माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

मु.उ.पु. 24 पृष्ठ

कार्यालयीन उपयोग के लिए

परीक्षा के नाम की सील

हाई स्कूल परीक्षा

निम्न रिक्तियों की सही प्रविष्टि परीक्षार्थी द्वारा की जाए।

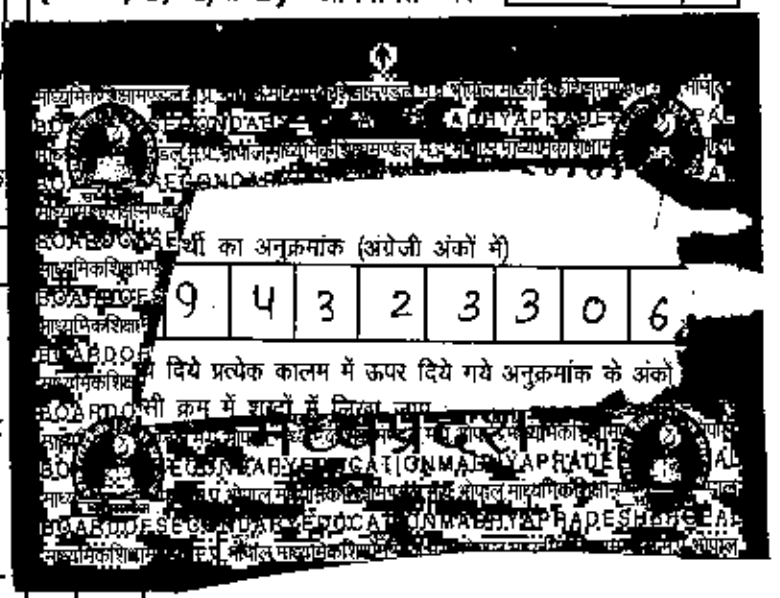
1. विषय कोड 2 0 0 परीक्षा का विषय Science

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 T-1034 सेट B

केन्द्र क्रमांक की सील

42030



परीक्षार्थी का अनुक्रमांक (अंग्रेजी अंकों में)

9	4	3	2	3	3	0	6

उपर दिये प्रत्येक कालम में ऊपर दिये गये अनुक्रमांक के अंकों को उसी क्रम में शब्दों में लिखा जाए

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 14 में है।

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

हस्ताक्षर (पर्यवेक्षक) Sanjay

नाम Sanjay Pathi पद Teacher

पता/संस्था S.V.M, Pathary

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

हस्ताक्षर केन्द्राध्यक्ष

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

प्रश्न	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
कुल प्राप्त	

प्रमाणित किया जाता है कि यथानुसार संलग्न पूरक उत्तर पुस्तिकाओं सहित ही उत्तरपुस्तिका का मूल्यांकन किया गया है। प्रश्न मूल्यांकन किया है। उत्तर पुस्तिका के अन्दर के अंक एवं कव्हर पृष्ठ पर दर्शाये अंक एक समान है एवं योग पूर्णतः सही है।

हस्ताक्षर (परीक्षक) — हस्ताक्षर (उपमुख्य परीक्षक) — हस्ताक्षर (मुख्य परीक्षक)

परीक्षक क्रमांक 47303 — दिनांक..... — 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 छोडें। 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।

BSEM

SECTION - A

Q.1 (A) Fill in the blanks

Ans:- 1 Mercury

2 Core

3 Jupiter

4 galaxy

5 Aryabhatta

(B) Match the correct pairs :

A	B
(i) Artery	Pure blood
(ii) Universal donor	'O' blood group
(iii) Nephridia	Earthworm
(iv) Red blood corpuscles	Haemoglobin
Hematite	Iron

Ques-2(A) Choose the correct alternatives:

1
Ans: (b) Concave lens

2.
Ans: (b) Ohm

3
Ans (b) Legume root

4
Ans (b) in the mitochondria.

5
Ans (b) Aluminium

(b) Write the answer in one word:

(1) Formation of water from Ice

Because, Ice = solid condition
water = Liquid condition.

(2) $Na_2CO_3 \cdot 10H_2O$

Glass

Seven

5

T-ion

पृष्ठ के अंकों का योग

पृष्ठ 6 के अंक

Section- B.

