	LTH	E BES		KEY ANSWER			
SRS	all II P	J students	BI	OLOGY			
ಎಸ್.ಆರ್.ಎಸ್ ಪದವಿ ಪೂವ ಹೊಸಪೇಟೆ ರಸ್ತೆ, ಚಿತ್ರದುಗ		18-March -2023					
Sub Code : 36		BIOLOGY		Max Marks : 70			
Time : 3 Hrs 15 Min				No. of Questions : 47			
		<u>PART –A</u>					
		from the choices give	en below	$15 \times 1 = 15$			
1. (A) Gametogenesi	S						
2. (C) Sporopollenin							
3. (C)Fifth Month	-1 -						
	4. (D) Stigma and style						
5. (C) Genital herpes							
· / · · · ·	6. (B) Lippes Loop7. (D) Walter Sutton & Theodore Boveri						
8. (D) RNA			(\land)				
9. (B) Lichens							
10. (B) Aedes Mosquitoes							
11. (A) Wheat							
12. (A) Wine							
13. (B) Biolistics							
14. (B) Disarmed retrovirus							
15. (D) Shorter ears and shorter limbs							
II. Fill in the blanks by choosing appropriate word from those given below. $5 \times 1 = 5$							
16. Single Base pair of	of DNA						
17. Gause's Competitive exclusion principle							
18. Standing State							
19. Atmosphere							
20. Food Web							
$\underline{PART - B}$							
III. Answer any FIVE of the Following Questions in 3 – 5 sentences each wherever							
applicable:				$5 \times 2 = 10$			

The animals which possess both male and female reproductive organs in the same body.
 E.g., Tapeworm, earthworm, leech, sponges etc.,

22.

MENSTRUAL CYCLE	OESTRUS CYCLE	
The cyclical changes in the activities of ovaries	The cyclical changes in the activities of ovaries	
and accessory ducts as well as hormones during	and accessory ducts as well as hormones during the	
the reproductive phase of primate mammals is	reproductive phase of non-primate mammals is	
called Menstrual cycle.	called Oestrus cycle	
Females do not show irresistible sexual urge.	Females show strong irresistible sexual urge.	

- Small round head
- Furrowed tongue
- Partially Open mouth
- Palm is broad with Palmar simian crease
- Physical and psychomotor and mental development is retarded

24.

Phenotype (Blood type)	Genotype	
Type A	I ^A I ^A or I ^A i	
Туре В	I ^B I ^B or I ^B i	
Type AB	I ^A I ^B	
Туре О	П	

25. Lysine and Arginine

26.

Geitonogamy: It is the transfer of pollen grains from anther of one flower to the stigma of another flower of the same plant. (Pollination between the flowers of same plant). **Xenogamy**: The transfer of pollen grains from anther of one flower to the stigma of another flower of a different plant. It results in genetic recombination.

27. Development of resistant varieties in organisms against | herbicides, pesticides, antibiotics or drugs etc. These are the examples for natural selection by anthropogenic action (evolution due to human activities).

28.

- CNG burns most efficiently than diesel and petrol
- It is cheaper than diesel and petrol
- It cannot be siphoned off by thieves
- It cannot be adulterated like diesel and petrol

PART – C

- IV. Answer any FIVE of the following questions in about 40 80 words each wherever applicable $5 \times 3 = 15$
 - 29. a) Oxytocin acts on the uterine muscle and causes stronger uterine contractions,
 - b) Human chorionic gonadotropin(hCG), human placental lactogen(hPL), estrogens, progestogens
 - **30.** Infertility refers to the inability of the couple to produce children in spite of unprotected sexual cohabitation.

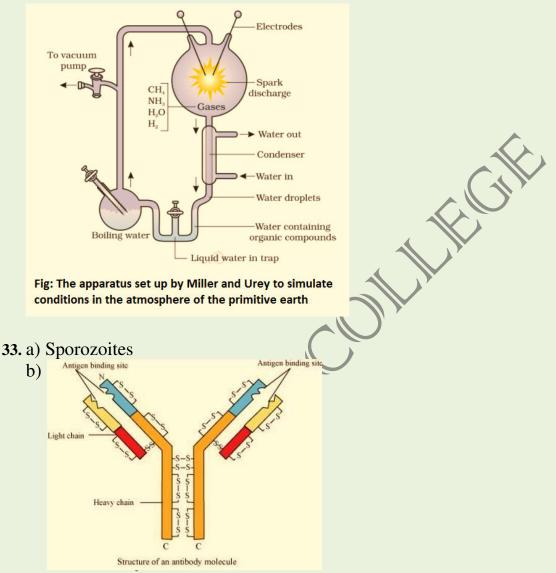
Reasons for infertility among young couples are;

