माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

मु.उ.पु. 24 पृष्ठ

2009

कार्यालयीन उपयोग के लिए

परीक्षा के नाम की सील

हाई स्कूल परीक्षा नियमित

निम्न रिक्तियों की सही प्रविष्टि परीक्षार्थी द्वारा की जाए।

1. विषय कोड 2 0 0 परीक्षा का विषय Science

2. परीक्षा का माध्यम English परीक्षा की दिनांक 17-03-09

3. परीक्षार्थी प्रश्न पत्र का पूर्ण कोड नम्बर (सेट A, B, C,या D) अनिवार्यतः भरें

कोड	सेट
T-1034	D

केन्द्र क्रमांक की सील

केन्द्र क्रमांक

561002

पर्यवेक्षक/केन्द्राध्यक्ष का प्रमाणीकरण

प्रमाणित किया जाता है कि परीक्षार्थी द्वारा निम्नानुसार पूरक उत्तरपुस्तिका ली गई है :–

क :– संख्या शब्दों में Two अंकों में 2

ख :– परीक्षार्थी की बैठक व्यवस्था कक्ष क्रमांक 30 में है।

ग :– उत्तर पुस्तिका पर प्रश्न–पत्र का कोड नम्बर एवं सेट सही लिखा है।

हस्ताक्षर (पर्यवेक्षक)

नाम Jayashree Vinchankar पद Teacher

पता/संस्था Scholars' Den School

परीक्षार्थी द्वारा ली गई सभी पूरक उत्तर पुस्तिकायें मुख्य उत्तर पुस्तिका के साथ संलग्न हैं।

हस्ताक्षर केन्द्राध्यक्ष

[redacted]

परीक्षा क्रमांक K 750340

परीक्षार्थी का अनुक्रमांक (अंग्रेजी अंकों में)

1	9	5	6	1	6	0	3	8

नीचे दिये प्रत्येक कालम में ऊपर दिये गये अनुक्रमांक के अंकों को उसी क्रम में शब्दों में लिखा जाए :–

nine	nine	five	six	one	six	zero	three	eight

BSEMP

प्रश्न	
1	3
2	4
3	7
4	8
5	10
6	12
7	13
8	16
9	18
10	19
कुल प्राप्तांक	

परीक्षार्थी, परीक्षक से अपेक्षा है कि वे पृष्ठ भाग पर दिये गये निर्देशों का यथेष्ट पालन सुनिश्चित करेंगे।

प्रमाणित किया जाता है कि उपरोक्तानुसार संलग्न पूरक उत्तर पुस्तिकाओं की संख्
वस्था स्थिति में यथावत् रखते हुए ही उत्तरपुस्तिका का मूल्यांकन किया गया है। मैंने
पुस्तिका के अन्दर के अंक एवं कव्हर पृष्ठ पर दर्शाये अंक एक समान है एवं यो

हस्ताक्षर (परीक्षक)

परीक्षक क्रमांक 92102

हस्ताक्षर (उपमुख्य परीक्षक)

दिनांक 30/3/09

दिनांक

परीक्षार्थी के लिए निर्देश

1. परीक्षार्थी को अपना अनुक्रमांक/विषय/माध्यम/दिनांक एवं प्रश्न–पत्र का कोड (समूह) मुख पृष्ठ पर अंकित करना अनिवार्य है। अन्यत्र कहीं भी नहीं लिखा जाएगा।
2. अनुक्रमांक नीचे दिये गए उदाहरण अनुसार लिखा जाए :–

1	8	2	4	3	9	5	6	8
एक	आठ	दो	चार	तीन	नौ	पाँच	छः	आठ

3. उत्तर पुस्तिका के दोनों ओर पृष्ठों में लिखें। बीच में रिक्त स्थान न छोड़ें। भूल से छूटा/रिक्त स्थान तथा शेष खाली पृष्ठों को क्रास किया जाए।
4. परीक्षार्थी प्रश्न पत्र हल करते समय ही, कव्हर पृष्ठ पर दी गई तालिका में प्रश्न क्रमांक के सम्मुख वाले कालम में उत्तरपुस्तिका का वह पृष्ठ क्रमांक अनिवार्य रूप से अंकित करें जिस पर प्रश्न का उत्तर लिखा गया है। यदि पूरक उत्तरपुस्तिका का उपयोग किया गया हो, तो उस पर 25 से प्रारंभ करते हुए पृष्ठ क्रमांक परीक्षार्थी द्वारा स्वयं डाले जाएँ।

