



# माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

20 पृष्ठीय

परीक्षार्थी द्वारा भरा जावे ↓

परीक्षा का विषय	विषय कोड	परीक्षा का माध्यम
SCIENCE	2 0 0	ENGLISH

स्टीकर तीर के निशान ↓ से मिलाकर लगायें

परीक्षार्थी द्वारा भरा जावे →

माध्यमिक शिक्षा मण्डल म.प्र. भोपाल

SECONDARY EDUCATION MADHYA PRADESH

अकों में परीक्षार्थी का रोल नम्बर

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शब्दों में

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केवल शिरो नम्बर लिखकर अपना रोल नम्बर भरी।

सदाहरणार्थ

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केन्द्राध्यक्ष/सहायक केन्द्राध्यक्ष द्वारा भरा जावे →

क - पूरक उत्तर पुस्तिकाओं की संख्या अंक में

ख - परीक्षार्थी का कक्ष क्रमांक 05

ग - परीक्षा का दिनांक 16 03 2020

परीक्षा का नाम एवं परीक्षा केंद्र क्रमांक की मुद्रा

वर्ष-2020

केन्द्र क्रमांक-131000

पर्यवेक्षक का नाम एवं हस्ताक्षर

केन्द्राध्यक्ष/सहायक केन्द्राध्यक्ष के हस्ताक्षर

परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे ↓

परीक्षक एवं उपमुख्य परीक्षक द्वारा भरा जावे →

प्रमाणित किया जाता है कि मूल्यांकन के समय पूरक उत्तर पुस्तिकाओं की संख्या उपरोक्तानुसार सही पाई होले क्राफ्ट स्टीकर क्षतिग्रस्त नहीं पाया गया तथा अन्दर के पृष्ठों के अनुरूप मुख्य पृष्ठ पर अंकों की प्रविष्टि एवं अंकों का योग सही है।

निर्धारित मुद्रा : नाम, पदनाम, मोबाईल नम्बर, परीक्षक क्रमांक एवं पदांकित संस्था के नाम की मुद्रा लगाएं।

उप मुख्य परीक्षक के हस्ताक्षर एवं निर्धारित मुद्रा

जोशी

UNV. 3/297

प्रश्न क्रमांक	प्रश्न क्रमांक के सम्मुख प्राप्त करें।	पृष्ठ क्रमांक	की हों में
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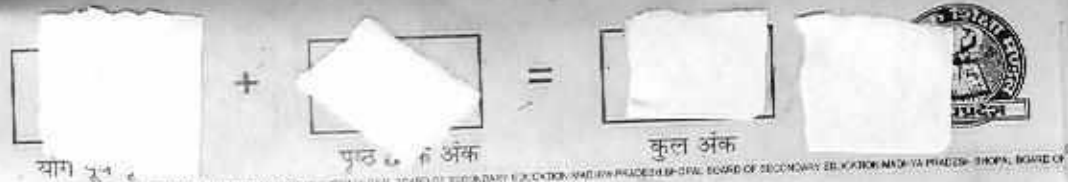
Laser/Inkjet/Copier Label A4ST-16 99.1x33.9mmx16



नोट :- "हायर सेकेण्डरी परीक्षा में केवल वाणिज्य संकाय के विषयों तथा हाईस्कूल परीक्षा में प्रायोगिक विषय को छोड़कर शेष विषयों हेतु नियमित एवं स्वाध्यायी छात्रों के लिये 100 अंकों का होगा किन्तु नियमित छात्रों को 100 अंक के प्राप्तांक का 80% एवं स्वाध्यायी छात्रों को 100 अंक के प्राप्तांक ही अंकसूची में प्रदर्शित किया जाएगा।"

कल प्राप्तक शब्दों में कल प्र





Q.no.3

Ans.3 (a) (i) Mercury ✓

Ans.3 (b) (iii) Transport of water ✓

Ans.3 (c) (ii) Pituitary gland ✓

Ans.3 (d) (iii) Dioptre ✓

Ans.3 (e) (ii) 25 cm ✓

**B  
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Q.no.4

Ans.4 (a) In Double displacement reaction there is an exchange of ions between the reactants.

Ans.4 (b) The pH of pure water is 7.

Ans.4 (c) Anaerobic respiration takes place in absence of air (oxygen).

Ans.4 (d) The unit of electric charge is Coulomb.  
(c).