Q.3.
Ans-3.

Exothermic Reaction :-

Those reactions in which heat is evolved are called as Exothermic Reactions.

$$A + B \longrightarrow C + D + \text{Heat}.$$

Examples :-

(i) In the manufacture of Ammonia, Nitrogen & Hydrogen combine to form Ammonia and heat is evolved

$$N_2 + 3H_2 \overset{Fe/Mo}{\rightleftharpoons} 2NH_3 + \text{heat}.$$

Nitrogen (g) + Hydrogen (g) → Ammonia (g)

(ii) When calcium oxide & water are combined to form slaked lime, large amount of heat is evolved.

$$CaO + H_2O \longrightarrow Ca(OH)_2 + \text{Heat}.$$

Calcium oxide + water → Calcium hydroxide

पृष्ठ के अंकों का योग

Endothermic Reactions :-

Those reactions in which heat is absorbed are called as Endothermic reactions.

$$A + B + \text{heat} \rightarrow C + D$$

or

$$A + B \rightarrow C + D - \text{heat}.$$

Examples :-

i) In the manufacture of Nitric oxide heat is absorbed.

$$N_2 + O_2 \rightarrow 2NO - \text{heat}.$$

Nitrogen (g) Oxygen (g) Nitric oxide (g)

ii) When ice is converted into water then the vapours appear on its outer surface.

Ice + heat → Water

Ques 4)

	Aerobic Respiration		Anaerobic Respiration
1-	It takes place in presence of O_2	1.	It takes place in absence of O_2
2.	End product are CO_2 & H_2O	2.	End product are C_2H_5OH and CO_2
3.	Complete oxidation of food product in this process.	3.	Incomplete oxidation of food product in this process.
4.	Enzyme responsible for this are found in matrix of mitochondria	4.	Enzyme responsible for this process are found in cytoplasm.
5.	Very high amount of energy is evolved in this process	5	Very low amount of energy is evolved in this process
6.	It takes place in all cells	6.	It takes place only in higher animals

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7.	38 A.T.P molecule are produced with oxidation of one molecule of glucose	7.	2 A.T.P molecule are produced.
8.	It can be shown by the foll. equations: $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + 673$ kg cal.	8.	It can be shown by the foll. equation: $C_6H_{12}O_6 + 6O_2 \rightarrow 2C_2H_5OH + CO_2 + 21$ kg cal.

Q.5 Reflex Action :-

Certain inborn actions are performed immediately and spontaneously without the involvement of brain. These actions are called as Reflex action.

Examples :-

1. Coughing
2. Sneezing
3. Yawning
4. watering of mouth at the sight of sweets.

पृष्ठ के अंकों का योग

Types: Voluntary Actions
Involuntary Actions

Voluntary Action :- These actions are those in which animal performed its choice or they are with the will of animals.
Ex. On seeing a snake; one call for help, one run away or one try to kill it to save oneself.

Involuntary Actions :- These actions are without the will of animal means there is no choice in it. These actions are called as Reflex actions.

Reflex Arc :- All the reflex actions are conveyed through a definite path. This path is called as Reflex Arc.

पृष्ठ के अंकों का योग

Stimulus → Receptor organ → Sensory neuron

↓

Effector organ ← motorneuron ← Spinal co
(muscle)

Fig :- Reflex arc.