परीक्षक के लिए निर्देश

1. केवल उन्हीं उत्तरपुस्तिकाओं का मूल्यांकन करें जिन पर होलो क्राफ्ट स्टीकर चस्पा है।
2. उत्तरपुस्तिका का मूल्यांकन होलो क्राफ्ट स्टीकर को चस्पा स्थिति में यथावत् रखते हुए ही किया जाये।
3. बिना होलो क्राफ्ट स्टीकर वाली तथा फटे हुए होलो क्राफ्ट स्टीकर वाली सभी उत्तरपुस्तिकाऐं मूल्यांकन हेतु परीक्षा नियंत्रक, माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल को व्यक्तिशः रूप से भेजी जाये।

मूल्यांकन केन्द्र के लिए निर्देश

1. **O.M.R. SHEET** पर प्राप्तांक की प्रविष्टि करने हेतु केवल वही उत्तरपुस्तिकाएँ प्राप्त करें, जिनका मूल्यांकन होलो क्राफ्ट स्टीकर को चस्पा स्थिति में यथावत् रखते हुए ही किया गया है। यदि होलो क्राफ्ट स्टीकर फटा हुआ पाया जाता है तो ऐसी उत्तरपुस्तिकाऐं मूल्यांकन केन्द्र अधिकारी को पृथक से सौपी जाएँ। ऐसे प्रकरणों के प्राप्तांकों की प्रविष्टि **O.M.R. SHEET** में नहीं की जाए। मूल्यांकन केन्द्र अधिकारी ऐसी उत्तरपुस्तिकाऐं पुनः मूल्यांकन के लिये परीक्षा नियंत्रक, माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल को व्यक्तिशः रूप से सौपेंगे।
2. उत्तरपुस्तिका के मुख्य पृष्ठ में अंकों एवं शब्दों में अंकित प्राप्तांकों को मिलान कर **O.M.R. SHEET** में अंकों की सटीक प्रविष्टि करें।
3. **O.M.R. SHEET** पर प्रमाणीकरण कर हस्ताक्षर करें।

Section - A
(Objective Type Questions)

1(A) Fill in the blanks :-

(a) Mercury is the hottest planet of the solar system.

(b) The diameter of the sun is 100 times the diameter of the earth.

(c) Mercury, Venus, Earth and Mars, which are four nearest planets to the sun are called Terrestrial planets.

(d) Jupiter is the largest planet of the solar system.

(e) The vast region which exists beyond the earth's atmosphere is called space.

(B) Match the correct pairs :-

	A	B
(i)	White blood corpuscles	- Protect us from disease.
(ii)	Arteries and veins	- Vessels for transport.
(iii)	Thyroxin	- Thyroid gland.
(iv)	Auxin	- Growth of plants.
(v)	Iron	- Haematite.

2 (A) Choose the correct alternative and write in your answer-book.

(i) When an object is placed at the focus of concave mirror

at infinity.

पृष्ठ के अंकों का योग

(ii) Electric current is measured by an instrument, called
Ammeter

In which part of the plant does photosynthesis take place?
Leaves

In the process of Glycolysis the molecule of glucose breaks down into:
Pyruvic Acid

Which one of the following is not an alloy?
Iron

(B) Write answer in one word :-

1. Name the chemical reaction which releases heat?

Ans. The chemical reaction which releases heat is known as exothermic reaction

e.g. $CaO + H_2O \longrightarrow Ca(OH)_2 + heat$

(ii) What is pH value of pure water?

Ans. pH value of pure water is 7

What kind of mirror is used in vehicles to see traffic on the back?

Ans. Convex mirror are used in vehicles to see traffic on the back because convex mirror always form virtual, erect and small image, so that wide range of traffic can be seen.

(iv) Name the device which converts electrical energy into mechanical energy?

Ans. Electric motor converts electrical energy into mechanical energy.

) Write the main 'ore' of aluminium

The main 'ore' of aluminium is Bauxite ore ($Al_2O_3 \cdot 2H_2O$)

पृष्ठ के अंको ...

(Section B)
(Very short answer Type)

3. What are reversible reactions? Explain with an example.

Ans The reactions in which reactants combine together to form products and under same conditions products combine to go form reactants are called reversible reactions.

for e.g.

$$N_2 + 3H_2 \underset{200-300\ atm}{\overset{Fe/MO}{\rightleftharpoons}} 2NH_3$$

In above reaction, Nitrogen combine with hydrogen in the presence Iron and Molibednum at 200-300 atm pressure to give Ammonia Under same condition ammonia decomposes to give N_2 and H_2.

Some features of reversible reaction:-

(i) It take place in both the direction Forward direction and backward direction.

