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PRACTICE PAPER

Tim	e allowed: 45 minutes		Maximum Marks: 200								
Gen	e ral Instructions: Same as Pr	actice Paper–1.			(
Cho	ose the correct option:										
1.	Appearance of vegetative p because	ropagules from the n	odes of plants such as sugarcane and ginger is mai								
	(a) nodes are shorter than in	ternodes.	(b)	nodes have meristematic cells.							
	(c) nodes are located near th	e soil.	(<i>d</i>)	nodes have non-photosynthetic cells.							
2.	Large, colourful and nectar	ious flowers are adapta	tions	for							
	(a) anemophily			entomophily							
	(c) zoophily		(<i>d</i>)	hydrophily							
3. Artificial removal of is called emasculation in case of plants.											
	(a) placenta		(b)	stigma							
	(c) anthers		(d)	style							
4.	The typical matured embry	o sac of a flowering pla	nt is								
	(a) 7 celled, 8 nucleated		(b)	8 celled, 7 nucleated							
	(c) 7 celled, 7 nucleated		(d)	8 celled, 8 nucleated							
5.	Which of the following state (<i>a</i>) Vegetative cell is smaller		getati	ve cell in a pollen?							
	(b) It has abundant food res	erve.									
	(c) It is spindle shaped.										
	(d) It has a small circular nucleus.										
6.	Hormones produced only d	uring pregnancy is/ar	e:								
	(a) human chorionic gonado	tropin	(b)	human placental lactogen							
	(c) relaxin		(d)	all of these							
7.	Match the number of chron	osomes in column I w	ith th	e cells of human female in column II.							
	Column I	Column II									
	1.46	A. Secondary oocyte									
	2.23	B. Primary oocyte									
	3.46	C. Follicles									

(a) 1—C, 2—B, 3—A	(b) 1—C, 2—A, 3—B
(c) 1—A, 2—C, 3—B	(d) 1—B, 2—C, 3—A

8.	is the outermost layer of a blastocyst.									
	(a) Ectoderm	(b) Mesoderm								
	(c) Trophoblast	(d) Endoderm								
9.	Choose the incorrect statement.									
	(a) Sertoli cells nourish the germ cells in the testes.									
	(b) The finger-like projection, fimbriae, help	in the collection of ovum into the fallopian tube.								
	(c) Leydig cells are a source of androgen.									
	(d) Morula is the developmental stage between	en the blastocyst and gastrula.								
10.	Match the items of column I with suitable i	tems of column II.								
	Column I	Column II								
	A. Barrier method	(i) Condoms								
	B. IUD	(ii) Multiload 375								
	C. Surgical technique	(iii) Tubectomy								
	D. Hormone administration	(iv) Implants								
	(a) A—(i), B—(ii), C—(iv), D—(iii)	(b) A—(i), B—(ii), C—(iii), D—(iv)								
	(c) A—(i), B—(iv), C—(ii), D—(iii)	(d) None of these								
11.	In biparental reproduction, the offspring (<i>a</i>) differs from both the parents									
	(b) shows no change from the maternal parent									
	$\left(c\right)$ shows no change from the paternal parent	nt								
	(d) shows mixtures of characters from both parents									
12.	In a cross YYRr × YyRR, the offspring will show the genotypic ratio									
	(a) 2 YyRR : 2 YYRR	(b) 1 YYRR : 3 YyRR								
	(c) 4 YYRR : 0 yyRR	(<i>d</i>) None of the above								
13.	What blood group found in offspring in a m will prove man to be heterozygous?	arriage between blood group A man and blood group AB woman								
	(a) Blood group A	(b) Blood group B								
	(c) Blood group AB	(d) Blood group O								
14.	Klinefelter's syndrome is due to									
	(a) 21 st trisomy	(b) additional copy of X chromosome								
	(c) monosomy of X chromosome	(d) 18 th trisomy								
15.	Son receives X-chromosome from									
	(a) father	(b) mother								
	(c) both (a) and (b)	(d) none of these								
16.	Genes are made up of									
	(a) DNA	(b) RNA								
	(c) DNA and RNA	(d) proteins								
17.	The usual method of DNA replication is									
	(a) conservative	(b) dispersive								
	(c) non-conservative	(d) semi-conservative								
18.	1 8									
	(a) a segment of DNA capable of crossing ov									
	(c) a segment of DNA	(d) a segment of chromosome								