- Physical aspects
- Congenital disease
- Use of certain drugs
- Immunological and psychological aspects

31. (Any Three)

- It is used to identify the criminals connected with murder and rape (Forensic investigations)
- It is used to solve the disputed parentage and relationships i.e., paternity or maternity testing
- To find out variations in individuals of a population at DNA level.
- It has immense applications in the field of forensic science, genetic biodiversity
- It is used to identify the victims of natural disasters like plane crash, building collapse, floods, earthquakes, fire accident, etc.





- **34.** Poultry is the class of domesticated fowl (birds) used for food or for their eggs.
 - Important components of poultry farm management.
 - selection of disease free and suitable breeds
 - proper and safe farm conditions
 - proper feed and water
 - hygiene and health care

35. "The gradual and fairly predictable change in the species composition of a given area is called ecological succession".

S.No	Primary succession	Secondary succession	
1	The succession that occurs for the first time	The succession that occurs in the areas which	
	in an area where the living organisms ever	have lost all the living organisms that existed	
	existed	there	
2	The establishment of a new biotic	The establishment of a new biotic community is	
	community is generally slow	generally faster	
	Newly cooled lava, bare rock, newly created	Abandoned farm lands, burnt or cut forests,	
E.g.,	pond or reservoir.	lands that have been flooded	

36. a) Evil quartets are

- Habitat loss and fragmentation
- Over-exploitation
- Alien species invasions
- Co-extinctions
 - b) Fishes

PART - D

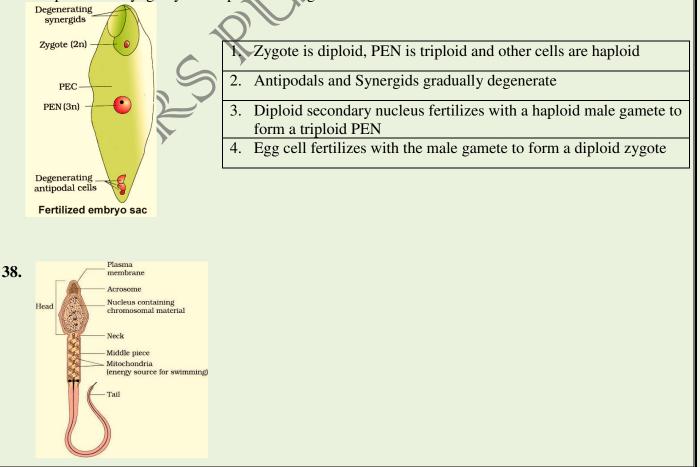
TIL

V. Answer any THREE of the following questions in about 200 - 250 words each wherever applicable: $3 \times 5 = 15$

37. One haploid male gamete fertilizes with the haploid egg cell to form a diploid zygote. This process is called syngamy.

The other haploid male gamete fertilizes with the diploid secondary nucleus of central cell to form a triploid primary endosperm cell. This process is called triple fusion

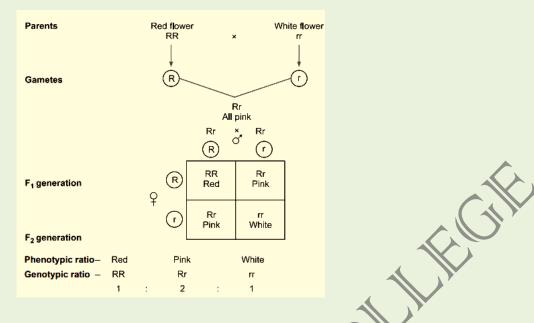
The process of syngamy and triple fusion together constitutes double fertilization



39. The phenomenon in which F_1 generation individuals attain inbetween characters of both the parents. The incomplete dominance was observed by Carl Correns of Germany during hybridization

experiments in *Antirrhinum majus* (Snapdragon). He crossed pure breeding red flowering plants (RR) with pure breeding white flowering plants (rr)

and obtained all heterozygous pink flowering plants (Rr) in F_1 generation. Then he self pollinated the F_1 pink flowering plants obtained the plants in the phenotypic and genotypic ratio of 1:2:1 in F_2 generation as follows.