(ii) These reactions never come to an end

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पृष्ठ के अंकों का योग

(iii) It is represented by $\rightleftharpoons$

$\rightarrow$ represents forward reaction

$\leftarrow$ represents backward reaction.

(iv) The rate at which forward reaction becomes equal to backward reaction is called equilibrium

(v) Some other examples

1. $H_2 + I_2 \rightleftharpoons 2HI$

Hydrogen Iodide

2. $N_2 + O_2 \rightleftharpoons 2NO$

Nitric Oxide

Q4 Differentiate between Respiration and Breathing?

Ans The difference between respiration and Breathing are as follow

Respiration	Breathing
Respiration is an oxidation process which involve complete degradation of complex organic substance	1. Breathing includes intake of atmospheric oxygen from lungs and giving out carbon di oxide from lungs

Respiration	Breathing
2. It is a biochemical process	2. It is a physical process
3. Chemical Reaction $C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O$ (Aerobic Respiration) + 38 ATP Anaerobic respiration :- $C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$	3. It includes Inspiration and expiration Intake of O_2 is Inspiration Giving out CO_2 is expiration
4. It takes place inside the cell	4. It takes place outside the cell
5. Energy is produced in the form of ATP	5. Energy is not produced

5. Write the names and functions of two harmones secreted by pituitary gland?

Ans Pituitary gland is situated below the hypothalamus It is known as master gland because it secrets different harmones It is divided in to three gland

1. Anterior pituitary :-
It Secretes six different types of harmones Some of them are :-

1. Thyroid stimulating harmone :-
Function :- It stimulates the thyroxin harmone from thyroid gland

2. Adreno tropic harmone :-
Function :- It stimulates the harmone secreted by adrenal gland

3. Growth harmone :- It stimulates the growth

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पृष्ठ के अंकों का योग

कुल अंक

4 Prolactin harmone :-
Function := It stimulates the milk production in the body

Other harmones secreted by Anterior pituitary gland is
1. Follicle harmone. 2. Luietzing harmone

Other two gland in pituitary gland are :-
1. Intermidiate pituitary :- It secretes the melanocyte stimulating harmone which is responsible for the colour of the skin

2. Posterior pituitary :-
It is of two type :-
1. Vasopressin.
2. Oxydosin

पृष्ठ के अंकों का योग

6. What is silver mirror test? Explain with equation?

Ans. Formaldehyde act as an reducing agent also. It reduces Tollen's reagent to silver.

Ammonical Silver Nitrate Solution is called Silver Tollen's reagent

When :-

$AgNO_3 + NH_4OH \rightarrow$ Tollen's reagent

Equation :-

$AgNO_3 + NH_4OH \longrightarrow AgOH + NH_4NO_3$

AgOH is unstable so

$2AgOH \longrightarrow Ag_2O + H_2O$

When

$HCHO + Ag_2O \longrightarrow HCOOH + 2Ag$

formic acid silver

Formaldehyde reacts with silver oxide to form formic acid and silver is released in this process

If this reaction is allowed to take place in a container

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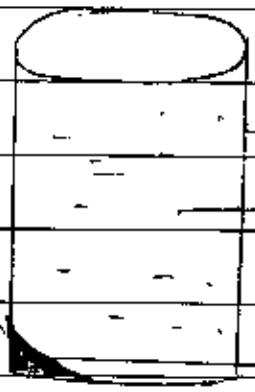
पृष्ठ के अंकों का योग

then silver would be seen deposited in that container. This whole process is known as silver mirror test. In this reaction Tollen's reagent also acted as an oxidising agent because it oxidized formaldehyde to formic acid.



Silver Mirror Test-

7. What are detergents? Why detergents are consider to be most effective than soap?

Ans Detergents are sod long chain of alkyl or aryl benezene sulphonic acid. The general formula of detergent is

$$C_{12}H_{25}-C_6H_4-SO_3^-Na^+$$

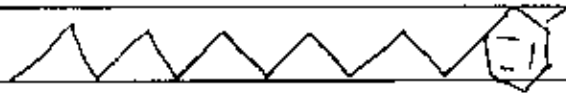
Long chain of alkyl or aryl benezene sulphonic acid.

