# **CELL BIOLOGY**

1.	Omnis 'cellula-e-cell	ula' stated by			
	1) Schleiden	2) Schwann	3) Virchow	4) Robert Hook	
2	Secondary wall is pr	esent hetween			
	1) Primary wall & Pro	otoplasm	2) Primary y	wall and middle lamella	
	3) Primary wall and n	lasma membrane	4) Plasma n	hembrane and protoplash	
3.	Chemicals present in	n middle lamella	i) i fusilita li	iemerane and protoprasi	
	1) Cellulose	2) Lignin	3) Hemicellulose	4) Pectin	
4.	True statement rega	rding functions of c	ell wall	.,	
	I: It is protective in fu	nction. II: It helps in	osmoregulation		)
	III: It gives definite sl	hape to the cell.	U		
	1) I & III	2) I, II & III	3) II & III	4) I & II	
5.	<b>Assertion A: Plasma</b>	membrane is not vi	isible in normal cells.		
	Reason R: It is thin a	nd closely appressed	to the cell wall		
	1) Both A, R are true	and R is the correct e	explanation of A.		
	2) Both A, R are true	but R is not the corre	ect explanation of A.		
	3) A is true but R is fa	alse 4) A is false	but R is true	$\mathcal{A}$ $\mathbf{A}$	
6.	Biological property	of the cell			
	1)Coagulation	2) Colloidal nature			
7	5) Growth	4) Brownian movem	ient		
/.	1) Protoing are condu	l jahad hatwaan linida			
	2) Lipid bilayer is san	dwiched between npius	otain		
	3) Protein sandwiched	i between another pro	otein		
	4) Lipids are sandwic	hed between other lir	nids		
8.	Fluid mosaic model	nronosed by	JICS.		
	1) Davson and Daniel	li 2) Čorti & F	ontana		
	3) Robertson	4) Singer & 1	Nicholson		
9.	Movement of cytopla	asm around a single	vacuole in regular d	irection is	
	1) Circulation	2) Rotation	3) Brownian mover	nent 4) Solation	
10.	Assertion A: Plants	are autotrophic			
	Reason R: Chloropla	asts are present in p	lant cells		
	1) Both A, R are true	and R is the correct e	explanation of A.		
	2) Boin A, K are true 3) A is true but $\mathbf{P}$ is f	but R is not the corre	but <b>P</b> is true		
11	Distide storing fate	and oil are	but K is true		
11.	1) Aleuroplast	2) Flaionlast	3) Amylonlast	4) Oleoplasts	
12	Pigment present in r	oots of Daucus	5) Milyiopiasi	4) Oleoplasts	
12,	1) Xanthophyll	2) Phycobili	ns		
	3) Anthocyanin	4) Carotenes			
13.	Chloroplast is called	as a semi-autonom	ous organelle becaus	e	1) It shows
ATP p	roduction	2) It shows I	ONA and Self replicat	ion.	-
	3) They inherit from a	cell to cell	4) They brea	ak down into two.	
14.	Pigment in Brown A	lgae			
	1) Xanthophyll	2) Anthocya	nin		
	3) Fucoxanthins	4) Chlorophy	yll		
15.	Assertion A: Riboso	mes are considered	as primitive cell orga	inelles.	
	Reason K: They are u	and D is the correct of	lelles		
	1) Doull A, K are true 2) Both A $\mathbf{P}$ are true	but <b>P</b> is not the correct e	explanation of $\Lambda$ .		
	3) A is true but R is f	alse $(\Delta) = \Delta$ is false	but $\mathbf{R}$ is true		
16.	Not a function of En	donlasmic reticulun	n		
	1) Glycogen storage	2) Intra cellular tran	sport		
	3) Lipid-synthesis	4) Protein synthesis	I.		