Diagram :-

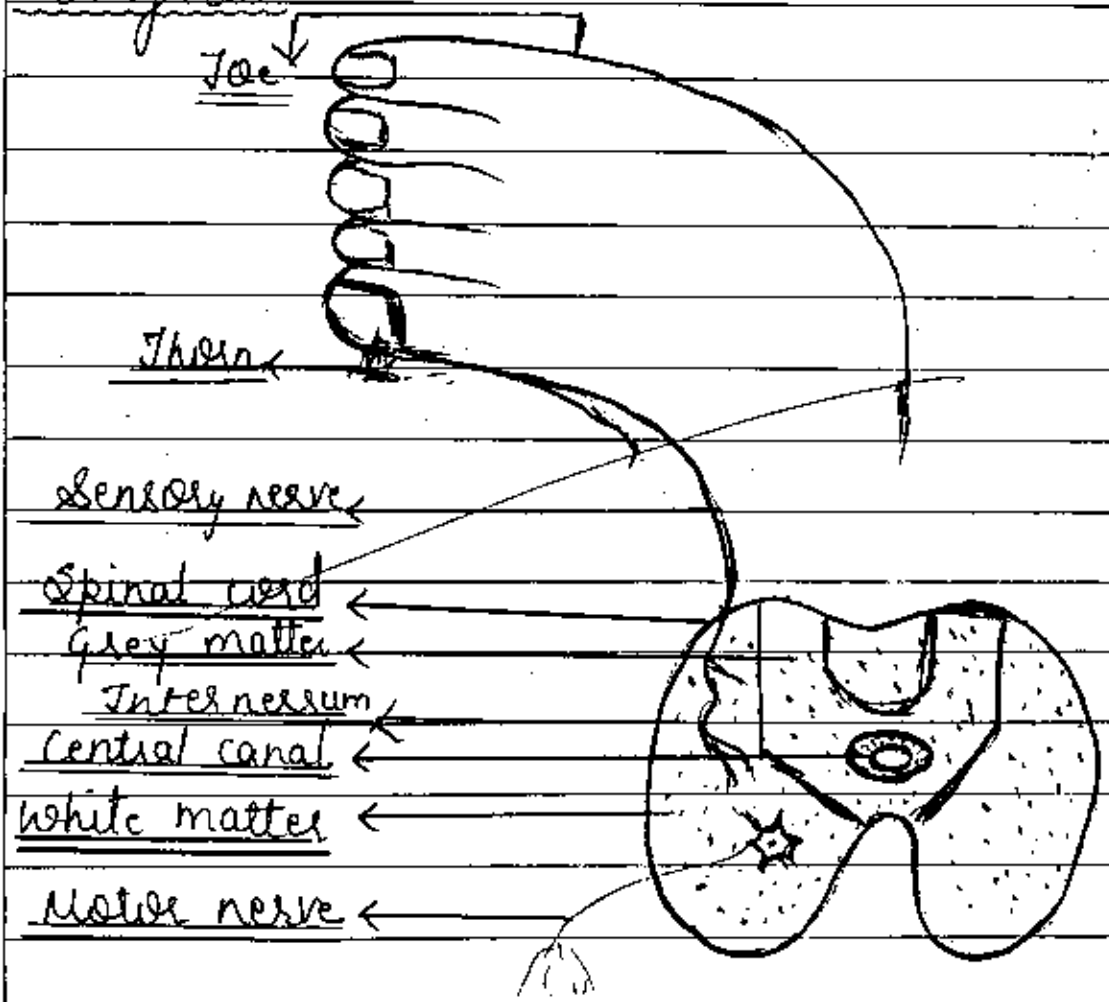

Fig :- Reflex Action

Q.6.

Alcohol :-

The hydroxy (-OH) derivative of hydrocarbon is called as Alcohol. It is attached to the hydrocarbon of alkyl group.

General formula :-

$C_n H_{2n+1} OH$

Or

$C_n H_{(2n+2)} O$

where n = no. of carbon atoms

	Formula	Common name	Iupac name
1.	CH_3OH	Methyl alcohol	Methanol
2.	CH_3CH_2OH	Ethyl alcohol	Ethanol

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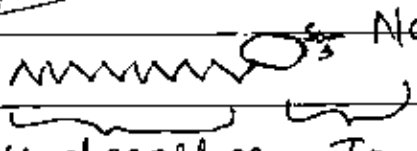
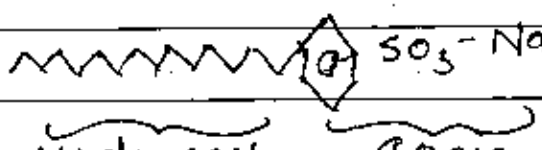
Q. 7

Soap	Detergent
1- Soap are made by salts of higher fatty acids.	1. Detergent are made from hydrocarbon of petroleum
2. They are biodegradable	2. They are not bio-degradable
3. They cannot be used in acidic medium as they decomposed into carboxylic acid.	3. They can be used in acidic medium as they are the salts of strong acid & are not decomposed into carboxylic acids
4. Ca & Mg salts are not soluble in hard water. Therefore they are not used in hard water.	4. Ca & Mg salts of detergent are soluble therefore they are used in hard water





Q.8.