40.

1. Normal physiology and development :

Transgenic animals can be specifically designed to allow the study of how genes are regulated, and how they affect the normal functions of the body and its development, e.g. study of complex factors involved in growth such as insulin – like growth factor

- 2. **Study of diseases:** Transgenic animal models are used to understand the contribution of genes in the development of disease and to investigate new treatments for diseases like fibrosis, rheumatoid arthritis, Alzheimer's etc
- Biological products: Transgenic were created to produce milk containing particular human proteins, (α 1- antitrypsin) which may help in the treatment of human emphysema.
 E.g., Rosie is the first transgenic cow (1997) that produced the milk enriched with human protein, α –lactalbumin (2.4g per ltr) which is nutrition-ally more balanced product for human babies than natural cow milk.
- 4. Vaccine safety: Transgenic animals are exposed to toxic substances to study their effects in less time
- 5. Chemical safety testing:

The procedure is the same as that used for testing toxicity of drugs. Transgenic animals are made that carry genes which make them more sensitive to toxic substances than non –transgenic animals

- 41. a) Amoebiasis OR Amoebic dysentery
 - b) Ringworm
 - c) Typhoid
 - d) Filariasis OR Elephantiasis
 - e) Malaria

42. Multiple Ovulation and Embryo Transfer(MOET) Technology

- In MOET, a cow is administered hormones with FSH-like activity, to induce follicular maturation and super ovulation to produce 6-8 eggs.
- Then the cow is either mated with elite bull or artificially inseminated
- The fertilized eggs at 8 32 cells stages, are recovered non-surgically and transferred to surrogate mothers
- The genetic mother is available for another round of super ovulation
- This technology has been demonstrated for cattle, sheep, rabbits, buffaloes, mares, etc
- High milk-yielding breeds of females and high quality (lean meat with less lipid) meat-yielding bulls have been bread successfully to increase herd size in a short time

VI. Answer any TWO of the following questions in about 200 - 250 words each wherever applicable: $2 \times 5 = 10$

43. Microbes are used in the large scale production of alcoholic beverages, antibiotics, chemical, enzymes and other bioactive molecules.

Fermented Beverages:

Brewer's yeast (Saccharomyces cervisiae) is used for the production of alcoholic beverages like;

Beer & Wine

Distilled beverages:

Whisky, Rum, Brandy

ANTIBIOTICS

• Penicillin – Penicillium notatum.

CHEMICALS

The organic acids like;

- Citric acid Aspergillus niger
- Acetic acid Acetobacter aciti
- Butyric acid Clostridium butyricum
- Lactic acid Lactobacillus
- Yeast Saccharomices cerevisiae is used produce ethanol

ENZYMES

- Lipases used in detergent formulations for removing oily stains from laundry
- **Proteases** –used as clearing agents
- Pectinases Along with proteases used in clearing fruit juices
- Streptokinase Streptococcus sp. Modified genetically to function as clot buster

BIOACTIVE MOLECULES:

- **Cyclosporin** A: Trichoderma polysporum, used as an immunosuppressive agent in organ transplant patients
- Statins: Monascus purpureus. Used as blood cholesterol lowering agents

44.

(a) Enzymes (Restriction enzyme, DNA ligases, polymerase enzymes), Vector DNA, Host organisms, Bioreactors

- (**b**) (i) Micro injection
 - (ii) Biolistics/ Gene gun
 - (iii)Disarmed pathogens

(c) The **Ethidium bromide** is used to stain DNA fragments to view separated DNA bands when exposed to UV light.

45. Griffith's Transforming Principle experiment (1928)

Frederick Griffith used mice & Streptococcus pneumoniae. Streptococcus pneumoniae has 2 strains:

- **Smooth (S) strain (Virulent):** Has polysaccharide mucus coat. Cause pneumonia.
- **Rough (R) strain (Non-virulent):** No mucus coat. Do not cause Pneumonia.