	· · ·	•			

17.	Cell organelle that converts Kinetic energy	gy into potential energ	<u>3</u> y.
10	1) Chloroplast 2) Mitochondria	3) Ribosomes	4) Lysosomes
18.	Cell organelle responsible for degradatio	n of lipids,carbohydra	ates or proteins.
	1) Mitochondria 2) Lysosomes	8	
10	3) Chloroplast 4) Glyoxyson Balan <sup>2</sup> a bady is produced from	nes	
19.	1) EP 2) Plasma mombrano	2) Dibosomos	1 Nuclous
20	Function of universal call organelle	5) KIUOSOIIIES	4. Inucleus
20.	1) ATP production 2) Digestion 3) Pro	tein synthesis (4) Rer	pository
21	70s ribosomes are present in	tem synthesis 4) Rep	Joshory
21.	1) Only prokarvotes	2) Only Eukaryotes	
	3) Both Prokaryotes and Eukaryotes	2) only 20102 joves	
	4) Always in prokaryotes but occasionally i	n Eukaryotes.	
22.	80s ribosomes can be separated into subu	inits	
	1) 50s & 30s 2) 60s & 40s	3) 60s & 20s	4) 70s & 10s
23.	Enzyme present in the larger sub-unit of	ribosome	
	1) Peroxidase 2) Peptidyle oxydase		
	3) Amylase4) Peptidyl transferas	se	
24	Function of call organalle discovered by	Duidanhaah	
24.	1) Synthesis of phospholipids	2) Conversion of fats	into carbohydrates
	3) Breakdown of H <sub>2</sub> O <sub>2</sub>	4) Digestion of food	materials
25.	Organelle considered as secretory in fund	rtion is	inaterials
201	1) Lysosome 2) Vacuole	3) ER	4) Golgi
26.	Organelle without a membrane		., corst
	1) Ribosome 2) Vescicle	3) Vacuole	4) Glyoxysome
27.	Cell organelles participating in photorep	resention	
	1) Only peroxysome	2) Peroxysom	e & Glyoxysome
	3) Peroxysome, Mitochondria & Chloroplas	st 4) Only Mitoc	chondria
28.	Pigment present in the repository of the	cell is	
	1) Carotene 2) Anthocyanin		
20	3) Chlorophyll 4) Xanthophyll	641 11	
29.	Secretory substance present in the reposi	tory of the cell	
	1) Lipid     2) Piotein       3) Latex     4) Sugar	<b></b>	
30	Froastic hody is		
20.	1) Ribosome 2) Mitochondria		
	3) Vacuole 4) Non Living Inclus	ion	
31.	<b>Coenocytic Algae</b>		
	1) Mucor 2) Rhizopus	3) Vaucheria	4) Chlorella
32.	Dikaryotic condition is seen in		
	1) Tapetal cell & Mucor	2) Tapetal cel	ls & Vaucheria
22	3) Tapetal cells & Ascomycotina	4) Ascomycol	tina & Mucor
33.	Plasmosome is present in	m 2) In Diagma a	nombrono () Nuclous
31	DNA & DNA polymorasos are prosont in	11 3) III Plasina I	nemorane 4) Nucleus
54.	1) DNA 2) Nu	cleonlasm	
(	3) Nucleolus 4) Vac	cuole	
35.	Ribosomes are produced at the		
	1) ER 2) Golgi		
	3) Plasmosome 4) Nucleoplas	sm	
36. 🧠	Tonoplasm is		
	1) Membrane covering the vacuole		
	2) Liquid present in Vacuole		
	3) Protein present in membrane		
27	4) Secretory substance present in protoplasi	n	
3/.	1) Perovusome 2) Chuovuson	10	
	$\begin{array}{ccc}     1) & 1 & 0 & 0 \\     3) & Vacuale \\     4) & I & vacane   \end{array}$		
	3) vacuole 4) Lysosollie		

#### 38. ER discovered by

- 3) Brown 4) Porter
- 1) Palade2) Rhodin3)Binding site & Condensing site is present in1) Small sub unit of ribosome2) 39. 2) Large sub unit of ribosome 3) In a complete ribosome 4) ER