पृष्ठ के अंकों का योग

In detergent there are two parts

(i) First part is hydrophobic. (It is water repellant and it is also called tail)

(ii) Second part is hydrophyllic. It is water attractive and is called head



Hydrophobic Hydrophyllic

Detergents are consider to be better than soap because of the following reasons

	Detergent	Soap
1.	They are long chain of alkyl or aryl benezene sulphonic aid $C_{12}H_{25}C_6H_4SO_3^- Na^+$	2. They are the sodium salt of higher fatty acid $C_{17}H_{35}COO\,Na$
2.	They form lather in the	2 They donot form lather in the

BSEMP

hard water also because they do not react with calcium ions and magnesium ions of hard ~~ward~~ water	hard water
3. They can be used in acidic solution also	3. They cannot be used in acidic solution
4 They have strong cleansing agent (property)	4. They have relatively less cleansing property
5 They are not biodegradable so they can cause pollution	5. They are bio-degradable so they do not cause any pollution

Artifical detergents are called syndnates. They have relatively high cleansing property. The above differences show that

पृष्ठ के अंकों का योग

detergents are considered to be more effective than soap

8 Write four preventive measures to control air pollution?

Ans The pollution which disturb the ratio of gases in the atmosphere is called air pollution. Due to the increasing industrial area, use of vehicles, cutting of trees have increased the air pollution.

Today it is necessary to minimize this pollution for the benefit of human being. Following steps can be taken to control air pollution :-

(1) Industrial area should be far from the city

(2) Greenery should be their near the industries

(3) Motivation for growing more and more trees should be made effective.

(4) Such fuels should be used which are burning completely and not producing smoke.

(5) Chimneys of the factories should be made high.
(6) Stop using vehicles which produce to much smoke.
(7) Use of harmful substances like cigratte, etc should be prevented.

All the above measures can be taken to control air pollution. Increasing air pollution causes many disease and may damage our respiratory system.

Ozone depletion, Global warming is also increasing because of air pollution. Air pollution is also affecting the food chain.

पृष्ठ के अंकों का योग

9. Write the medicinal uses of the following trees :-

(i) Neem.

→ Uses : (i) Neem tree is very useful for people.

(ii) Leaves of the neem tree is used to cure skin disease.

(iii) Leaves are also used to as anticeptic.

(iv) It is also used in the treatment of teeth diseases.

(v) Paste made from neem leaves are also used to massage the gums.

(ii) Amla

Uses :- (i) Amla contain vitamin C.

(ii) It is good for person suffering from deficiency of vitamin C and scurvy.

(iii) It is also used for the stomachache and stomach disorder.

(iv) It is also used in diseases related to stomach.

(v) Amla is used for making preservatives like pickel, jam, squash etc.

(iii) Amaltas :-

Uses

1. Leaves extract are used for stomach disorder.
2. It is also used for leprosy.

(iv) Chandan :-

(i) Chandan is used to make soaps, detergents.
(ii) It is also used in perfumes, scents etc.
(iii) Chandan is used to do body massage.
(iv) It is also used for making oil.

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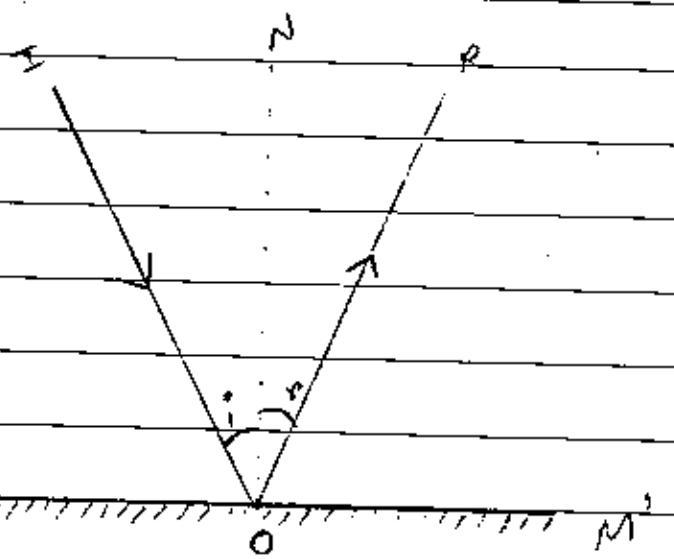
(Short Answer Type Question)

10. Explain the 'laws of reflection' with the help of diagram?

Ans :- When a ray of light travels in a homogenous medium, it return back after striking a shinning surface. This returning back of light is known as reflection of light.



In the above figure MM' is a plane mirror.