Ans.4 (e) Chlorofluorocarbons (CFCs) are used in refrigerators and fire extinguishers.

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पृष्ठ 4 के अंक



Q.no.5

Ans.5 Magnesium is a highly reactive metal. when stored, it reacts with oxygen to form a protective layer of magnesium oxide on its surface. This layer is quite stable and prevents further reaction of magnesium ribbon with oxygen i.e., do not allow magnesium ribbon to burn with oxygen. Therefore, the magnesium ribbon is cleaned before burning so that this layer can be removed and underlying metal can be exposed to air.

Q.no.6

Ans.6 Mendeleev's Periodic law states that "the physical and chemical properties of elements are the periodic function of their atomic masses."

Q.no.7

Ans.7 The transfer of pollen grains from the anther of stamen of a flower

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$$\boxed{\text{योग पूर्व पृष्ठ}} + \boxed{\text{जके}} = \boxed{\phantom{\text{योग पूर्व पृष्ठ}}}$$



to the stigma of pistil of the same flower is called self pollination.

Q.no.8

Ans.8 Heredity:- The transfer of traits and characteristics in living beings from one generation to another is called heredity.

Q.no.9

Ans.9 Focal length :- The distance between the pole (P) and principal focus (F) of a spherical mirror is called focal length of the spherical mirror. It is represented by letter 'f'.

Q.no.10

Ans.10 Corrosion:- The surface of some metals such as iron is corroded when they are exposed to moist air for a long period of time. This phenomenon is known as corrosion.

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भाग पूर्व पृष्ठ

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पृष्ठ 6 के अंक

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प्रश्न क्र.

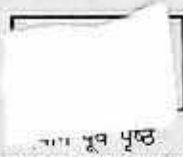
Ways to prevent corrosion (rusting of iron)

(i) Oiling, greasing or painting: By applying oil, grease or paint the surfaces become waterproof due to which moisture and oxygen present in atmosphere do not in come in direct contact with iron. Hence, corrosion (rusting) is prevented.

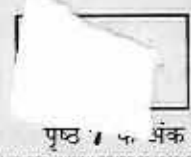
**B  
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(ii) Galvanisation: It is a process in which the surface of iron is coated by a layer of zinc metal which prevents the iron item from coming in direct contact with moisture and oxygen. Hence, corrosion is prevented.

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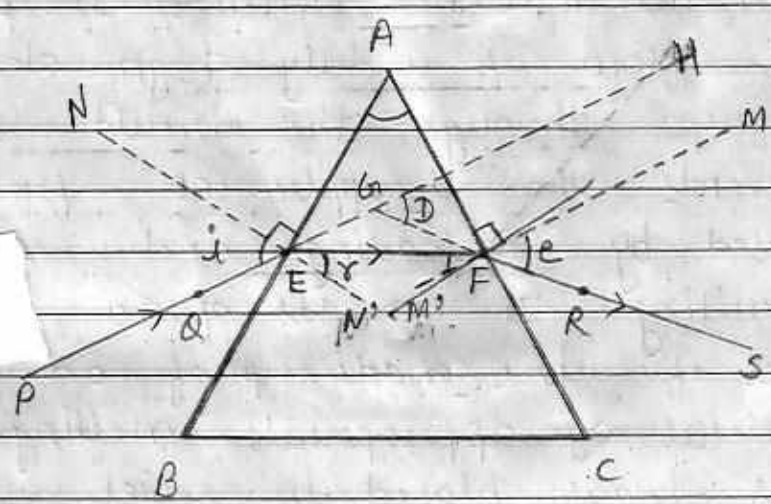


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Q.no.11

Ans.11 Refraction of light through a prism —



- Here, PE = incident ray       $\angle i$  = angle of incidence
- EF = refracted ray           $\angle r$  = angle of refraction
- FS = emergent ray           $\angle e$  = angle of emergence
- $\angle A$  = angle of prism       $\angle D$  = angle of deviation.

Q.no.12

Ans.12 Electric fuse :- An electric fuse is an important component in all domestic circuits. It prevents the flow of unduly high electric current through the circuit and prevents the appliances from damage caused by overloading and short circuiting. It consists of a small piece of wire made up of an alloy or a metal of appropriate melting point. It is always placed in series with the device. When the current flowing in the circuit reaches above the limit of the fuse, the temperature of the fuse wire increases. Joule heating takes place in fuse which melts it and breaks the circuit. It prevents the further damage of the devices connected in the circuit.