1) ER2) Golgi complex3) RiboCell Organelles **40**. 3) Ribosome

4) Nucleus

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3	3	4	1	1	3	2	4	2	1	2	2	2	3	2	4	1	2	1	3	
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
3	2	4	2	4	1	3	2	3	4	3	3	4	2	3	2	1	4	3	2	
014	estion	ns on	chro	mose	mes	and	nuele	ic ac	ids								E			
Qui	-51101	15 011	CIIIO	most	JIIICS	anu	nucit	ic ac	ius											
1.	N	latch	the	follov	wing		<b>.</b>									$\mathbb{N}^{\mathbb{Z}}$				
		ist A	f	4.0.4		1\ 11	L	st B												
	A D	) H0	Imeis	ter		1) 11 2) D	ne ter	m nu	icieos	ome			nalla		than	) 				
	D C	) wa  ) Sut	ton 8	r Rov	ori	2) D 3) N	eep s	cam	ig uai	K SU	uctur	es m	pone	II IIIO	ther c	en				
		) Out	det a		CII	4) C	hrom	osom	es an	e the	vehic	les o	fhere	dity						
	5) Naming of chromosomes																			
			А	В		C	D	0		Α		В	C	]	D					
	1	)	2	5		4	3		2)	2		5	4		1					
	3	)	4	3		2	1		4)	5		4	1	-	2					
2.	Ε	ach o	chror	noso	me co	onsist	ts of													
	1)	) Two	o chro	omati	ds an	d two	DN.	A				2) Tv	vo ch	roma	tids r	nany	DNA	<u>،</u>		
•	3) One centromere and one arm 4) many centromere many arms and many DNA Tip of each arm is called																			
3.	3. Tip of each arm is called 1) Terminals 2) Telemere 3) Kargotype 4) Satellite																			
4	I, T	) Teri	minal	lS mhan	ofal	2) 16	elome	ere	nlan	3) + Irin	Karg	otype	e 	-	4) Sa	tellite	•			
4.		Owes		nber 2)		mays	USUII	les m	$\frac{1}{3}$		guon	11 15 5	4)	ll Hanl	onan	nus				
5	л Д	) I isi sserf	 tion (	(2) (A): I	n ang	anhas	e chi	romo	some	yza s ani	near	in di	ffere	nt sh	opup anes	pus				
	R	easo	n(R):	Chro	moso	omes	are p	ulled	apart	t bv t	heir c	onto	meres	s in a	napha	ase				
	1	) Bot	hĂa	nd R	are ti	rue ar	nd R	is cor	rect e	explai	natio	n of A	A							
	2)	) Bot	h A a	nd R	are c	orrec	t but	R is a	not co	orrect	expl	anatio	on of	А						
	3)	) A is	true	and I	R is f	alse	4)	A is	false	and l	R is t	rue								
6.	C	hron	nosoi	me w	ith o	nly o	ne ar	m is			a 1									
7		) Met	acent	tric	• <b>4</b> 1	2) Te	eloce	ntric		3)	Sub-	meta	centr	'1C 4	4) Ac	ro ce	ntric			
7.		USTOR	ie pr	otein	s wit	n Lys วาบ	sine r	icn a	re	3)]	и. я	, Ц.,		,	1) U.	<i></i> , ц	_			
8	H	/ 11] [29nd	H. 9	re ri	ch in	2)11	3 & 1	14		5)1	$1_{2A}$ c	<b>C</b> 112B		-	+) 11]	æ H	2			
<b>V</b> .		) Met	hioni	ine II		2) V	aline			3)	Lysi	ne		2	4) Ar	ginin	e			
9.	H	listor	ie pr	otein	that	is no	t a p	art o	fnuc	leoso	me				- ,,	0				
	1)	) H1				2) H	2			3)	$H_3$			2	4) H <sub>4</sub>					
10.	Т	rue s	stater	nent	rega	rding	g chro	omos	ome											
	А	.) All	the c	hrom	loson	nes in	a cel	ll are	not io	lenti	cal									
	B	) All	the c	ells i	n a sp	pecies	have	e sam	e nur	nber	of ch	romo	some	S						
	C	) All	spec	ies of	plan	ts hav	e sar	ne nı	imbei	of c	hrom	osom	les							
	D	) All	chro	moso	mes	in pla	nts at $\sim$	re ide	entica		0	р			1) 4	0_ T				
	1	) A Å	ίВ			2) B	æС			- 3)	υæ	υ		4	+) A (	αD				

11.	Longest chromoso	mes in plants are seen	in	
	1) Allium	2) Pisum	3) Trillium	4) Saccharum
12.	Spindle fibres are a	ttached to chromosor	nes to their	