1. TO is incident ray :- It strikes the mirror
2. OR is reflected ray :- After reflection incident ray comes through this ray and this ray is called reflected ray
3. Normal :- ON is the normal It is perpendicular to the mirror
4. Point of Incidence :- O is the point of incidence where all the three rays meet
5. Angle of incident :- The angle formed by incident ray and normal.
6. Angle of reflection :- Angle formed by

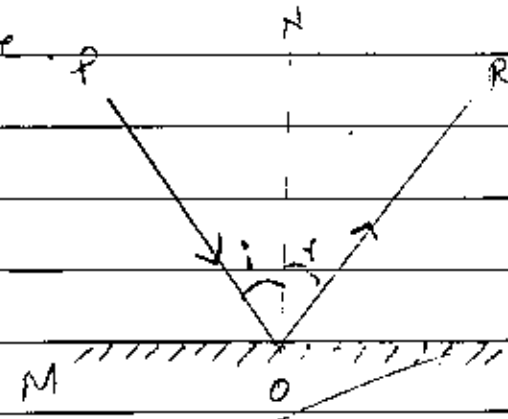
incident reflected ray and normal.

Laws of reflection :-

There are two laws of reflection

1. The angle of incidence is always equal to angle of reflection.
$Li = Lr$

2. Incident ray, Normal, and reflected ray all three lie on the same plain on the point of incidence.



Li = Angle of incidence
Lr = Angle of reflection
PO – Incident ray. PO – reflected ray
NO – Normal

According to the law of reflection,
$Li = Lr$
and PO, RO and NO all lie on the

पृष्ठ के अंकों का योग

same point at O on the same plane

11. Explain the mechanism of solar cooker with diagram?

Ans Introduction :- It is a device which is used to cook food using solar energy

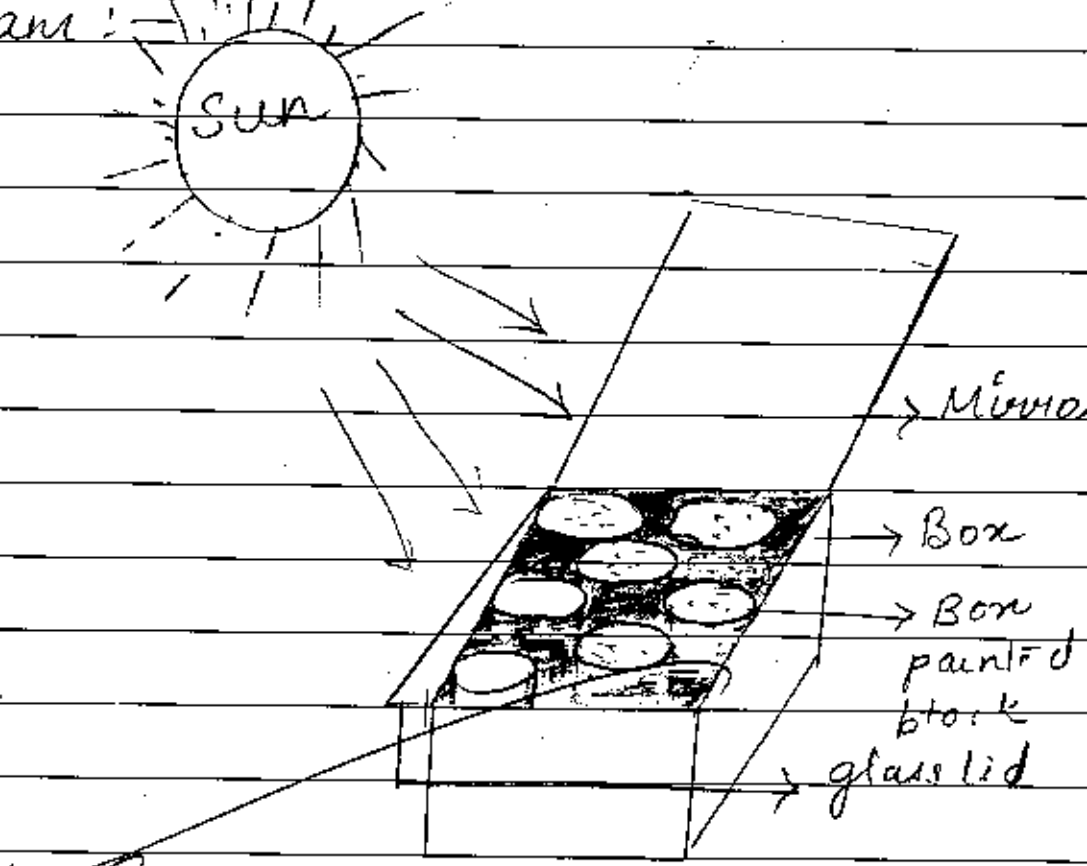
Construction :-

1. It consist of a insulated metal box painted black from inside
2. There are small boxes which are painted black from outside in which food is being kept
3. This box has a reflecting mirror
4. It is also covered with the glass lid
5. This whole apperatus is kept in the sun