Experiment:

- S-strain \rightarrow Inject into mice \rightarrow Mice die
- R-strain \rightarrow Inject into mice \rightarrow Mice live
- S-strain (Heat killed) \rightarrow Inject into mice \rightarrow Mice live
- S-strain (Hk) + R-strain (live) \rightarrow Inject into mice \rightarrow Mice die

He concluded that some **'transforming principle'** transferred from heat-killed S-strain to R-strain. It enabled Rstrain to synthesize smooth polysaccharide coat and become virulent. This must be due to the transfer of genetic material.

46. (a) The body compensates low oxygen availability by;

- i. Increasing red blood cell production (erythropoiesis)
- ii. Decreasing the binding capacity of haemoglobin
- iii. By increasing breathing rate.

(b)

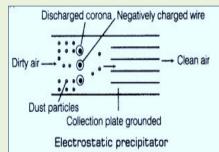
- (i) Dormancy
- (ii) Hibernation (winter sleep)
- (iii) Aestivation (Summer sleep)
- (iv) Diapause
- (v) Sporulation

(c) Competition

(c) Competition

47.

- The electrostatic precipitator can remove over 99 per cent particulate matter present in the exhaust from a thermal power plant
- It has electrode wires that are maintained at several thousand volts, which produce a corona that releases electrons
- These electrons attach to dust particles giving them a net negative charge
- The collecting plates (positively charged) are grounded and attract the charged dust particles The velocity of air between the plates must be low enough to allow the dust to fall.



GIF





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ವೈದ್ಯಕೀಯ ವಿದ್ಯಾಭ್ಯಾಸ ಆಕಾಂಕ್ಷಿಗಳಿಗೊಂದು ಸುವರ್ಣಾವಕಾಶ ಎಸ್ಆರ್ಎಸ್ ಮೆಡಿಕಲ್ ಗ್ಯಾರಂಟಿ ಸ್ಮೀತ

🔳 ವಿಜಯವಾಣಿ ಸುದ್ಧಿಜಾಲ ಚಿತ್ರದುರ್ಗ ನೀಟ್, ಮೆಡಿಕಲ್, ಜಿಇಇ ಹಾಗೂ හසස් ಕೋಚಿಂಗ್ ನಲ್ಲಿ ಈಗಾಗಲೇ ಪರಿಣಿತಿ ಸಾಧಿಸಿ, ರ್ಯಾಂಕ್ ಗಳೊಂದಿಗೆ ಮಟ್ಟದಲ್ಲಿ ರಾಷ್ಟ್ರೀಯ ಉತ್ತಮ ಫಲಿತಾಂಶವನ್ನು ಪಡೆಯುತ್ತಿರುವ ಎಸ್ಆರ್ಎಸ್ ಪಿಯು ಕಾಲೇಜು ಇನ್ನೊಂದು ಹೆಜ್ಜೆಯನ್ನು ಮಂದಿಟ್ಟಿದೆ. ನೂತನ ಶೈಕ್ಷಣಿಕ ವರ್ಷದಿಂದ ನೀಟ್, ಮೆಡಿಕಲ್ ನೀಟ್ ಗ್ಯಾರಂಟಿ ಯೋಜನೆಯನ್ನು ಜಾರಿಗೆ ತಂದಿದೆ.

ಮೆಡಿಕಲ್ ನೀಟ್ ಗ್ಯಾರಂಟಿ ಈ ಯೋಜನೆಯಡಿ ದಾಖಲಾದ ಪ್ರತಿಯೊಬ್ಬರಿಗೆ ವೈದ್ಯಕೀಯ ಸೀಟ್ನಲ್ಲಿ ಪ್ರತಿಶತ ಶೇ.ನೂರು

ಗ್ಯಾರಂಟಿ ನೀಡಲಾಗುವುದು. ಮೆಡಿಕಲ್-ಸ್ಟಾರ್ ಬ್ಯಾಚ್ ಇದಾಗಿದ್ದು, ಇದರ ಶೇ.ನೂರಕ್ಕೆ ನೂರು ಯಶಸ್ಸಿಗಾಗಿ ನೀಟ್ ತರಬೇತಿ ಕ್ಷೇತ್ರದಲ್ಲಿ ಆಪಾರ ಅನುಭವ ಹೊಂದಿರುವ ವಿಷಯ ತಜ್ಞರನ್ನು ನೇಮಿಸಲಾಗಿದೆ.