**B  
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E**

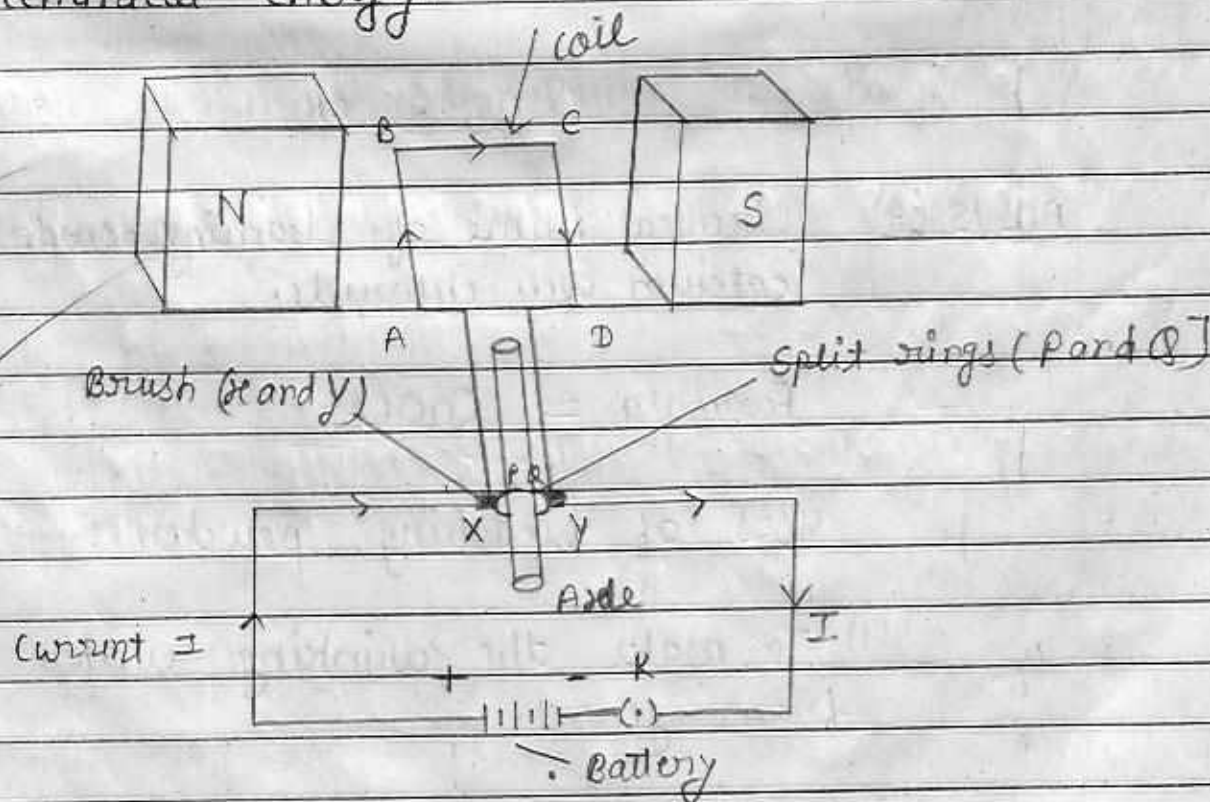




Q.no.13

Ans 13 Principle of an electric motor :—

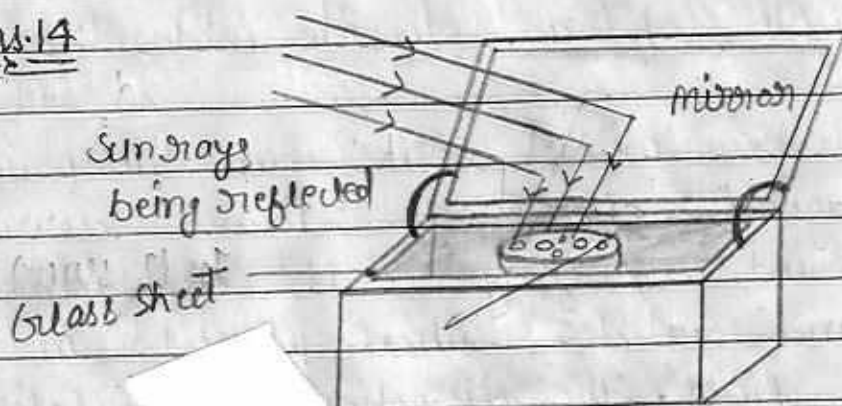
An electric motor works on the principle of magnetic effect of electric current. A current carrying coil experiences a force and rotates when placed in a magnetic field. The direction of rotation of coil is given by Fleming's left hand rule. In an electric motor, the electrical energy is converted into mechanical energy.