पृष्ठ के अंकों का योग

योग पूर्व पृष्ठ + पृष्ठ 23 के अंक = कुल अंक

Diagram :-



SOLAR COOKER

Working :-

Solar cooker is kept in the sun and the reflector is added adjusted in such a way that sun rays fall directly on that reflector the food to be cooked is kept inside the small bones and than covered it with the glass lid and it is kept in the sun. The cooker absorbs more and more solar heat and the glass lid prevents the solar heat to go out from

the solar cooker as a result food is cooked in it

Advantages :-

1. It is used to cook food without using fuel.
2. This way of cooking food saves fuel
3. This way of cooking the food is cheap
4. It is cooked at low Temperature so nutrients are not lost

Disadvantages :-

1. It is not used for frying
2. It can't be used in night
3. Solar energy is not available all the time

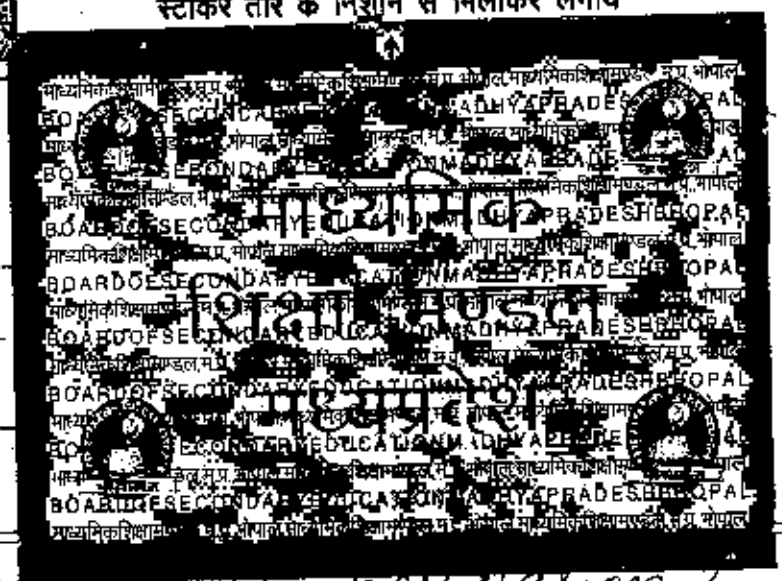
पृष्ठ के अंकों का योग

पूरक उ.पु. 4 पृष्ठ

माध्यमिक शिक्ष. ल, मध्यप्रदेश, भोपाल

1. केन्द्र की सील
2. पर्यवेक्षक के हस्ताक्षर व दिनांक Shukla 17/3/09
3. केन्द्राध्यक्ष के हस्ताक्षर की सील केन्द्र अध्यक्ष
4. केन्द्र क्रमांक 561002
6. परीक्षा का नाम High School
7. विषय Science 8. माध्यम English
8. दिनांक 17/2/09

परीक्षक के लिये
स्टीकर तीर के निशान से मिलाकर लगायें



पृष्ठ

B S E M P

12 What is meant by pollination? Differentiate between self and cross pollination?

Ans The transfer of pollen grains from the anther of the flower to the stigma of the another flower or same flower is called pollination. Pollination are of two types

1. Self pollination :- The transfer of pollen grains from anther to ~~the~~ stigma of same flower is called self pollination.

Advantages :-

1. Pollen grains are not required in excess
2. It is a common process

Disadvantages :-

1. Plants (flowers) grown by this are generally weak.

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२. Cross pollination :- The transfer of pollen grains from anther to the stigma of another flower is called cross pollination. For this type of pollination medium is required like

1. By wind
2. By water
3. By insects
4. By animal

Difference between self pollination and cross pollination are :-

Self Pollination	Cross pollination
1. In this type of pollination pollen grains are transfered from anther to stigma of same flower	1. In this type of pollination pollen grains are transfered from anther to stigma of another flower
2. In this type of pollination no medium is required for transfer of	2. Pollen grains are transfered through wind, insect,

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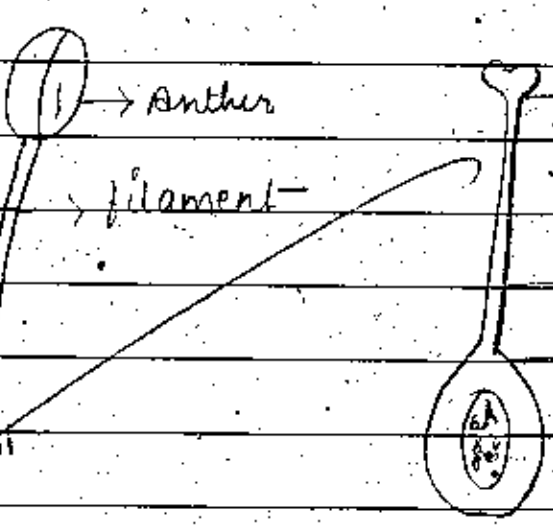
pollen grains	animal, water etc
3. It is necessary that flower be bisexual.	3. flower can be unisexual also
3) Flowers grown by this type of pollination are weak	4. Plants by this type of pollinati -n are healthy ✓