				Biology						
19.		ONA having 75 base pairs?								
	(a) 255 Å	(b) 112.5 Å	(c) 750 Å	(d) 421 Å						
20.	The <i>m</i> RNA is formed									
	(a) in the nucleus		(b) by free ribosomes							
	$\left(c\right)$ from the ribosomes	on endoplasmic reticulum	(d) from DNA in nucleus							
21.	origin of first form of life from pre-existing non-living organic molecules. The primitive earth conditions created include									
	(a) low temperature, volcanic storms, atmosphere rich in oxygen									
	•	lcanic storms, reducing atmo								
		olcanic storms, non-reducing	•							
		olcanic storms, reducing atm	•	H ₃ , etc.						
22.		ula of Hardy—Weinberg's la								
	$(a) p^2 + pq + q^2 = 0$		(b) $p^2 + pq + q^2 = 1$							
	(c) $p^2 + pq + q^2 = \inf$	2	$(d) \ p^2 + 2pq + q^2 = 1$							
23.	-	scientists disproved sponta	- ·							
	(a) Louis Pasteur	(b) Oparin and Haldane	(c) Charles Darwin	(d) Hugo de Vries						
24.	<i>,</i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1) 0 L	()							
	(a) P. vivax	(b) Salmonella typhi	(c) Rhinovirus	(d) Haemophilus influenzae						
25.	-	g properties of acquired imm		ation?						
	(a) Diversity		(b) Memory							
	(c) Discrimination betw		(d) Specificity							
26.		s cells to different parts of th								
	(a) mobility	(b) metastasis	(c) homeostasis	(d) myosis						
27.		brates where the body attack		(d) contact in hibition						
	(a) apoptosis	(b) auto-immunity	(c) necrosis	(d) contact inhibition						
28.		Fross Domestic Product come								
	(a) industry		(b) agriculture							
	(c) export		(d) small-scale cottage industries							
29.		alleles of all the genes of a cr								
	(a) germplasm collectio	n	(b) protoplasm collection							
20	(c) herbarium	(d) somaclonal collection	1							
30.	(<i>a</i>) Intraspecific hybridi	between two species of the sa isation	0							
	(<i>a</i>) Intraspectic hybrid (<i>c</i>) Inbreeding	sation	(b) Interspecific hybridisation(d) Outcrossing							
		1	(a) Outerossing							
31.	0 1	roduce	(b) methane							
	(a) oxygen (c) hydrogen sulfide		(d) carbon dioxide							
			(a) carbon dioxide							
32.										
	(a) Bacillus thuringiensis is used to control insect pests.(b) Cheese is a product of fermentation.									
	•		control agents are in the gen	us Nucleopolyhedrozirus						
	 (c) The majority of baculoviruses used as biological control agents are in the genus <i>Nucleopolyhedrovirus</i>. (d) <i>Propionibacterium</i> produces large holes in Swiss cheese due to the process of oxidation of the dough. 									

(d) Propionibacterium produces large holes in Swiss cheese due to the process of oxidation of the dough.

Biology

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33. Suspended solids are removed in which of the following?

- (a) Primary treatment
- (c) Tertiary treatment

- (b) Secondary treatment
- (d) Both (b) and (c)

34. Which of the following is a true statement regarding DNA polymerase used in PCR? (*a*) It is used to ligate introduced DNA in recipients cells.

- (b) It serves as a selectable marker.
- (c) It is isolated from a virus.
- (d) It remains active at high temperature.

35. Match the following:

Column I	Column II	
A. Competent host	(i) Source of agarose	
B. PCR	(ii) Taq polymerase	
C. Sea weeds	(iii) Divalent cation (Ca ²⁺)	
(a) A-(i), B-(ii), C-(iii)	(b) A—(iii), B—(ii),	, C-
(c) A-(iii), B-(i), C-(ii)	(d) A—(ii), B—(i) ,C	-(/

36. Choose the correct statement.

- (a) Since DNA fragments are positively charged they move towards the anode.
- (b) The cloning vector pBR322 has four antibiotic-resistance genes.
- (c) The vector DNA and foreign DNA are cut by the same restriction endonuclease.
- (d) Agarose, the most commonly used matrix in gel electrophoresis is obtained from fungi.

37. Which gene in the *E.coli* vector pBR322 codes for the proteins involved in the replication of the plasmid? (a) ori (b) amp^R (c) tet^R (d) rop

38. Transgenic plants are the ones

- (a) generated by introducing foreign DNA into a cell and regenerating a plant from the cell
- (b) produced after protoplast fusion in artificial medium
- (c) grown in artificial medium after hybridization in the field
- (d) produced by a somatic embryo in artificial medium

39. The transgenic cow (Rosie) produced milk that (*a*) is protein enriched (*b*) is fat free

(c) contains beta-lactalbumin (d) contains alpha 1-antitrypsin

40. The new variety of rice by American company is made by

- (a) crossing tall variety with American rice. (b) crossing semi dwarf variety with Indian Basmati rice.
- (c) crossing semi dwarf variety with American rice.
- 41. The population of an insect species shows an explosive increase in number during rainy season followed by its disappearance at the end of the season. What does this show?
 - (a) S-shaped or sigmoid growth of this insect.
 - (b) The food plants mature and die at the end of the rainy season.
 - (c) Its population growth is of J-type.
 - (d) The population of its predators increases enormously.

42. Ecology is basically concerned with four levels of biological organisation. Which one of the following is correct representation?

- (a) Population, community, ecosystem, landscape
- (b) Organism, community, biome, biosphere

(d) crossing dwarf variety with American rice.