Electric motor

Q.no. 14

Ans. 14



Solar cooker

Q.no. 15 'OR'

Ans. 15 OR'

Chemical name of bleaching powder is 'calcium oxy chloride.'

Formula =  $\text{CaOCl}_2$

Uses of bleaching powder:—

- (i) To make the drinking water free from germs.
- (ii) As a bleaching agent, in textile industries for bleaching cotton and linen.



Q.no. 16

Ans 16

<u>Name</u>	<u>Formula</u>	<u>Structural formula</u>
Methane	CH <sub>4</sub>	$  \begin{array}{c}  \text{H} \\    \\  \text{H} - \text{C} - \text{H} \\    \\  \text{H}  \end{array}  $
<del>Ethane</del> Ethane	C <sub>2</sub> H <sub>6</sub>	$  \begin{array}{c}  \text{H} \quad \text{H} \\    \quad   \\  \text{H} - \text{C} - \text{C} - \text{H} \\    \quad   \\  \text{H} \quad \text{H}  \end{array}  $
Propane	C <sub>3</sub> H <sub>8</sub>	$  \begin{array}{c}  \text{H} \quad \text{H} \quad \text{H} \\    \quad   \quad   \\  \text{H} - \text{C} - \text{C} - \text{C} - \text{H} \\    \quad   \quad   \\  \text{H} \quad \text{H} \quad \text{H}  \end{array}  $
Butane	C <sub>4</sub> H <sub>10</sub>	$  \begin{array}{c}  \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\    \quad   \quad   \quad   \\  \text{H} - \text{C} - \text{C} - \text{C} - \text{C} - \text{H} \\    \quad   \quad   \quad   \\  \text{H} \quad \text{H} \quad \text{H} \quad \text{H}  \end{array}  $



प्रश्न क्र.

Q. no. 17 'OR'

Ans. 17 'OR' Plants get each of the raw material required for photosynthesis from the following sources —

(i) Carbon di-oxide [ $CO_2$ ] — The plants absorb  $CO_2$  from atmosphere through stomata present in leaves.

(ii) Water :- Plants absorb water from soil through roots and transport it to the leaves.

(iii) Sunlight :- Plants get sunlight from Sun.

(iv) Chlorophyll :- In green plants, the chlorophyll is present in chloroplasts of the leaves.