Ozone Layer :- Ozone layer is at a height of 32-80 kms from earth's surface. This layer acts as woolen blanket for us as it absorb the harmful ultra-violet radiations coming from the sun. It acts as a filter for earth.

Substance effecting Ozone layer :-

1. Nitrogen oxide (NO_2)
2. Chloroform Carbon (CCl_2F_2)
3. Hallone
4. Kelone
5. Carbon monoxide (CO)
6. Carbon-di-oxide (CO_2)
7. Sulphur-di-oxide, etc (SO_2)

Harmful Effects of Ozone Layer :-

1. Temperature shoots up.
2. Some genetic disorder & long duration disease may occur.

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3. Skin cancer may occur as as effect of UV rays coming from the Sun

4. Micro-organism & vegetation are badly affected.

5. Some serious diseases like cataract inflammation may also inflict us.

6. The cells of upper surface of the body let a substance called as histamine which destroys the immune system of our body

7. Producer algae is destroyed. Fish, alligators and human being are also adversely affected.

Defective photosynthesis process, are also the adverse affect of ozone depletion.

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Ans-9

"The collection of rain water in known as Rain water harvesting"

Method :- In this method, the roof of the house is such made that water flow in one direction and from there it come to underground level and then used by wells & handpump. This process is called as "Rain water harvesting". In Tamilnadu it is called "TAPAKUUAM".

Main objectives of Rain water harvesting :-

Recycling of industrial waste.

To stop soil erosion.

Increase the quality of underground water level.

To get rid off water problem

during dry season

(Short Answer Type questions)

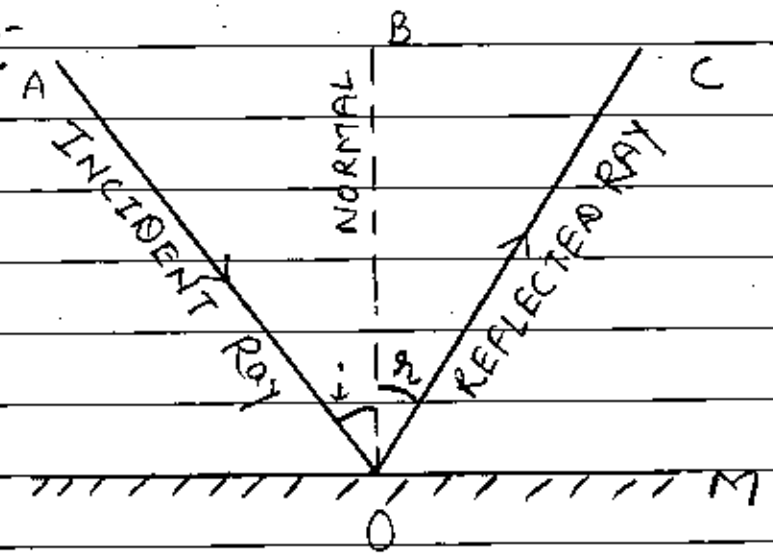
Q.10

Reflection :-

"The process of sending back the light rays which falls on an polished surface is called as Reflection".

Example :- We see image of our face due to reflection

Diagram :-



In the foll: figure :-

AB = Incident ray which strikes the mirror

पृष्ठ के अंकों का योग

OC = Reflected ray {which bounces off the mirror surface}

OB = Normal {Perpendicular drawn to the mirror}

O = Point of Incidence
{point on mirror where incident ray strikes}

∠AOB ie (i) = Angle of Incidence
{Angle made by Incident ray & Normal}

∠BOC ie (r) = Angle of Reflection
{Angle made by reflected ray & Normal}

M' = Mirror or
{Reflecting surface}

Laws Of Reflection :-

1. The incident ray, reflected ray and normal all lie in one place.

The angle Of incidence is equal to the angle of Reflection

$\angle i = \angle r$

Q.11

SOLAR COOKER :-

"A Solar cooker is a device which is used to cook food by utilizing the energy radiated by the sun."