	1) Centromeres	2) Kinetochores	3) Satellites	4) Arms
13.	True statement reg	arding secondary con	striction is	,
	1) Chromosomes ber	nd at secondary constri	ction	
	2) Chromatids separa	ate from this point		
	3) Some are concern	ed with formation of n	ucleoli	
	4) Every chromosom	e show secondary con	striction	
14.	Hanloid number of	which plant is equal	to three times less tha	n Orvza
1.11	1) Nicotiana	2) Zea	3) Pisum	4) Allium
15	The number of chr	mosomes in the endo	snerm of <i>Pisum</i> resul	ting from a cross between diploid
101	male and tetranloid	female nlants		
	1) 28	2) 35	3) 28 or $35x$	4) 21
16	Snacer DNA	2) 55	5) 20 01 55K	1) 21
10.	1) Space between DI	NA 2) Distance h	etween two nucleosom	les
	3) Part of DNA betw	veen centromere and te	lomere	
	4) Part of DNA which	the joins two nucleosom		
17	Shapes of sub-meta	centric and acrocent	ic chromosomes resp	actively are
1/.	1) V and I	2) I and I	3) T & I $(1)$ V $(2)$	and I
18	Fvery chromosome	bas	5)101 +) /	
10.	$\Delta$ ) Two kinetochores	B) Two arms		
	C One or two centro	D Two arms	matide	
	1) $\Delta \& B$	$2) \mathbf{R} & \mathbf{C}$	3) C & D	4) A & D
10	1) A & D Major difference b	2) D & C	Jios in	-) A & D
1).	1) Number of carbor	atoms in sugar	2) Number of	foxygen atoms in sugar
	3) Number of phosel	aton attached to sugar	4) Research attac	abod to sugar
20	Difference between	nucleoside and nucle	4) Dases alla	ched to sugar
20.	1) Phosphata	2) Nitrogon base	3) Sugar	1) Sugar and Basa
21	() r nospilate	2) Millogen base	5) Sugar	4) Sugar and Base
21.	$\frac{1}{1} A + T = G + C$	2) $A + C = C + T$	$(3) \land \Box G = C \Box T$	(1) $\Lambda - T \& C - C$
22	1) A+1 = 0+C	2) A+C = O+1	3) A+0 = C+1	4) A = 1 & 0 = C
22.	1) DNA is always ty	aruning DNA is	2) DNA molecule w	th protoing is acidia
	2) DNA is always tw	v in the nucleus	4) DNA molecule wi	many forms
22	5) DNA is ioulid olif	y in the interes	4) DINA Call exist III	many forms
23.	$\frac{1}{265} \text{ nm}$	2) 260 nm	2) 200 nm	(1) 70 nm
24	The number of nuc	2) 200 IIII leatides in 20 complet	3) 300  mm	4) /0 IIII
24.	1) 1000	20  complet	2) 900	4)400
25	1) 1000	2) 200 coular weight of Thu	5) 800 ning is mans than the	4)400
23.	Assertion (A) : Mor	ecular weight of Thy	mille is more than that	it of uraci
	1) Poth A and P are	true and <b>P</b> is correct or	ar meening group.	
	1) Doul A and R are	and K is correct ex	xplanation of A	
	2) Dour A and K are 2) A is true and D is	false (1) A is false	and D is true	
26	5) A is true and K is	anding mDNA is	and K is true	
20.	1) It's life apon is ye	arung mana is	2) It is the smallest D	
448	2) It forms pseudoba		4) It is meduced by t	unA monstation
27	The length of DNA	nues with 20 hass mains in	4) it is produced by t	14115140011
21.	1) 210 $\wedge^{\circ}$	with $20$ base pairs is	$2) \in \mathbb{R} \wedge \mathbb{Q}$	$(1) 126 \Lambda^{0}$
20	1) 210 A	2) 340 A	3/08 A	4) 120 A
28.	1) Drook DNA	uons and nign pH val	ues in a cell can	
	1) Break DINA 2) Line - 1 DNA	4) Conducto DNA		
	3) Uncoll DNA	4) Condense DNA		

