nature of force
i)	**Force on a freely falling body**	**p.**	**Frictional force**
ii)	**Force due to movement of charges**	**q.**	**Muscular force**
iii)	**Force applied to lift objects**	**r.**	**Electrostatic force**
iv)	**Force acting on a sliding ball**	**s.**	**Gravitational force**

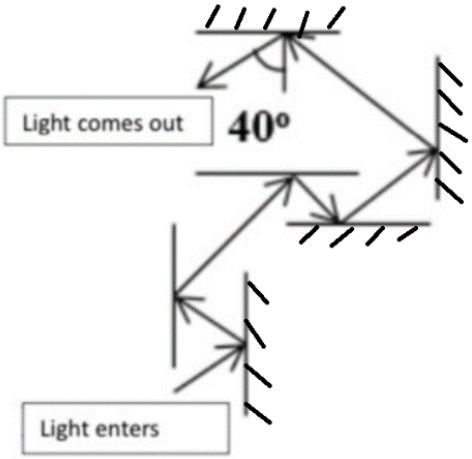
a) i-r, ii-q, ii-p, iv-s
b) i-s, ii-r, iii-q, iv-p
c) i-s, ii-p, iii-r, iv-q
d) i-p, ii-s, iii-q, iv-r

6. Identify the defect of vision shown in Fig 1.



a) hypermetropia
b) cataract
c) glaucoma
d) myopia

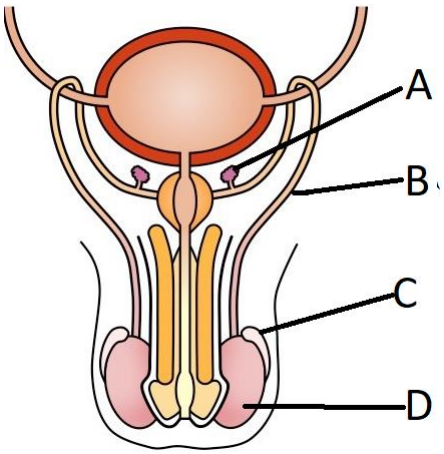
7. Find the angle of incidence for the ray that is striking the mirror first:



a) 50^0
b) 40^0
c) 45^0
d) 60^0

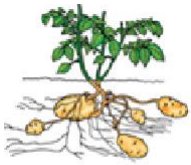
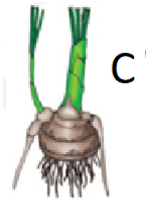
8. Ram wanted the gold leaf electroscope to be charged with positive charge. For this;
a) A positively charged rod should be brought in contact with the disc of the electroscope.
b) A positively charged rod should be brought closer to the disc of the electroscope.
c) A negatively charged rod should be brought in contact with the disc of the electroscope.
d) An uncharged rod should be brought closer to the disc of the electroscope.

9. Choose the correct option from the following on the basis of functions of the labelled parts.



a) A-development of tail of sperm, B-produce nutritious fluid, C-secretes sticky fluid, D-Transports sperms to urethra
b) A-produce sugar rich fluid, B- transports sperm to urethra, C-development of tail of sperm, D-production of sperm
c) A-produce sticky liquid, B-produces testosterone, C-maturation of sperm, D-produces nutritious fluid
d) A-produce sperm, B-produce sugar rich fluid, C-produces sticky fluid, D-maturation of sperm

10. Match the pictures in column I with the names of the vegetative parts in column II.

Column I	Column II
 A	**Corm**
 B	**Bulb**
 C	**Tuber**
 D	**Stolon**

a) A-Tuber, B-Stolon, C-Corm, D-Bulb
b) A-Bulb, B-Corm, C-Tuber, D-Stolon
c) A-Corm, B-Tuber, C-Bulb, D-Stolon
d) A-Stolon, B-Tuber, C-Bulb, D-Corm