- (c) Organism, population, communities, biome
- (d) Species, ecosystem, landscape, biome

Biology

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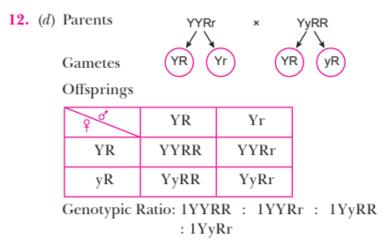
43.	Desert lizards lack the physiological ability to deal with high temperature but manage to keep their body temperature constant by									
	(a) behavioural means									
	(b) basking in sun and absorbing heat									
	(c) move into shade when ambient temperature s	tarts inc	reasing							
	(d) all of these									
44.	Which of the following is an ecosystem service provided by a natural ecosystem?									
	(a) Cycling of nutrients(b) Prevention of soil erosion									
	(c) Pollutant absorption and reduction of the three	at of al	hal warming	l.						
	(d) All of the above	at of git	boar warming	Ŀ						
45.	A succession of communities on barren land is k (<i>a</i>) secondary succession			ſ						
	(c) tertiary succession		primary succession none of these	2						
40		(a)	none of these							
46.	Niche overlap indicates		6							
	(a) mutualism between two species.	madia								
	(b) sharing of one or more resources between two	species								
	(c) cooperation between two species.									
	(d) two different parasites on same host.									
47.	are exotic species which when introduced to a new area, spreads rapidly and eliminates native species.									
	(a) Immigrant species	<i>(b)</i>	Invasive species							
	(c) Destructive species		Noble species							
48.	Choose the correct statement.									
10.		ore speci	es tend to be more stable than those with less species.							
	(<i>a</i>) Barrer Forman communication interferences with more species tend to be more stable than those with less species. (<i>b</i>) River Popper hypothesis was given by Robert May.									
	(c) The historic convention on Biological Diversity held in Rio de Janeiro in 1992 is known as CITES Convention.									
	(d) Organisation responsible for maintaining Red Data Book is WWF.									
49.										
	(a) office equipment									
	(b) transport system									
	(c) sugar, textile and paper industries									
	(d) oil refineries and thermal power plants.									
50.	Match the following and choose the correct option. Column I Column II									
	A. Environment Protection Act	<i>(i)</i>	(<i>i</i>) 1974							
	B. Air Prevention & Control of Pollution Act		1987							
	C. Water Act	(iii)	1986							
	D. Amendment of Air Act to include noise as an air pollutant		1981							
	(a) A-(<i>iii</i>), B-(<i>iv</i>), C-(<i>i</i>), D-(<i>ii</i>)	<i>(b)</i>	A-(i), B-(iii), C-(ii), D-(iv)							
	(c) A-(<i>iv</i>), B-(<i>i</i>), C-(<i>ii</i>), D-(<i>iii</i>)		A-(iii), B-(iv), C-(ii), D-(i)							
		()								

Answers

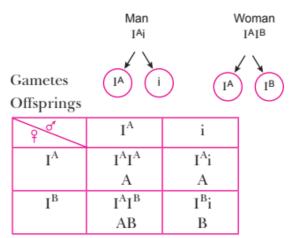
PRACTICE PAPER — 9														
1.	(<i>b</i>)	2.	(<i>b</i>)	3.	(c)	4.	<i>(a)</i>	5.	<i>(b)</i>	6.	(d)	7.	(<i>b</i>)	
8.	(c)	9.	(d)	10.	(b)	11.	(d)	12.	(d)	13.	(<i>b</i>)	14.	(<i>b</i>)	
15.	(<i>b</i>)	16.	<i>(a)</i>	17.	(d)	18.	<i>(b)</i>	19.	<i>(a)</i>	20.	<i>(a)</i>	21.	(d)	
22.	(d)	23.	<i>(a)</i>	24.	(b)	25.	<i>(b)</i>	26.	(<i>b</i>)	27.	(<i>b</i>)	28.	(<i>b</i>)	
29.	(a)	30.	<i>(b)</i>	31.	(a)	32.	(d)	33.	<i>(a)</i>	34.	(d)	35.	(<i>b</i>)	
36.	(c)	37.	(d)	38.	(a)	39.	<i>(a)</i>	40.	<i>(b)</i>	41.	(a)	42.	(<i>c</i>)	
43.	(d)	44.	(d)	45.	(b)	46.	(b)	47.	(b)	48.	(a)	49.	(<i>b</i>)	
50.	(a)													

Explanations

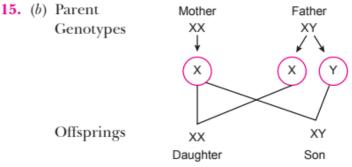
PRACTICE PAPER -9



13. (*b*) If the man is heterozygous the cross will be as follows:



Blood group B is possible only if the man is heterozygous.



Son receives X Chromosome from mother.

19. (*a*) According to the structure of DNA, distance between two base pairs is 3.4 A.

Therefore, if there are 75 base pairs, the length of DNA will be = 3.4 Å \times 75

32. (*d*) Large holes in Swiss cheese are due to production of carbon dioxide by the bacterium *Propionibacterium*.

