

Samyak

An Institute For Civil Services

RAS - 23 MAINS TEST SERIES

सिद्धि-II - 006

Time : 3 Hours

Maximum Marks : 200

सामान्य विज्ञान एवं प्रौद्योगिकी
General Science & Technology

Paper - IInd Unit - II

Name :		MARKS	
Enroll. No.:	Part	Attempted Questions	Marks Obtained
Date of Birth :	Part - A	20	24½
Medium : english	Part - B	15	32
E-mail :	Part - C	7	27½
Exam Date : 11-07-24	Total	42	84
Inviligator's Signature :			
ECN:	RCN:	Hindi: 8	English: 9

अनुदेश (Instructions)

1. परीक्षा शुरू होने से पहले पुस्तिका को जाँच लें।
Please check the booklet before commencement of the exam.
2. अंक योजना प्रत्येक खंड के प्रारम्भ में दी गई है।
The marking scheme is given at the start of every section.
3. अभ्यर्थियों को उत्तर निर्धारित शब्द सीमा से अधिक नहीं लिखना चाहिए, इसका उल्लंघन करने पर अंक काटे जा सकते हैं।
Candidates should not write more than the prescribed word limit in answers, violating this may result in deduction of marks.
4. अभ्यर्थियों को निर्देशित किया जाता है कि किसी भी प्रश्न का उत्तर प्रश्नोत्तर पुस्तिका में निर्धारित स्थान पर ही लिखें। बॉर्डर लाईन से बाहर प्रत्युत्तर नहीं लिखें। बॉर्डर लाईन के बाहर लिखे गये उत्तर को जाँचा नहीं जायेगा।
Candidates are directed to write answers only in the prescribed space of booklet. They should not write answer outside the border line. Answer written outside the border line will not be checked.

SAMYAK, Near Riddhi Siddhi, Gopalpura Bypass, Jaipur, 9875170111
Test Series Helpline & Whatsapp - 9414988860, Email Id - samyakttestseries@gmail.com

	REVIEW PARAMETERS	SCALE			
		Good	Above Average	Average	Below Average
1.	DOES THE ANSWER ADDRESS THE DEMAND OF THE QUESTION?				
a.	Answer Relevancy			✓	
b.	Answer Enrichment points like use of: · Key Terms/ Subject Vocabulary. Use of Commission/ report/ government publication/ judgements, etc. Association with the Current Affairs and use of examples to explain the concept and idea			✓	
2.	HOW WELL IS THE ANSWER PRESENTED?				
a.	Structure - Intro, Body, Conclusion			✓	
b.	Presentation – Using Subheadings/ points/ highlighting/ flowcharts/ diagrams/ maps		✓		
c.	Language & Grammar			✓	
d.	Word limit			✓	

Detailed Comments / Feedback / Suggestions for Improvement

विस्तृत टिप्पणियाँ/फीडबैक/सुधार के लिए सुझाव :-

1.

Presentation

2.

- wordings needs to be improved

3.

4.

→ Draw flow charts if possible.

5.

6.

Content

be specific with examples.

7.

8.

→ relate technology & with

9.

do's - economic development.

10.

→ 6-7 differences should be

11.

written.

Part - A

Note : Answer the following questions in 15 words. Each question carries 2 marks.

नोट : निम्न प्रश्नों के उत्तर 15 शब्दों में दीजिए। प्रत्येक प्रश्न 2 अंक का है।

1. 'ग्लोबल पार्टनरशिप ऑन आर्टिफिशियल इंटेलिजेंस' पर टिप्पणी लिखिए।

Write note on 'Global Partnership on Artificial Intelligence'.

CPAI - 1 Agreement between ^{100+ countries} ~~Countries~~; to promote, facilitate and work jointly in field of AI
India joined this partnership in June-2020
Under it promote to - AI postal, Research and development and Innovative fund etc.

(Write above this line only)

2. 'द्विनिषेचन' - परिभाषित कीजिए।

Define 'Double fertilization'.

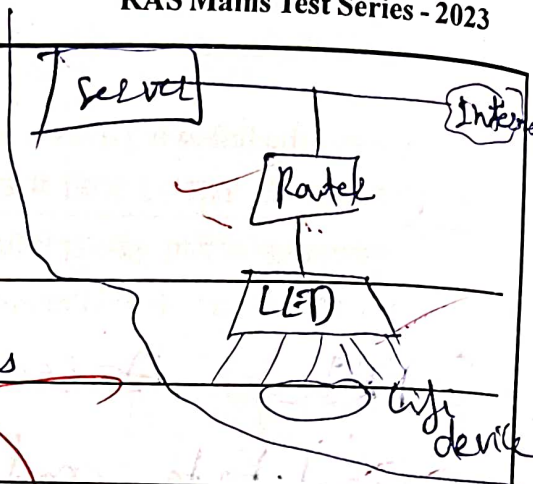
(Write above this line only)

3. हाल ही में सुर्खियों में रहा 'आर्कटिक भेड़िया'।

Recently seen in the news, 'Arctic wolf'.

(Write above this line only)

4. वायरलेस फिडेलिटी, लाइट फिडेलिटी से किस प्रकार भिन्न है?
How is wireless fidelity different from light fidelity?



Wi-fi	Li-fi
Transaction by radio waves	Light waves
Range - 100 meters	10 meters
Speed - (1-10 Gbps)	100 mbps
data transaction in a building	in a room

you work abroad
LAN, WAN etc

5. 'रंघीय वाष्पोत्सर्जन' पर टिप्पणी लिखिए।
Write note on 'Stomatal Transpiration'.