29.	In	n aut	ocata	lysis	ı ·	1	. 1						N.T. A	1	1.					
	1)	) DN.	A uno	dergo	lysis form	and and	get d	enatu	re			ב (2 10 (1	NA n	nultip	lies	DNA				
30	3) T	) DΝ. Ψ <b>ΓΙ</b>	A COI	.15 10 . is a n	ort o	f	11050	me				4) DI	NA P	Touuc	es m	KINF	7			
50.	1`		Α	is a p		2) m	RNA	`		3)	tRN	4		4	4) rR	NA				
31.	Ă	rran	ge th	e dif	feren	t RN	As in	n the	incre	eased	orde	r of	their	perc	entag	ge in	a cell	l		
• •	1	) t RN	NA -	→ m I	RNA	$\rightarrow$ r	RNA	A			01 01	2) m	RNA	$\rightarrow 1$	r RN	$A \rightarrow$	t RN	A		
	3	) r RN	NA –	→ t R	NA -	$\rightarrow m$	RNA	A				4) m	RNA	$\rightarrow 1$	t RN/	$A \rightarrow$	r RN	A		
32.	Ť	he sr	nalle	st RN	NA is							,								
	1)	) t RN	ΝA			2) m	RNA	4	3) r l	RNA			4)	Both	rRN	A & t	RNA			
33.	S	hape	of t	RNA	is															$\bigcirc$
	1)	) Pini	nate			2) Pa	almat	te		3)	Line	ar		4	4) Cl	over l	leaf			
34.	Ν	ucle	otide	abse	nt in	term	inati	ion co	odon	5										
	1)	) Ade	nine			2) G	uanii	ne		3)	Cyto	cine		4	4) Ur	acil				
35.	N	umb	er of	tRN	A ba	ised o	on th	eir ai	ntico	dons	are				1) (1)					
26		) 64	•	C T	•	2)20	)			3)	3			4	4) 61					
36.	<b>F</b>	unct	ion o	I I Op	01501	mera	ses is	5	<b>1</b> ) D.		ים א	AT A		4		$\mathbb{P}\mathcal{A}$				
	1	) Poly	ymen uco t	zatio	ll n in t	wo st	rand	0	(2) D		ng Di	NA				$\bigcirc$				
37	3) T	) Neu 'ho ni	ucei	r of	nuclo	wo si otida	failu	s tha la	4) Ll nath	of D	na i	102	0 10		$P_{\mathcal{A}}$					
57.	1`	300	umov		nucic	2) 60	))) )))	ine ie	ngtn	3)	1020	5 102	U A			4)	340			
38.	If	f Ade	nine	s to T	'hvm	ine r	atio i	in on	e stra	and o	f DN	A is	2 the	ratio	of A	deni	ne to	Thv	mine	on the
••••	01	pposi	ite st	rand	is															011 0110
	1)	) 10				2) 2				3)	0.5		V	2	4) 5					
39.	G	lenet	ic ma	iteria	l in v	iruse	es													
	1) DNA 2) RNA 3) DNA & RNA 4) DNA or RNA																			
	40. Assertion (A) : Pseudohelices does not form in mRNA																			
40.	A	ssert	tion (	<b>A) :</b> ]	Pseud	lohel	ices	does	not f	orm i	in ml	RNA	5)	2111	I W K			) D1	1101	
40.	A R	ssert easoi	t <b>ion (</b> n(R)	A): l : mRl	Pseuc NA is	<b>lohel</b> s shor	ices t live	does and does	not f	orm i	in ml	RNA						) D1	1101	
40.	A R 1)	eason ) Bot	t <b>ion (</b> n(R) h A a	A) : 1 : mR1 nd R	Pseuc NA is are tr	<b>dohel</b> s shor rue ar	ices t live nd R	does ed is cor	not for the sector of the sect	orm i expla	in ml	RNA	4					) D1		
40.	A R 1) 2)	eason Botl Botl	tion ( n(R) h A a h A a	A) : l : mRl nd R nd R	Pseuc NA is are tr are c	dohel s shor rue an orrect	ices t live nd R t but	does ed is cor R is 1	not for rect of not co	orm i explatorrect	in ml nation expl	RNA n of <i>A</i> anatio	A on of	A	i u n				11 01	
40.	A R 1) 2) 3)	eason Botl Botl Botl A is	tion ( n(R) h A a h A a s true	A) : l : mRl nd R nd R and I	Pseud NA is are tr are c R is fa	dohel s shor rue an orrect alse	ices t live nd R t but 4)	does ed is cor R is 1 A is	not for rect of not co false	orm i explatorrect and l	in ml nation expl R is t	RNA n of A anation	A on of	A				) 21		