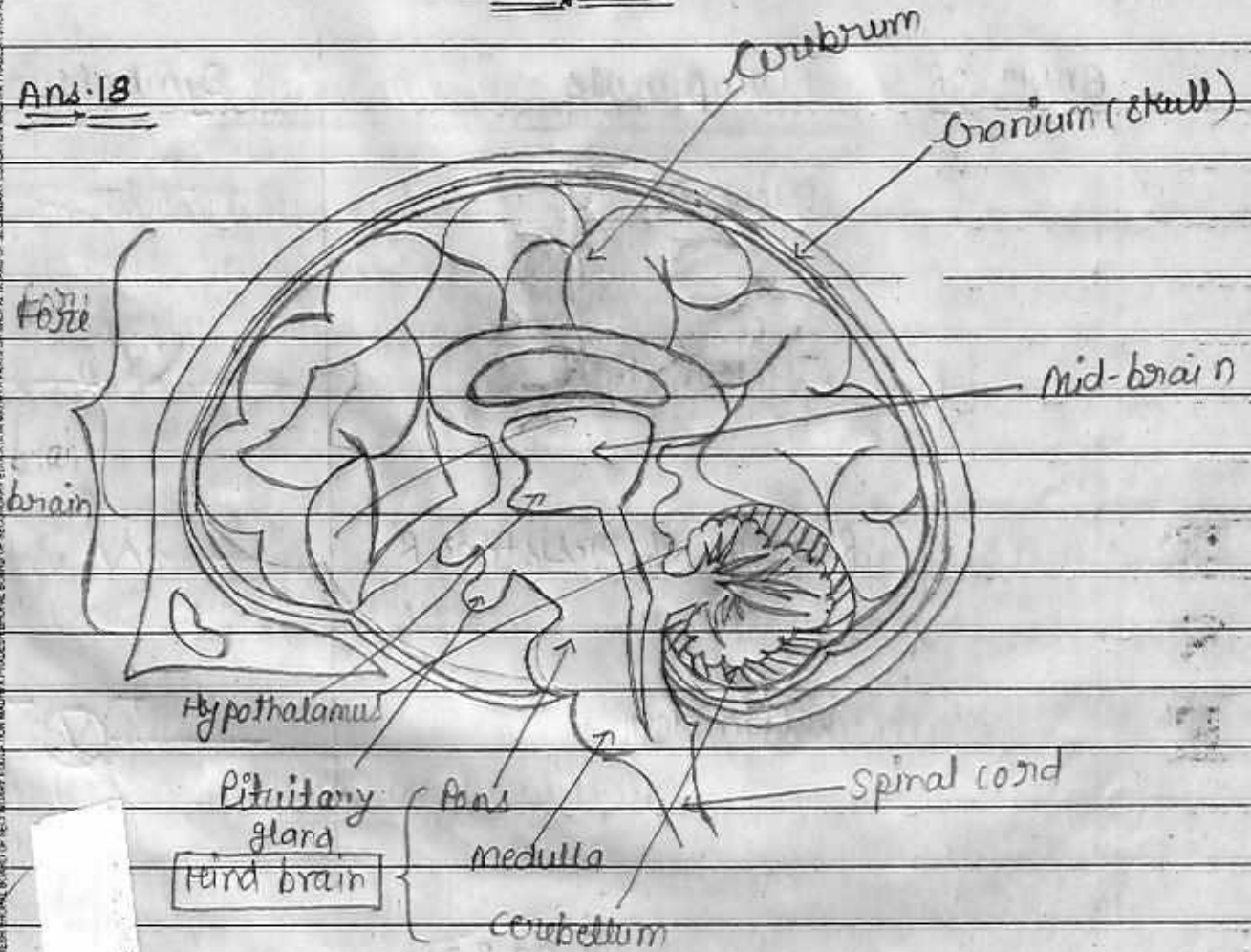
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प्रश्न क्र.

Q.no.18

Ans.18



**B  
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{ Human Brain }



प्रश्न क्र.

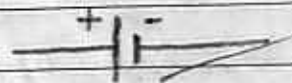
Q.no. 19 'OR'

Ans. 19 'OR'

Components

Symbols

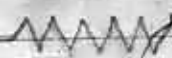
Electric cell



Electric bulb



Resistor of resistance R



Voltmeter



**B  
S  
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Q.no 20

Ans. 20 Physical properties of Metals —

- (i) Metals are good conductors of heat and electricity.
- (ii) They are generally solid at room temperature except mercury.



- (iii) They have a shiny surface i.e. lustre.
- (iv) They are malleable and ductile.
- (v) They have high melting and boiling point.

Q.no.21 'OR'

Ans.21 'OR' The embryo gets nourishment inside the mother body from the both blood of mother. For this purpose a special tissue known as placenta is developed. It has a disc like structure and is embedded in the uterine wall. Placenta contains villi on the embryo side of the tissue and on the mother side here are blood spaces, which surrounds the villi. In this way placenta provides a large surface area to transfer the glucose, oxygen and other requirements to the embryo from the mother body and the developing embryo also generates some waste products which are removed by transferring them into <sup>the</sup> mother blood. In this way, the placenta tissue connects embryo with mother.



Q.no. 22 OR'

Ans. 22 OR' (a) Radius of curvature :- The radius of the sphere of which the reflecting surface of the spherical mirror forms a part is called the Radius of curvature of a spherical mirror. It is represented by letter 'R'.

(b) Given,

$$\text{Radius of curvature, } (R) = 20 \text{ cm}$$

we know that

$$\text{Radius of curvature } (R) = 2 \times \text{focal length } (f)$$

so,

$$\begin{aligned} \text{Focal length } (f) &= \frac{1}{2} \times R \\ &= \frac{1}{2} \times 20 \end{aligned}$$

$$(f) = 10 \text{ cm} \quad \text{Ans.}$$

Hence, The focal length of the spherical mirror is 10 cm.