Found in vegetables specially in leaves, where transpiration takes place through stomatal gland on leaf surface. What is Transpiration itself - 2

(Write above this line only)

6. एन्जाइमों की उत्प्रेरण क्रियाशीलता को प्रभावित करने वाले कारकों के नाम लिखिए।
Name the factors affecting the catalytic activity of enzymes.

- (I) Temperature
- (II) Pressure
- (III) Humidity

(Write above this line only)

7. नाइट्रोजन स्थिरीकरण में सहायक सूक्ष्मजीवों के नाम लिखिए।
Write the names of microorganisms helpful in nitrogen fixation.

(1) Azobacterium and

(11) Protococci

(Write above this line only)

8. भारत में सुपर कम्प्यूटर के विकास में संलग्न किन्हीं चार संस्थाओं के नाम लिखिए।
Write the names of any four organizations involved in the development of supercomputers in India.

(1) Microsoft

(11) HP

(111) Dell

(1111)

(Write above this line only)

9. 'क्वाशिओरकोर रोग' पर टिप्पणी लिखिए।
Write note on 'Kwashiorkor disease'.

1 1/3

Kwashiorkor disease is found in children below the age of 5 yr.

It is due to deficiency of protein.

Due to Not proper diet physical development hampers.

Prevention - 2

(Write above this line only)

10. अग्र चवर्णक दाँत व रदनक दाँतों में दो अन्तर उल्लेखित कीजिए।
Mention two differences between premolar teeth and canine teeth.

(Write above this line only)

11. लार्यन्क्स अथवा स्वरयंत्र
Larynx

purpose

Larynx in throat creates lyrics. Due to excess pressure on larynx sometimes it damages.

(Write above this line only)

12. खाद्य विकिरण के जोखिम या सीमाएँ लिखिए।
Write the risks or limitations of food irradiation.

- (i) Excess use can change chemical property.
- (ii) Harmful for health as it may cause disease like - cancer.
- (iii) Can change natural property and nutrition can reduce its costly and limited availability.

(Write above this line only)

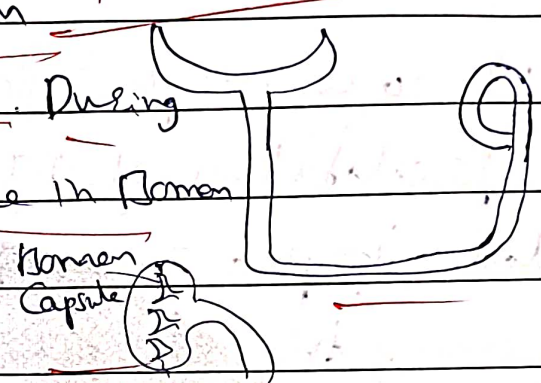
13. 'बोमेन सम्पुट' पर टिप्पणी लिखिए।
Write note on 'Bowman's Capsule'.

13

A cup like structure found in kidney. Two walled structure. During urination first step takes place in Bowman Capsule.

Blood waste

They are found in nephrons



(Write above this line only)

14. अंतरिक्ष वहनीयता
Space sustainability

Capacity developed to sustain in space. For that specific food and exercises are required.

(Write above this line only)

15. यौगिक व मिश्रण में कोई दो अन्तर उल्लेखित कीजिए।
Mention any two differences between compound and mixture.

Compound	Mixture
(i) Compound is obtained by chemically combining two or more component	(i) It is obtained by physically combining two or more components
(ii) Property of compound will be different from elements	(ii) Shows properties of all elements

(Write above this line only)

16. सूचना प्रौद्योगिकी एवं संचार विभाग (राजस्थान सरकार) के प्रमुख कार्यों को लिखिए।

Write the main functions of the Department of Information Technology and Communications (Government of Rajasthan).

(1) To work for promotion, development and facilitation of ITC (ii) Infrastructure development like IT park in Jaipur and Kota (iii) Providing training through RCT like RCIT etc (iv) Organising Seminars and Courses for promotion

(Write above this line only)

17. 'डाटा स्थानीकरण' की अवधारणा को स्पष्ट कीजिए।

Explain the concept of 'data localisation'.

why in news - 2

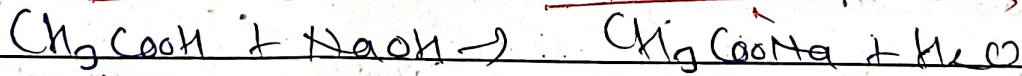
(1) Data based at a local space instead of sending them centralised cloud

Due to it - (i) speed of data retrieval and efficiency increases (ii) speedy disposal of work etc.

(Write above this line only)

18. उदासीनीकरण अभिक्रिया
Neutralization reaction

To neutralize effect of acid and base on reaction of acid and base salt generates + H₂O



Like to neutralise Acidity of stomach - NaHCO₃ mg (OH)

To Neutralise Acidity of soil Lime is used

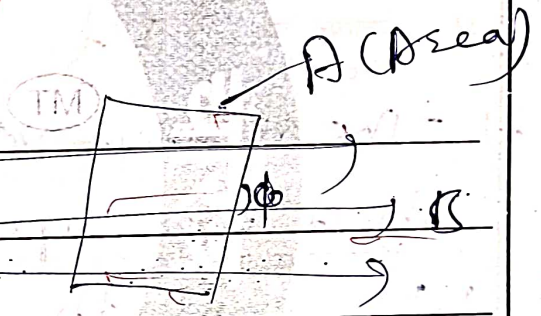
(Write above this line only)

19. योद्धा डी-1
Yotta D-1

(Write above this line only)

20. चुम्बकीय फ्लक्स
Magnetic flux

Total magnetic waves passing
from an ^{plane} perpendicular area situated
in magnetic field



denoted by - Φ (weber)

formula $\Phi = AB \cos \theta$

- A - Area of field
- B - magnetic field
- θ - angle between both

(Write above this line only)

21. 'डार्क मैटर' पर टिप्पणी लिखिए।
Write note on 'Dark Matter'

(Write above this line only)

22. वायरस व प्रोटोजोआ जनित किन्हीं चार-चार रोगों के नाम लिखिए।

Write the names of any four diseases caused by viruses and protozoa.