40.	A R 1) 2) 3)	eason Botl Botl Botl A is	tion ( n(R) h A a h A a true	A) : 1 : mRI nd R nd R and I	Pseud NA is are tr are c R is fa	dohel s shor rue an orrect alse Chro	ices t live nd R t but 4) omos	does ed is cor R is 1 A is some	not for rect of not co false	orm i explatorrect and i icleic	in ml nation expl R is t acid	RNA n of A anation rue	A on of	A		17	10	10	20	1
<b>40.</b>	A R 1) 2) 3) 2	ssert eason ) Botl ) Botl ) A is	tion ( $R$ ) h A a h A a true	A) : 1 : mRI nd R nd R and I	Pseud NA is are tr are c R is fa	dohel s shor rue ar orrect alse Chro 7	ices t live nd R t but 4) omos 8	does ed is cor R is 1 A is somes 9	not for rect of not co false s, Nu 10	explatorrect and brief	in ml nation x explR is t $x$ acid 12	<b>RNA</b> n of <i>A</i> anation rue s 13	A on of	A	16	17	18	19	20	
40. 1	A R 1) 2) 3) 2	ssert eason ) Both ) Both ) A is 3	tion ( $R$ ) h A a h A a true 4	A) : 1 : mR1 nd R nd R and I 5	Pseuc NA is are tr are c R is fa	dohel s shor rue an orrect alse Chro 7	ices t live nd R t but 4) omos 8	does ed is cor R is 1 A is somes 9	not for rect of not co false s, Nu 10	explain prrect and licleic 11	in ml nation expl R is t acid 12	RNA n of A anation rue s 13	A on of	A	16	17	18	19	20	
<b>40.</b> 1 <b>2</b>	A R 1) 2) 3) 2 1	ssert eason ) Both ) Both ) A is 3 2	$\frac{\text{ion (R)}}{\ln(R)}$ $h A a$ $h A a$ $s true$ $4$ $4$	A) : 1 : mRI nd R nd R and I 5 2	Pseuc NA is are tr are c R is fa	s shor rue an orrectalse Chro 7 3	ices t live nd R t but 4) omos 8	does ed is cor R is 1 A is somes 9 1	not for rect of false s, Nu 10	explatorrect and Dicleic 11 3	in ml nation c expl R is t acid 12 2	RNA n of <i>A</i> anation rue s 13 3	A on of 14	A	16 4	17 2	18 4	19 2	20 1	]
<b>40.</b> 1 2 21	A R 1) 2) 3) 2 1 22	ssert eason ) Botl ) Botl ) A is 3 2 23	tion ( n(R) h A a h A a true 4 4 24	A) : 1 : mRl nd R nd R and I 5 2 25	Pseuc NA is are tr are c R is fa 6 2 26	<pre>dohel s shor rue an orrect alse Chro 7 3 27</pre>	ices t live d R t but 4) omos 8 4 28	does ed is cor R is p A is somes 9 1 29	not for rect of false s, Nu 10 1 30	explatorrect and breck cleic 11 3 31	in ml nation expl R is t acid 12 2 32	RNA n of A anatie rue s 13 3 33	A on of 14 4 34	A 15 2 35	16 4 36	17 2 37	18 4 38	19 2 39	20 1 40	
<ul> <li>40.</li> <li>1</li> <li>2</li> <li>21</li> </ul>	A R 1) 2) 3) 2 1 22	ssert eason ) Botl ) Botl ) A is 3 2 23	tion (R) h A a h A a true 4 4 24	A) : 1 : mRl nd R nd R and I 5 2 25	Pseuc NA is are tr are c R is fa 6 2 26	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> </ul>	ices t live d R t but 4) omos 8 4 28	does ed is cor R is r A is somes 9 1 29	not for rect of false s, Nu 10 1 30	explatorrect and b cleic 3 31	in ml nation expl R is t acid 12 2 32	RNA an of A anation rue s 13 3 33	A on of 14 4 34	A 15 2 35	16 4 36	17 2 37	18 <b>4</b> 38	19 2 39	20 1 40	