Pollen grains are transferred from Anther to stigma

13 Define : Electroplating

Ans The plating of less reactive metal on more reactive metal by the means of electric current is called electroplating. Electroplating is done to protect the metallic substance from corrosion.

An iron flower pot is electroplated with copper in the following way

First of all iron pot should be plated kept at negative electrode i.e. cathode and copper sulphate solution is taken in a beaker and at anode copper rod is taken.

Reactions :-

When electric current is passed through it copper sulphate solution decomposes into

$CuSO_4 \longrightarrow Cu^{2+} + SO_4^{2-}$

At cathode :-

Cu^{2+} goes to the cathode it takes two electron from it and

माध्यमिक शिक्षा म[illegible] [illegible]प्रदेश, भोपाल

1. केन्द्र की सील
2. पर्यवेक्षक के हस्ताक्षर व दिनांक 17/03/09
3. केन्द्राध्यक्ष के हस्ताक्षर की सील
4. केन्द्र क्रमांक 03102
6. परीक्षा का नाम High School
7. विषय Science 8. माध्यम English
8. दिनांक 17/3/09

परीक्षक के लिये
स्टीकर तीर के निशान से मिलाकर लगायें

उत्तर पुस्तिका का सरल क्रमांक 765290

1. परीक्षार्थी का अनुक्रमांक (अंग्रेजी अंकों में)

1	9	5	C	1	6	0	3	8

2. नीचे दिये प्रत्येक कालम में ऊपर दिये गये अनुक्रमांक के अंकों को उसी क्रम में शब्दों में लिखा जाए :-

one	nine	five	six	one	six	zero	three	eight

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turns into copper This copper is deposited on iron vase.

$Cu^{2+} + 2e \longrightarrow Cu$
(deposited on iron vase)

At anode :-
SO_4^{2-} goes to anode and give two electrons to copper

$SO_4^{2-} \xrightarrow{\text{reduction}} SO_4$

Then SO_4 reacts with copper to form copper sulphate

$Cu + SO_4 \longrightarrow CuSO_4$

As a result concentration of copper sulphate solution is maintained and copper rod at anode goes on becoming thinner and iron vase is plated with copper.

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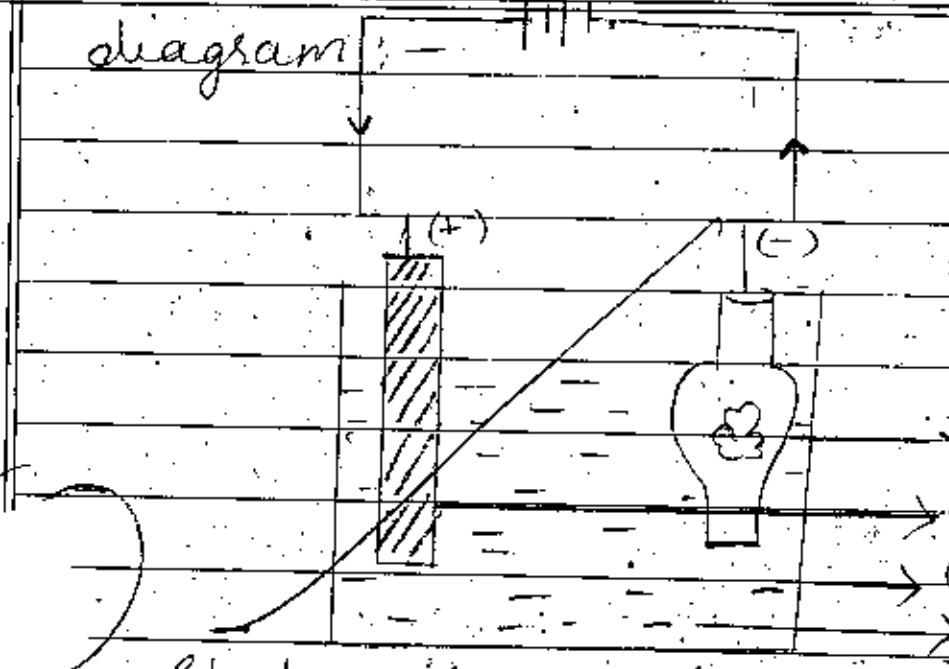
diagram :-