- | | |
|---|---------------------------|
| <u>Viruses</u> | <u>Protozoa</u> |
| (i) He pneumonia | (i) malaria |
| (ii) plague - Bacterium | (ii) <u>yellow fever</u> |
| (iii) Tetanus | (iii) <u>Chickengonia</u> |
| (iv) Swine <u>flu</u> etc
Swine | (iv) <u>Cholera</u> |
- (Write above this line only)

23. पलायन वेग
Escape velocity

The minimum velocity that is required for an object to escape planet's gravitational force

For earth this is 11.2 km/sec

It is deciding factor for presence of atmosphere

(Write above this line only)

24. क्लासिकल कम्प्यूटर व क्वांटम कम्प्यूटर में मूलभूत अन्तर लिखिए।

Write the fundamental differences between classical computer and quantum computer.

Classical Computer	Quantum Computer
(i) Works on bit 0 and 1 at one time either it will represent 0 or 1 (ON/OFF)	(i) <u>qubit 0 and 1</u> Can represent both <u>superposition</u>
(ii) CPU - Control unit ALU	(ii) CPU - Combination of <u>multiple qubits</u>

(Write above this line only)

25. कैश मेमोरी
Cache memory

13

Storage ?

Temporary functions or data under process are stored in cache memory. Speed is more than secondary memory. Stored data are temporary.

Two type: RAM - with turnoff computer data vanishes

ROM - data stored by manufacturer doesn't vanishes

(Write above this line only)

Part - B

Note: Answer the following questions in 50 words. Each question carries 5 marks.

नोट: निम्न प्रश्नों के उत्तर 50 शब्दों में दीजिए। प्रत्येक प्रश्न 5 अंक का है।

1. तम्बाकू में पाए जाने वाले एल्केलॉइड का नाम बताइये व तम्बाकू सेवन से मानव स्वास्थ्य पर पड़ने वाले दुष्प्रभावों को लिखिए।
Name the alkaloids found in tobacco and write the ill effects of tobacco consumption on human health.

In tobacco Alkaloids found are - Nicotin etc.

ill effect on human health -

other eg.

- (i) Negative impact on lung capacity due to that
- (ii) Respiration related disease like T.B and Asthma
- (iii) Nicotin adversely affects Nervous system due to that disease like insomnia
- (iv) it adversely affects consumption process
- (v) It is a type of drug that negatively affects memory, rational power and mental functioning.

(Write above this line only)

2. हाल ही में सुर्खियों में रही मेटावर्स की अवधारणा को स्पष्ट करते हुए इसके अनुप्रयोगों को लिखिए।
Explain the concept of Metaverse which was in the news recently and write its applications.

Metaverse → That gives virtual 3D effect. It is like virtual reality. A person can realise virtual elements in 3D that are not in existence.

Application - (I) In medical field - in research and development, in learning process, virtual view of surgery

(II) In education - Learning process makes easy due to 3D view

(III) In industries → Can view products that are being developed in 3D. (IV) In Agriculture (V) In Business

3D models can be represented etc

(Write above this line only)

3. 'परासरण' को परिभाषित करते हुए परासरण का महत्व बताइये।
Define 'osmosis' and explain the importance of osmosis.

Osmosis → process of purification. In this molecule from a high concentration of water moves to a low concentration of water through a semi permeable membrane

Importance - (I) purification of specific type of solutions

(II) more reliable and accurate technique

Key uses / Importance :-

(Write above this line only)

4. नैनो तकनीक अवधारणा को स्पष्ट करते हुए स्वास्थ्य के क्षेत्र में इस तकनीक के अनुप्रयोगों को लिखिए।
Explaining the concept of nanotechnology, write the applications of this technology in the field of healthcare.

When an element is formed of ^{at 10⁻⁹ m} ~~Nano~~ Scale than special characteristics appear in matter and using them in daily life problem solving is Nano-technology.

Two type - bottom up and Top to bottom

Application → (i) Nano capsule → will treat only affected part more easily than other medicines
(ii) Nano robot → useful in surgery with minimal blood loss
(iii) Bio-Nano - specific type of robots that are inserted in body. they can destroy cancer cell
(iv) more efficient diagnosis of disease etc

(Write above this line only)

5. पादपों के लिए आवश्यक वृहत् व सूक्ष्म पोषक तत्वों में मूलभूत अन्तर लिखिए।
Write the basic difference between macro and micro nutrients required by plants.

Macro nutrients	Micro nutrients
<p>1. that are necessary for effective mechanical reaction like - Nitrogen - For chlorophyll formation, essential elements absorption from soil and water</p> <p>2. others - Phosphorus, potassium</p>	<p>Micro nutrients are those which small amount is enough for plant growth and functioning like - Sulphur, Carbon, Sodium (Na), Magnesium etc.</p>
<p>For proper nutrient availability fertiliser N, P, K, NP and NPK are used.</p>	

(Write above this line only)

6. हाल ही में सुर्खियों में रहा 'राष्ट्रीय क्वांटम मिशन' पर प्रकाश डालिए।
Throw light on 'National Quantum Mission' which was in the news recently.