Diagram :-

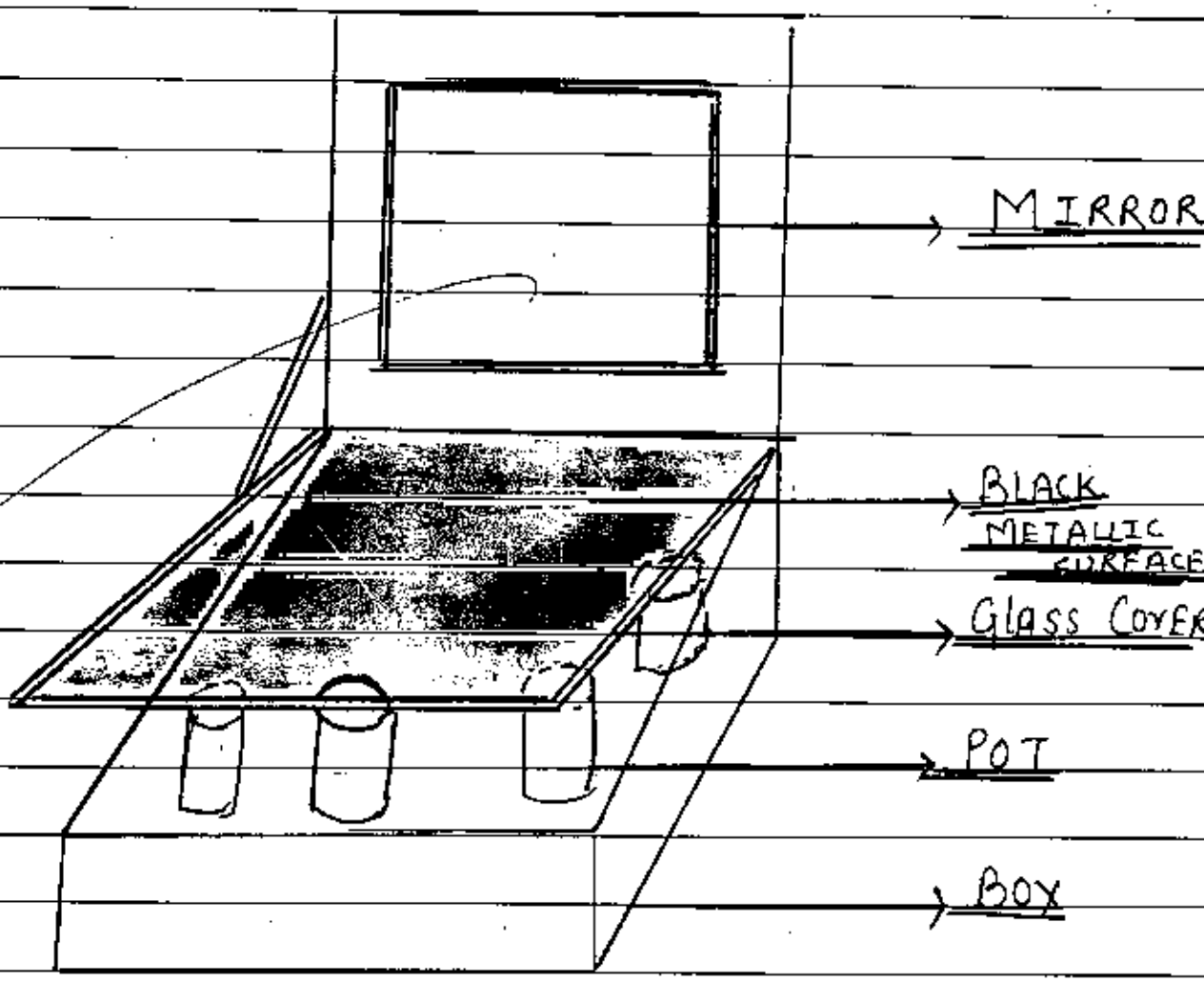


Fig :- SOLAR COOKER

पृष्ठ के अंकों का योग

CONSTRUCTION :-

A solar cooker consists of an insulated metal box or wooden box (P) which is painted with all black from inside. It is covered by a thick glass plate G. A reflector (R) is also attached with glass plate G. There are four pot in which the food is kept.