ಹೈದರಾಬಾದ್, ವಿಶಾಖಪಟ್ಟಣ, ಕೋಟದಂಥ ಸುಪ್ರಸಿದ್ದ ತರಬೇತಿ ಕೇಂದ್ರಗಳಲ್ಲಿ ಕೆಲಸ ಮಾಡಿ ಅಪಾರ ಅನುಭವ ಹೊಂದಿರುವ ವಿಷಯ ತಜ್ಞರು ಮೆಡಿಕಲ್-ಸ್ಟಾರ್ ಬ್ಯಾಚ್ ಉಸ್ತುವಾರಿ ಹಾಗೂ ಮಾರ್ಗದರ್ಶಕರಾಗಿರುತ್ತಾರೆ. ವೃತ್ತಿ ಪರ ಹಾಗೂ ಅನುಭವಿ ವಿಷಯ ತಜ್ಞರೊಂದಿಗೆ ನೀಟ್,

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ಜೆಇಇ, ಸಿಇಟಿಯಲ್ಲಿ ಉತ್ತಮ ಫಲಿತಾಂಶಗಳಿಸುತ್ತಾ ಬರುತ್ತಿರುವ ನಮ್ಮ ಈ ಎಸ್ಆರ್ಎಸ್ ಪಿಯು

ಕಾಲೇಜು ರಾ ಷ್ಟಮಟ್ಟದ ಸ್ಪರ್ಧಾತ್ಮ ಕ ಪರೀಕ್ಷೆ ನೀಟ್–ಮೆಡಿಕಲ್ನಲಿ ಇತಿಹಾಸ ಹೊಸ ಬರೆಯಲು ಮುಂದಾಗಿದೆ. ಈ ನಿಟ್ಟಿನಲ್ಲಿ ಕಾಲೇಜು ಆಡಳಿತ ಮಂಡಳಿ ನಿರ್ಧಾರ ಮಹತ್ತದ್ದಾಗಿದೆ.

ಮೆಡಿಕಲ್-ಸ್ಟಾರ್ ಬ್ಯಾಚ್ನಲ್ಲಿದ್ದೂ ಸೀಟ್ಗಳಿಸಲಾಗದಿದ್ದಲ್ಲಿ ಮೆಡಿಕಲ್ ಅಂಥ ವಿದ್ಯಾರ್ಥಿಯ ಎರಡು ವರ್ಷಗಳ ಶುಲ್ಕವನ್ನು ಮರಳಿಸುವ ನಿರ್ಧಾರ ಮೆಡಿಕಲ್ ಕೋಚಿಂಗ್ ವ್ಯವಸ್ಥೆಯಲ್ಲಿ

ಐತಿಹಾಸಿಕವಾಗಿದೆ. ಇನ್ನು ಮುಂದೆ ಚಿತ್ರದುರ್ಗ ಹಾಗೂ ರಾಜ್ಯದ ಇತರೆ ಜಿಲ್ಲೆಗಳು ವಿದ್ಯಾರ್ಥಿಗಳು ಪ್ರತಿಷ್ಠಿತ ವೈದ್ಯ ಕೀಯ ಕಾಲೇಜುಗಳಲ್ಲಿ ಪ್ರವೇಶ ಪಡೆಯಬೇಕೆಂಬ ಆಕಾಂಕ್ಷಿಗಳಿಗೆ ಅವರ ಪಾಲಕರಿಗೆ ಇದೊಂದು ಸುವರ್ಣಾವಕಾಶವಾಗಿದೆ.

ಸಂಸ್ಥೆಯ ನಿರ್ಧಾರ ಪ್ರತಿಷ್ಠಿತ ಎಸ್ಆರ್ಎಸ್ ಸಮೂಹ ಶಿಕ್ಷಣ ಸಂಸ್ಥೆಗಳ ಅಧ್ಯಕ್ಷ ಬಿ.ಎ.ಲಿಂಗಾರೆಡ್ಡಿ ಅವರು ಚಿತ್ರದುರ್ಗ ಶೈಕ್ಷಣಿಕ ಸಾಧನೆ ಚಿತ್ರಣವನ್ನೇ ಬದಲಾಯಿಸುವ ಐತಿಹಾಸಿಕ ನಿರ್ಣವನ್ನು ಕೈಗೊಂಡಂತಾಗಿದೆ. ಮಾಹಿತಿಗೆ 9591453336, 9900000811ನ್ನು ಸಂಪರ್ಕಿಸ ಬಹುದು.