→ National Quantum mission → To promote quantum physics application i.e. quantum mechanics, Quantum Computing that is being seen as technology of future.

→ Quantum Computing using techniques like Superposition, Entanglement and interference can compute data of great volume with more efficiency.

→ So, increase its application in Banking, Business, Insurance, Social media, Industries etc. This mission was needed. For this - (A) proper infrastructure (B) skill development
(Write above this line only)

7. भारतीय अंतरिक्ष अनुसंधान संगठन द्वारा जारी 'भारतीय अंतरिक्ष नीति-2023' के उद्देश्यों को लिखिए।
Write the objectives of 'Indian Space Policy-2023' issued by the Indian Space Research Organisation.

Policy issued with an objective to make India a leading country in space technology. 25

Objective - (i) To make space economy of ₹ 1 lakh crore by 2025

(ii) Create 2 lakh new employment in this field

(iii) To ensure commercial presence of ISRO in this field

(iv) To facilitate private investment and promote them

(v) Under it four distinct but inter-related departments were created (A) NSIL (National space infra Ltd) - for

commercial activities (B) Space and (C) space department

(Write above this line only)

8. "आनुवांशिकी अभियांत्रिकी ने मानव प्रजनन के सन्दर्भ में नैतिक व सामाजिक मुद्दों को जन्म दिया है।" उक्त कथन के पक्ष में अपना मत प्रदान करें।
 "Genetic engineering has given rise to ethical and social issues in the context of human reproduction."
 Provide your opinion in favor of the above statement.

Genetic engineering - Gene therapy, Gene Augmentation and Gene replacement to ~~desire~~ obtain desired qualities in human.

Ethical and social issues attached with it - (i) Crisis for racial purity (ii) transfer of human gene in animal is unethical (iii) specieses obtained through this process may be weak or with an incurable disease (iv) It is against natural law (v) Can be used for unethical use (vi) Human cloning can be proved dangerous

(Write above this line only)

9. रक्त में पाई जाने वाली रक्त कोशिकाओं के नाम लिखते हुए उन पर संक्षिप्त टिप्पणी लिखिए।
 Write the names of blood cells found in blood and write short note on them.

In Human blood these type of cell are found

RBC	WBC	platelets
(Red blood cells)	(White blood cells)	
Due to their presence color of blood is red	They are immunity builders, during disease	works for clotting in blood
works of oxygen transportation	Number decreases	indeficiency - brain
in deficiency - blood cant	immunity weaken	hemorrhage and death
So - 1.20 lakh	in Normal Condition 4,000 - 11,000	1.5 to 4.5 lakh

(Write above this line only)

10. डीपफेक की अवधारणा को स्पष्ट करते हुए इसके कारण उत्पन्न होने वाली चुनौतियों को लिखिए।
Explaining the concept of deepfake, write the challenges arising due to it.

Deepfake - By combining two or more pictures or videos such environment is created that seems real

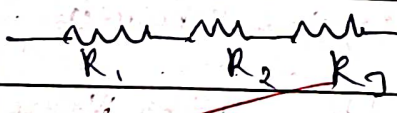
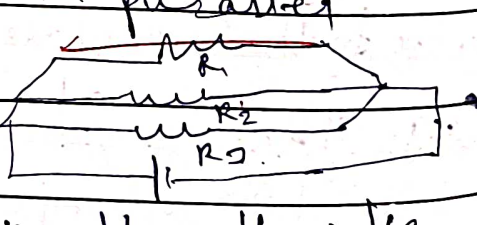
- Challenges arising due to it -
- (i) It is being used to defame anybody
 - (ii) Due to being cyber threat it is impossible to trace culprits as cyber has no boundary
 - (iii) Vulgar contents are being created that are against social harmony and are unethical
 - (iv) Conflict between communities as communalism consists
 - (v) Against human prestigious
 - (vi) Ethical degradation in society

(Write above this line only)

11. विद्युत प्रतिरोध को परिभाषित करते हुए प्रतिरोधों के संयोजन पर प्रकाश डालिए।
Define electrical resistance and throw light on the combination of resistances.

Resistance created by elements molecule in flow of electron in a circuit due to that electricity flow decreases. Unit - ohm (Ω) Symbol - R

Resistance represented by $R = \rho l/A$ ρ - Resistivity l - length A - Area

Combination	In series	In parallel
		
Resultant	$R = R_1 + R_2 + R_3$	$R = 1/R_1 + 1/R_2 + 1/R_3$
Used	Joule wire is connected in series	Voltmeter is connected in parallel

(Write above this line only)

12. स्वतः उत्प्रेरक को सोदाहरण परिभाषित करें तथा उत्प्रेरकों के सामान्य गुणों/विशेषताओं को लिखिए।
Define autocatalyst with example and write the general properties/characteristics of catalysts.

(Write above this line only)

13. कार्बन के क्रिस्टलीय अपरूपों का नाम लिखते हुए उनके अनुप्रयोगों को लिखिए।
Name the crystalline allotropes of carbon and write their applications.

Crystalline allotropes of carbon like - Diamond, graphite and fullsene etc [Application]

(i) Diamond → It is most hard substance in universe. So it is used to cut glass and rocks, used in making jewellery, decorative items etc

(ii) Graphite → (i) used in making pencil (ii) in chloride making in cell (iii) They are conductors of electricity so, making equipment (iv) in dry lubricant (soft)

(iv) Fullsene - hard, football like substance, making hard object

(Write above this line only)

Medical - 2

14. निम्न पर टिप्पणी लिखिए/Write comment on the following.