WORKING: In order to cook the food the reflector R is adjust in such a way that a strong beam of sunlight falls over the cooker top. More and more Infra-red ray enter the box. This is permeable for IR rays. These IR rays have a heating effect which enter the box. Then, this I-R rays make the temperature of about 100°- 140°c which cook the food.

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USES :—

1. Used for cooking purpose
2. Maintenance is negligible.
3. Also for frying purpose.
4. At once, four items can be cooked
5. It is free from any type of pollution.

DISADVANTAGE :-

1. It cannot be used in rainy season
Sunlight is not available regularly
At present trapping of solar energy is much costly.

पृष्ठ के अंकों का योग

Ques - 12

POLLINATION :-

"The transfer of pollen grains from anther to the stigma is called as Pollination"

Types of Pollination :-

There are Two types of pollination

Types

Self Pollination

Cross Pollination.

Self Pollination	Cross Pollination
1- The transfer of pollen grains from anther to stigma of same flower is called as self Pollination.	1. The transfer of pollen grain from anther to stigma of different flower but of same species is called as Cross pollination.
2. This process occur only in bisexual flowers	2. This process occur in both unisexual and bisexual flowers.
3. Flowers are colourless and odourless.	3. Flowers have colour & fragrance
No medium is required for the transfer of pollen grains.	4. Any medium like air, water, insects or animal is requir for the transfer of pollen grains.

5. Pollen grain are not require in abundance	5. Pollen grain are required in abundance.

(Long Answer Type Questions)

Q13 ELECTRIC MOTOR.

(i) DEFINITION :-

Electric motor is a device which converts electrical energy into mechanical energy.

It is based on the Fleming's left hand Rule.

(ii) PRINCIPLE :- It is based on the principle that when a coil rotates in a magnetic field, then by Fleming's left hand rule arms of the coil experience two equal and opposite forces

2009

माध्यमिक

1. केन्द्र की सील 432030

2. पर्यवेक्षक के हस्ताक्षर व दिनांक

3. केन्द्राध्यक्ष के हस्ताक्षर की सील

4. केन्द्र क्रमांक

6. परीक्षा का नाम High School

7. विषय Science 8. माध्यम English

8. दिनांक 17/03/09

पृष्ठ

भोपाल

...शक के लिये

...निशान से मिलाकर लगायें

...र्थी का अनुक्रमांक (अंग्रेजी अंकों में)

	4	3	2	3	3	0	6

...कालम में ऊपर दिये गये अनुक्रमांक ...म में शब्दों में लिखा जाए :-

which makes the coil deflect from its axis.