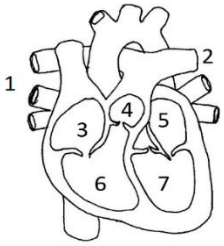
11. Shashi's grandfather's gall bladder is removed during an operation. The doctor advised his grandfather to avoid eating oily food items. Which of the following is stating the correct reason for doctor's advise:
a) Grandfather's liver will stop producing bile juice as the gall bladder is removed.
b) The enzymes responsible for digestion of fat will not be produced as gall bladder is removed.
c) Emulsification of fat globules will not happen properly as bile juice will keep flowing in the intestine.
d) There will be lesser production of enzymes for digesting fats globules as liver stops functioning.

12. Match the column I having names of respiratory structures with animals listed in column II.

Column I	Column II
I. Body surface	a. Fish
II. Skin	b. Cockroach
III. Tracheoles	c. Amoeba
IV. Gills	d. Earthworm

a) I-a, II-d, III-b, IV-c
b) c) I-d, II-a, III-b, IV-c
c) I-c, II-d, III-b, IV-a
d) d) I-d, II-c, III-b, IV-a

13. The correct series of numbers that shows the direction of flow of blood through heart is:



a) 1 → 3 → 6 → 4 → 2 → 5 → 7
b) 1 → 2 → 3 → 4 → 5 → 6 → 7
c) 1 → 3 → 4 → 6 → 2 → 7 → 5
d) 1 → 6 → 3 → 4 → 7 → 5 → 2

14. Veins have valves and the walls of arteries are thicker than that of veins because:

i) Valves generally contains carboxy-haemoglobin.
ii) Valves prevent backflow of blood.
iii) Blood pressure is higher in arteries than in veins.
iv) Blood pressure in lower in arteries than in veins.

a) I and III
b) II and III
c) II and IV
d) I and IV

15. Atoms of which of the following have a valency equal to zero.

a) Hydrogen
b) Nitrogen
c) Neon
d) Carbon

16. When hydrogen chloride gas is prepared on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to

a) absorb the evolved gas
b) moisten the gas
c) absorb moisture from the gas
d) absorb Cl^- ions from the evolved gas

17. An element X is soft and can be cut with a knife. This is very reactive to air and cannot be kept open in air. It reacts vigorously with water. Identify the element from the following

a) Mg
b) Na
c) P
d) Ca

18. Coal is processed in industries to get some useful products. Which of the following is not obtained from coal?

a) Coke
b) Coal tar
c) Coal gas
d) CNG

19. Chromium plating is done on many objects such as car parts, bath taps, kitchen gas stove etc. Why?

a) It does not corrode but prevents scratches
b) It looks beautiful
c) It costs less
d) Articles can be sold at higher price

20. $Pb + CuCl_2 \rightarrow PbCl_2 + Cu$
The above reaction is an example of:

a) combination
b) double displacement
c) decomposition
d) displacement

SUBJECTIVE

1. A fuel 'X' has calorific value of 60KJ/gram and produces CO_2 and water on combustion. Another fuel 'Y' has calorific value 100KJ/gram and produces Carbon monoxide and Sulphur dioxide on combustion. Which is a better fuel? Why?

2. Two plane mirrors are inclined at 70° to each other. A ray is incident on a mirror at an angle θ. This ray gets reflected and falls on the second mirror, where it again gets reflected parallel to the first mirror. What is the angle θ?

3. a) Identify the multicellular organism on the basis of following information:
   i. It reproduces through budding.
   ii. It is an aquatic organism and has thin mobile tentacles.
   b) What is the scientific term used for the cells which releases neurotoxins to paralyse its prey?

4. While purifying blood using a dialyser machine, it is necessary that the fluid pressure remains same on both sides of the semi-permeable membrane. Give reason.

5. A student burnt a metal A found in the form of a ribbon. The ribbon burnt with a white dazzling flame and white powder B is formed which is basic in nature. Identify A and B and write the balanced equation.