1. वनस्पति कीटनाशक/Vegetable insecticide
2. कृत्रिम मधुरक/Artificial Sweeteners

(i) vegetable insecticide → type of pesticides that are used to destroy insects that are harmful for plants like DDT - Dichloro Diphenyl Ethane and BHC - Benzene Hexachloride are used

(ii) Artificial Sweetness → used to enhance sweetness are used in a small quantity, they don't produce calories so don't increase obesity and blood glucose like (i) saccharin (ii) Aspartame (iii) Alitima and (iv) sucralose etc

(Write above this line only)

15. 'भारत 6जी मिशन' के उद्देश्य लिखते हुए इसके समक्ष आने वाली चुनौतियों को लिखिए।
While writing the objectives of 'India 6G Mission', write the challenges facing it.

Key objective 2

India 6G Mission → To lead India in high data speed access and ensure high speed internet availability to all

Challenges → (i) For 6G implementation high infrastructure requirement (ii) Budget burden

(iii) In increasing competency of technology risk for health due to high radioactivity and radiation health threat and cancer like disease (iv) Due to being expensive out of reach for a common man

(v) Dominance of other countries in this technology

(Write above this line only)

16. गगनयान मिशन से भारत को होने वाले सम्भावित लाभों को लिखते हुए इसके समक्ष आने वाली चुनौतियाँ बताइये।
While writing down the possible benefits to India from the Gaganyaan Mission, tell the challenges faced by it.

Gaganyaan mission Under human space flight programme
a manned space flight is being developed by ISRO

Benefits (i) India's prestige will increase at global level
(ii) Increase in employment (iii) more exploration of space
(iv) Investment and economy will boost of country

Challenges (i) very expensive i.e. it is being estimated that one flight will carry 3-4 members with cost of ₹ 1000 crore
(ii) Environmental pollution (iii) space debris

(iv) India can deviate from its original objective etc.

(Write above this line only)

Training

॥ आ नो भद्राः क्रतवो यन्तु विश्वतः ॥

Part - C

Note : Answer the following questions in 100 words. Each question carries 10 marks.

नोट : निम्न प्रश्नों के उत्तर 100 शब्दों में दीजिए। प्रत्येक प्रश्न 10 अंक का है।

1. क्लाउड कम्प्यूटिंग की अवधारणा को स्पष्ट करते हुए इसकी प्रमुख विशेषताओं को बताइये तथा क्लाउड कम्प्यूटिंग के सकारात्मक व नकारात्मक पक्षों को भी उल्लेखित कीजिए।
Explain the concept of Cloud Computing and explain its main characteristics and also mention the positive and negative aspects of Cloud Computing.

write a technical definition

An cloud Computing → Access of resources, storage space, data access

on online medium using internet

i.e Computing, storage of data all

activities can be performed globally

like in India → meghraj, kisan portal etc



positive aspects

Negative aspects

- | | |
|---|--|
| (I) Using cloud Computing management of resources and computation can be done on digital medium | (I) Due to storage of centralized, it takes more time in retrieval and |
| (II) No requirement of physical hardware, less cost | (II) New technology like EDHE are proving more beneficial |
| (III) Can be accessed from anywhere so no localization | (III) Risk of privacy breach |
| (IV) Helpful in e-governance like - digilocker, kisan sahitya portal, my-gov. etc | (IV) Risk of cyber fraud |
| | (V) Not universal accessible etc |

(Write above this line only)

10

Conclusion - ?

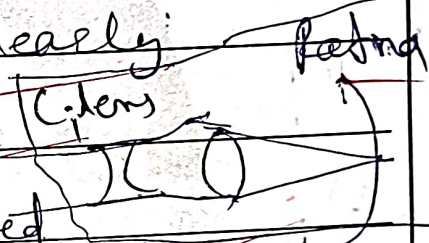
मानव नेत्र के प्रमुख दोषों पर सविस्तार लेख लिखिए।

Write a detailed article on the major defects of the human eye.

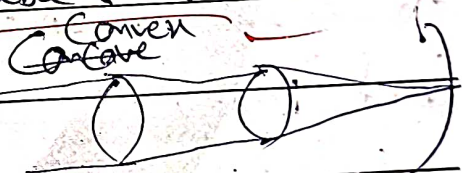
Human eye that ~~works~~ uses Concave lens due to that image of an object occurs on retina due to defect in lens or supression of retina many defects are occurs that are cured using lenses or surgery

Major defects (i) Near sight error - In this defect

person can't see object far objects clearly because image occurs before retina for treatment - Concave lens is used



(ii) Far sight error - Human is unable to see at near objects. To resolve this problem Convex lens is used



(iii) Cataract → Due to lack of protein or Calcium storage on lens, its flexibility reduces and person's sightness hampers for treatment new lens is replaced by surgery

(iv) Catarcoma - Called also Black water disease. Due to pressure of aquous water in eye on lens or due to B.P. this defects occurs (v) Presbyopia - In this defects both far sightness and near sightness hampers to resolve this → Cylindrical lens is used

(Write above this line only)