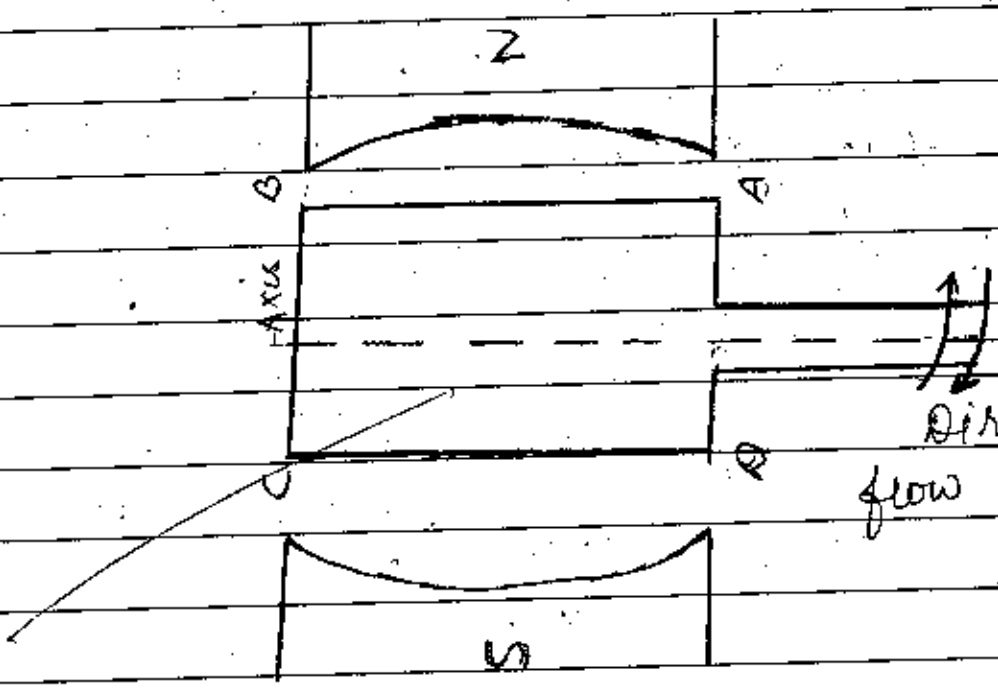

Fig :- Priciple of Electric Mot

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पृष्ठ के अंकों का योग

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(iii) Main parts of Electric Motor :-

1. Field Magnet
2. Coil
3. Split - Rings
4. Carbon brushes

1. Field Magnet :- This is a permanant magnet whose poles are concave. It is denoted by 'N' and 'S' commonly electric magnets are used in place of field magnet.

2. Coil or Armature :- It is denoted by ABCD. It is an insulated soft iron core.

3. Split ring :- These are denoted by S_1 and S_2 These two halves are connect- by the arms of the coil.

4. Carbon brushes :- These are two Carbon brushes denot by. B_1 and B_2. A battery is connected to these two halves of the ring.

Diagram :-

(iv)