Electroplating of Iron vase

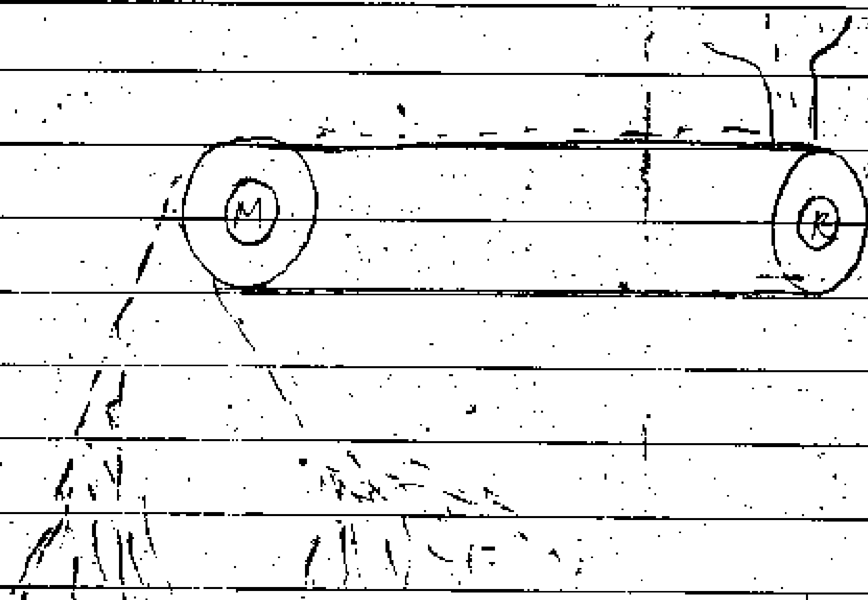
14 Explain the method of ore concentration with diagram.

1. Magnetic Separation method :-

In this method such type of ore is concentrated which have magnetic properties and impurity is not magnetic

Firstly in this process crushed ore is allowed to move on a roller all the magnetic ore is collected near the magnet and non-magnetic impurity is collected on other side

This method can be used for separating iron ore.



Impurity (Magnetic ore)

Magnetic Seperation

(ii) Froth floatation process -

This method is used for the sulphide ore. This is based on the principle that ore is added with water and impurity and oil like eucalyptus oil or pine oil. and hot compressed air is blown in it. Froth is formed and impurity settles down. Sulphide ore can be taken out with the froth and in this froth is formed so it is called froth floatation process

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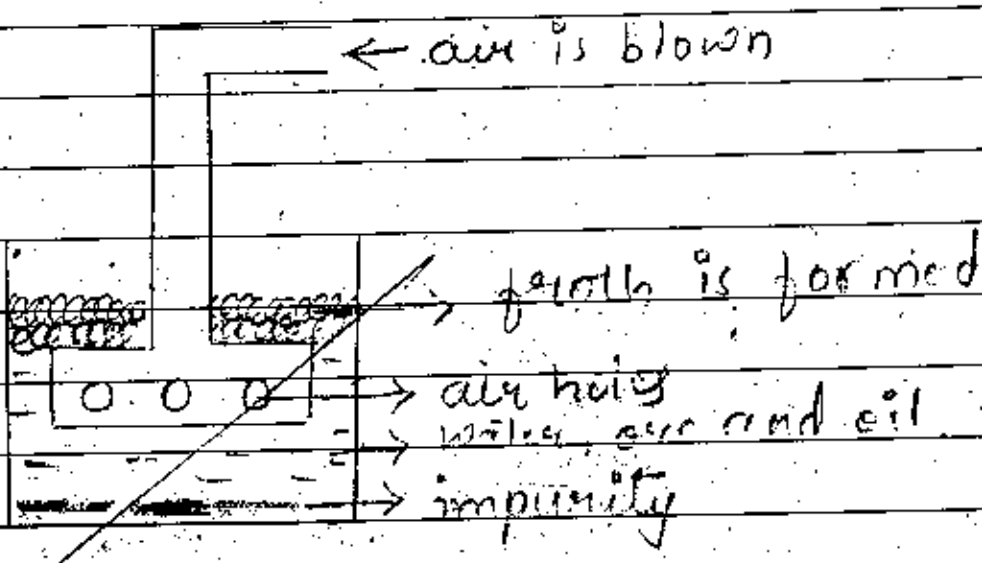

Froth Flotation Process