Bifocal lens

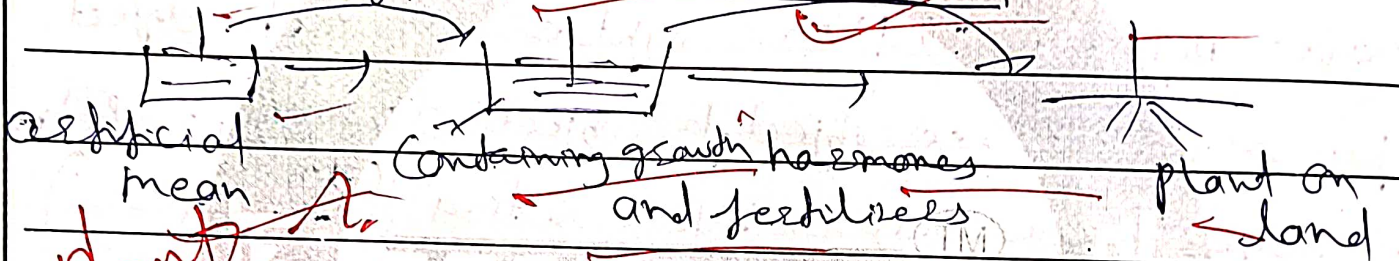
Layering
Wider Culture

3. पौधों के उत्पादन के लिए प्रयुक्त 'कृत्रिम कायिक प्रवर्धन' की विधियों पर टिप्पणी लिखिए।

Write note on the methods of 'artificial vegetative propagation' used for the production of plants.

Artificial vegetative propagation → is method of asexual production in plants. In this following methods are used

(i) vegetative production → stem leaf are used for production. for this tissue culture is used



(ii) Budding :- This process takes place in yeast. In yeast bubble like structure which is called bud matures and break itself from main source to make other bud.

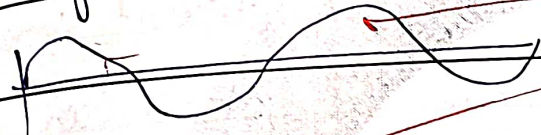

(iii) Fermentation :- This takes place in Algae. In presence of water and Nutrient Algae develops and ferments itself and makes algaes

(iv) Sporulation → This takes place in Fungus. Fungus develops in porous like in bread porous in presence of humidity. after these all are artificial vegetative methods where sexual production doesn't take place.

(Write above this line only)

निम्न पर टिप्पणी लिखिए/Write comment on the following.

1. एनालॉग सिग्नल व डिजिटल सिग्नल में अंतर/Difference between analog signal and digital signal
2. कृत्रिम बुद्धिमत्ता के खतरें या सीमाएँ/Dangers or limitations of artificial intelligence

Analog Signal	Digital signal
(i) In this Continuous formation (i) is found	No Continuity. It will be either 1 or zero.
(ii) represented by sign waves	(ii) square waves
	
(iii) more energy consumption	(iii) less energy consumption
(iv) less efficiency	(iv) more efficiency
(v) impact of noise	(v) No impact
(vi) Easy in use	(vi) Complex technique

(2) AI → To make machines as intelligent as human and to perform like human.

- Limitation →
- (i) Loss of employment
 - (ii) Safety concern as human vs machine
 - (iii) Ethical concern if a machine perform human activities
 - (iv) Concern of hacking that may be harmful
 - (v) may be prove dangerous if it is in wrong hands
 - (vi) Difficult to interpret. For that Digital knowledge is required etc

(Write above this line only)

Acids
1 - HCl
2 - H_2SO_4

Uses
Siddhi-II - 006

Base

Salts

5. दैनिक जीवन में अम्ल, क्षार व लवण की उपयोगिता पर लेख लिखिए।
Write article on the utility of acid, base and salt in daily life.

Human body metabolism, psychological process and many activities around us are based on acid, base or combination like

[Acid] → (i) human body works between pH 7 to 7.8
(ii) tooth pain is pH is 6.2, if we eat sugar or other food whose pH is less than 5.5 than can cause cavity (iii) Due to excess of acid in milk microorganism creates Acetic acid gas that $Mg(OH)_2$ is mixed (iv) To reduce acidity of stomach - milk of magnesia $Mg(OH)_2$ and $NaHCO_3$ is used (v)

[Base] → (i) In toothpaste base is found that maintains pH of mouth (ii) To reduce Acid in soil lime is used (iii) To reduce pain due to sting of bee or ant Baking soda $NaHCO_3$ is rubbed (iv) To reduce acid in factories waste water and rain water base is used etc

[Salt] → When a Acid and Base reacts salt and water creates like $CH_3COOH + NaOH \rightarrow CH_3COONa + H_2O$
(i) It is used in Buffers making like Acid buffer and base buffer (ii) Base of mouth psychological activities

निम्न बिन्दुओं पर संक्षिप्त टिप्पणी लिखिए/Write short notes on the following.

1. श्वसन व किण्वन की प्रक्रिया में मूलभूत अन्तर लिखिए/Write the basic differences between the processes of respiration and fermentation.
2. सोनिक बूम/Sonic Boom

Respiration

Fermentation

- | | |
|--|---|
| <p>(i) It takes place in presence of oxygen</p> <p>(ii) Outer respiration takes place like human body</p> <p>(iii) in yeast.</p> | <p>(i) It takes place in absence of oxygen</p> <p>(ii) Internal respiration takes place</p> |
|--|---|

5-6 differences

भद्रः कर्तव्यं सर्वं विश्वतः

7. निम्न बिन्दुओं पर संक्षिप्त टिप्पणी लिखिए/Write short notes on the following.

1. प्रोजेक्ट-75/Project-75
2. रोबोट के घटक/Components of Robot
3. लैग्रेंज पॉइंट/Lagrange point

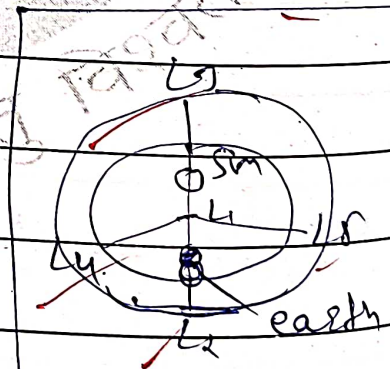
(15)

(1) Project-75 → Under this far distance sector Submarine are being developed. Till now New Submarine has been developed like - Bela, Sarvai, Sagar etc

(2) Component of Robot

(i) Human interference - Through this point human make robot to understand its command (ii) Interpretation - human commands are interpreted (iii) Storage - of data and commands (iv) power connection (v) power storage - to work for long time etc.