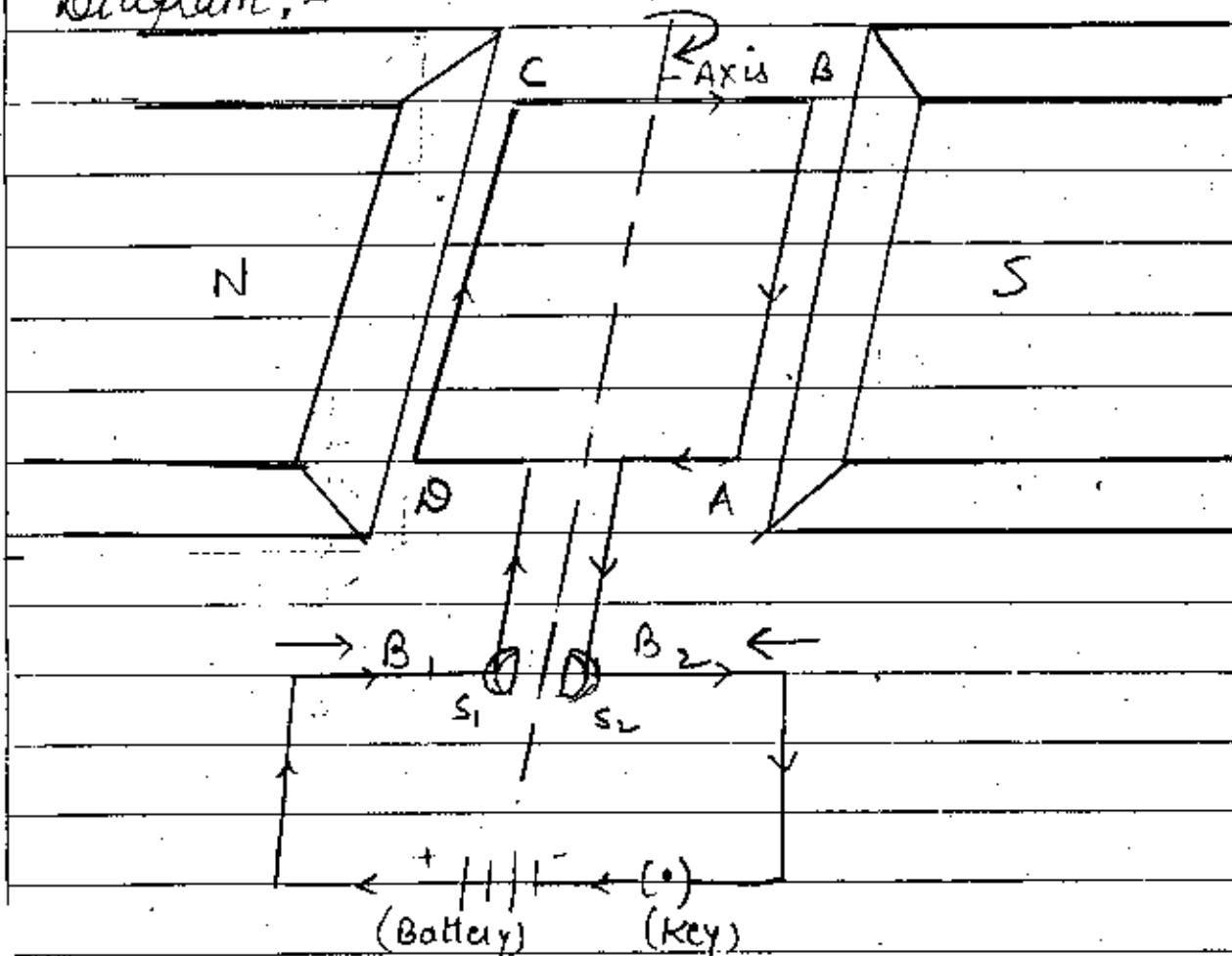

Fig :- Electric Motor

In the fig,

N & S = Field Magnet

ABCD = Coil

S_1 & S_2 = Split rings

B_1 & B_2 = Carbon brushes

BSEMP

(4)

प्राप्त अंक कुल अंक

Q.14

METALS

About 118, elements are known. Out of these 22 are Non-Metals

Physical Properties of Metals :-

1- State
2. Malleability & Ductility
3. Metallic Lusture
4. Sonorous
5. Density
6. Melting & boiling point
7. Hardness

1. State :- All metals are solid at room - temperature.

Exception :-

Mercury is a metal which is liquid at room temperature

2. Malleability & Ductility :- Metals are malleable and ductile. The property of of a metal by which it can be converted into thin sheets is called as Malleability.

पृष्ठ के अंकों का योग

2009

माध्यमिक शिक्षा मण्डल, भोपाल

एक उ.पु. 4 पृष्ठ

1. केन्द्र की सील 432039
2. पर्यवेक्षक के हस्ताक्षर व दिनांक 17/3/09
3. केन्द्राध्यक्ष के हस्ताक्षर की सील
4. केन्द्र क्रमांक
6. परीक्षा का नाम High School
7. विषय Science 8. माध्यम English
8. दिनांक 17/03/09

परीक्षक के लिये
स्टीकर तीर के निशान से मिलाकर लगावें

उत्तर पुस्तिका का सरल क्रमांक 882063

1. परीक्षार्थी का अनुक्रमांक (अंग्रेजी अंकों में)

1	9	4	3	2	3	3	0	6

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

One	nine	four	three	two	three	three	zero	six

- पृष्ठ

BSEMP

The property of a metal by which it can be converted into thin wires is called as Ductility.

3 Hardness :- Metals are generally hard

Exception :- Sodium & Potassium. They can be cut by a knife.

4 Melting & Boiling point :- Metals have high melting and boiling point.

(extra)

P.T.O.

पृष्ठ के अंकों का योग

CHEMICAL PROPERTIES OF METALS

1. Electropositive elements.
2. Action of acid
3. Action of Hydrogen
4. Action of water
5. Action of chlorine
6. Action of chloride

1- **Electropositive elements :-** Metals form positive ion by loosing electrons.

for ex :- $Na + e^- \rightarrow Na^+$

2,8,1 — 2,8

(2) **Action of acid :-** Metals reacts with acid and liberate hydrogen gas.

for ex :- $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2 \uparrow$

Zinc — Sulphuric acid — Zinc Sulphate — Hydrogen gas (g)

(3) Action of hydrogen :-
Metals react with hydrogen to form electrovalent hydrides.

for ex :- $2K + H_2 \rightarrow 2KH$

$2Ca + H_2 \rightarrow 2CaH$

(4) Action of Chloride :-
Metals react with chlorine to form electrovalent chlorides (4

for ex :-

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