(3) Lagrange point - A point between sun and earth on axis where if a satellite is placed that will remain in balance as these gravitational force of both i.e. sun and earth is Neutralize zero



At this point that satellite will consume less power. Ardra - solar mission will be put up at this point. It is 1.5 million km distanced from sun.

हिन्दी व्याकरण- शब्द शुद्धि-वाक्य शुद्धि व प्रारूप-लेखन निविदा

1. दिए गए शब्दों के शुद्ध रूप लिखिए-

(i) अनेकों

एक

4

अंक - 5

(ii) गरिष्ठ

गरिष्ठ

(iii) दंपती

दंपती

(iv) श्वसूर

श्वसुर

(v) संपत्ति

संपत्ती

2. निम्नांकित वाक्यों को शुद्ध कीजिए-

(i) हमारे प्रांत के मनुष्य मेहनती हैं।

हमारे प्रांत के मनुष्य मेहनती हैं।

4

अंक - 5

(ii) दंगे में गोलियों की बाढ़ आ गई।

दंगे में गोलियों की बाढ़ आ गई।

(iii) मुझे बहुत पुस्तकों को पढ़ना पड़ता है।

~~मुझे बहुत पुस्तकों को पढ़ना पड़ता है।~~

(iv) यह पौधा जब प्रधानमंत्री जयपुर आए थे, तब लगाया गया था।

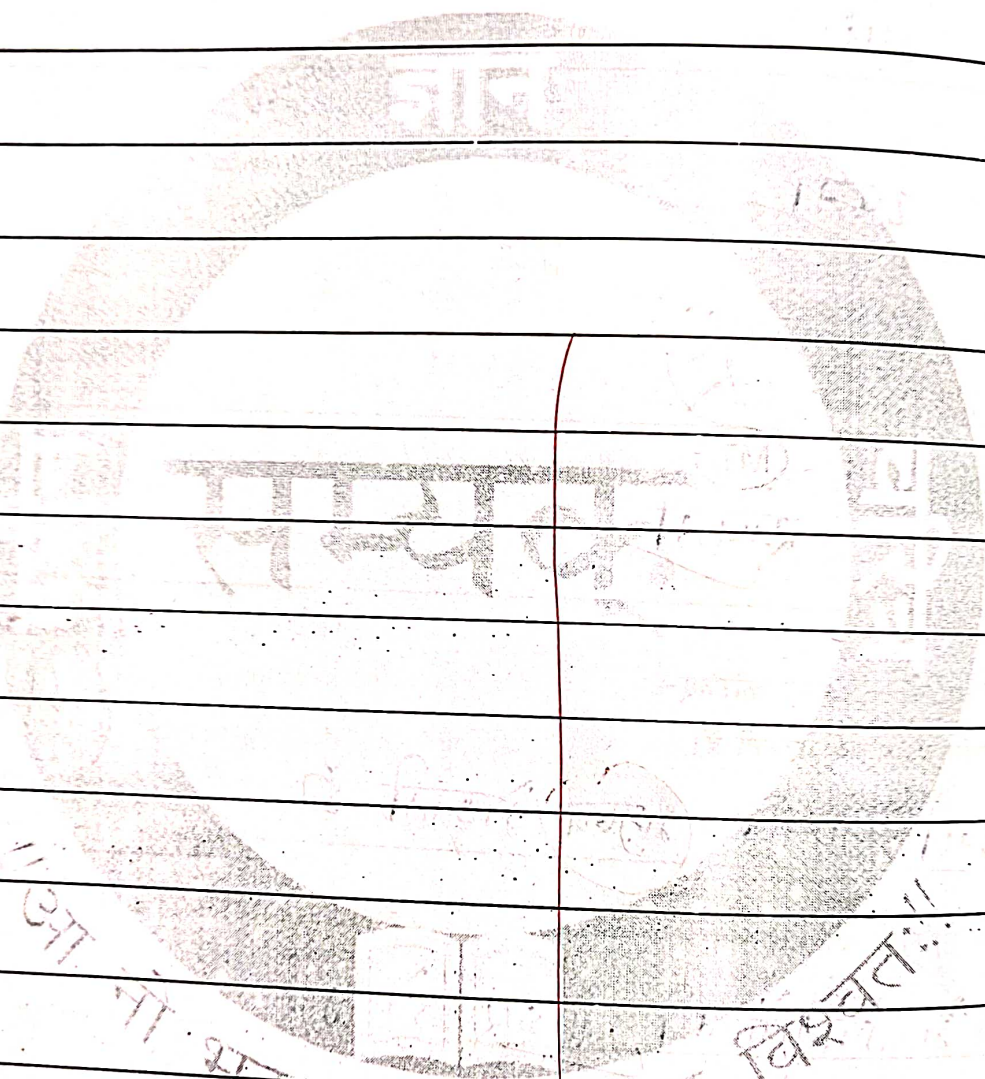
~~यह पौधा तब लगाया गया था, जब प्रधानमंत्री जयपुर आए थे।~~

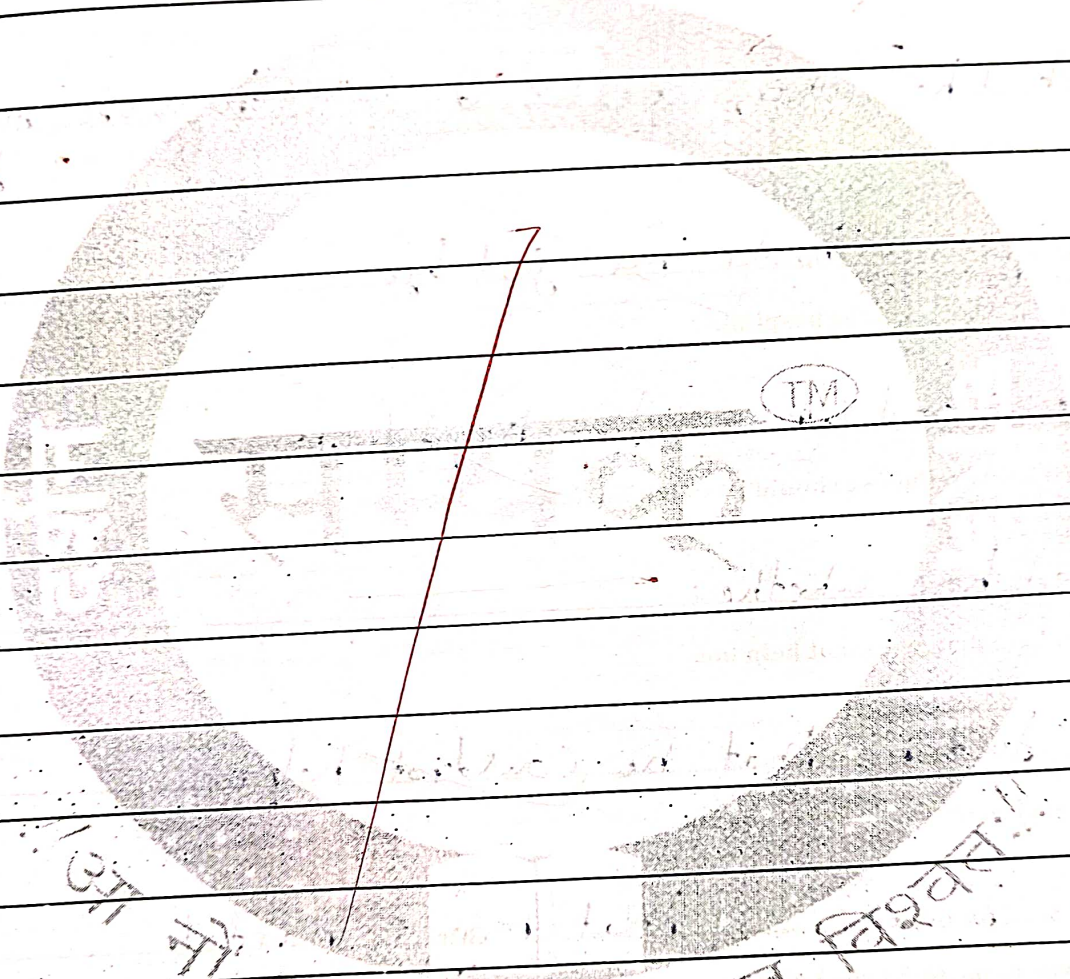
(v) आजकल जनता के अंदर बहुत असंतोष है।

~~आजकल जनता में बहुत असंतोष है।~~

3. जिला कलेक्टर जयपुर की ओर से कार्यालयी आवश्यकता हेतु फर्नीचर (मेज/कुर्सी) आपूर्ति हेतु खुली निविदा का प्रारूप तैयार कीजिए।

अंक- 10





सत्यमेव जयते
भद्राः कर्तव्यो यन्तु विश्वतः

Narration-Direct & Indirect and Elaboration of a given theme

(A) Identify the error and rewrite the correct form of the following sentences: (Q. No. 1-10)

1. I told him I will go the following week.

I told him ~~that~~ I ~~would go~~ the following week

2. He asked her who she would like to invite to dinner that night.

He asked her ~~whom~~ ^{to} she would like to invite to dinner that night

3. My friend bade to me good-bye.

My friend bade me good bye

4. She asked where was the hospital.

She asked where the hospital was

5. I asked her whether we should go to the cinema.

I asked her whether

6. He told me that he cannot help me.

He told me that he ~~could not~~ help me

7. The teach said that man was mortal.

The teacher said that man is mortal

8. He tells to me that I can help him.

He ~~tells to me~~ ^{says} that

9. The old lady wished that I may live long.

The old lady wished that I might live long

10. He said that that all was he had.

He said that all he was had

Marks

15

Elaborate any one of the following themes in approximately 150 Words.

Marks 10

- (B)
- I. SWEET ARE THE USES OF ADVERSITY
 - II. GOD HELPS THOSE WHO HELP THEMSELVES
 - III. THE CHILD IS THE FATHER OF THE MAN

(II) God helps those who help themselves

A person who works and don't rely on fate even it is said that only continuous efforts can come may get succeed. Even god also help those people who works. To work and work should be human nature. For this former president and great scientist A.P.J. Abdul Kalam has also stated that "A person who waits for good time and relies upon fate he get only that part which has been left by laboured persons". So, there may be no alter native of hard work. Hard work always pay today as other day. According to social reformer A Swami Vivekanand "we are responsible for our fate".

So a person should work in all
circumstances. If circumstances are adverse
that can be in favour only through hard
work.

कर्मणो यत्फलं कर्तव्यं यत्तु विश्रुतम्