<ul> <li>40.</li> <li>1</li> <li>2</li> <li>21</li> <li>3</li> </ul>	A R 1) 2) 3) 2 1 22 3	ssert eason ) Botl ) Botl ) A is 3 2 23 2 2	$\frac{\text{ion (R)}}{\text{h A a}}$ $\frac{\text{h A a}}{\text{s true}}$ $\frac{4}{4}$ $\frac{4}{24}$ $4$	A) : 1 : mRl nd R nd R and H 5 2 25 1	Pseuc NA is are tr are co R is fa 6 2 26 1	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> </ul>	ices of t live nd R t but 4) omos 8 4 28 2	does       ed       is cor       R is r       A is       somes       9       1       29       2	not for rect of false s, Nu 10 1 30 3	orm i expla prrect and 1 cleic 11 3 31 4	in ml nation expl r is t acid 12 2 32 1	RNA n of A anation s 13 3 33 4	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
<ul> <li>40.</li> <li>1</li> <li>2</li> <li>21</li> <li>3</li> </ul>	A R 1) 2) 3) 2 1 22 3	ssert eason ) Botl ) A is 3 2 23 2 2	<b>ion (</b> n(R) h A a h A a s true 4 4 24 4	A) : 1 : mRl nd R nd R and I 5 2 25 1	Pseuc NA is are tr are c R is fa 6 2 26 1	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> </ul>	<b>ices</b> t liven d R t but 4) <b>omos</b> 8 <b>4</b> 28 <b>2</b>	does ed is cor R is r A is somes 9 1 29 2	not farrect of false s, Nu 10 1 30 3	orm i expla orrect and i icleic 11 3 31 4	in ml nation c expl R is t acid 12 2 32 1	<b>RNA</b> n of <i>A</i> anation rue <b>s</b> 13 <b>3</b> 33 <b>4</b>	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
<ul> <li>40.</li> <li>1</li> <li>2</li> <li>21</li> <li>3</li> <li>Que</li> </ul>	A R 1) 2) 3) 2 1 22 3 3	ssert eason ) Botl ) Botl ) A is 3 2 23 2 2 3 2	tion ( n(R) h A a h A a true 4 4 24 4 cell o	A) : 1 : mRl nd R nd R and I 5 2 25 1 divisi	Pseuc NA is are tr are c R is fa 6 2 26 1 0 n	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> </ul>	ices of t live ad R t but 4) omos 8 4 28 2 2	does ed is cor R is r A is somes 9 1 29 2	not for rect of false s, Nu 10 1 30 3	explatorrect and b cleic 11 3 31 4	in ml nation expl R is t acid 12 2 32 1	RNA an of A anation s 13 3 33 4	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
<ol> <li>40.</li> <li>1</li> <li>21</li> <li>3</li> <li>Que</li> <li>1</li> </ol>	A R 1) 2) 3) 2 1 22 3 estion	ssert eason ) Botl ) Botl ) A is 3 2 23 2 2 15 on	<pre>ion ( ion (R) h A a h A a true 4 4 4 24 4 24 4 cell o osis</pre>	A) : I : mRI nd R nd R and I 5 2 25 1 divisi	Pseuc NA is are tr are c R is fa 6 2 26 1 0 n	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> </ul>	ices of t live o	does ed is cor R is r A is somes 9 1 29 2 2	not farrect of false s, Nu 10 1 30 3	expla prrect and b cleic 11 3 31 4	in ml nation c expl R is t acid 12 2 32 1	RNA an of A anation rue s 13 3 33 4	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
40. 1 2 21 3 Que 1.	A R 1) 2) 3) 2 1 22 3 stion Ln 1	ssert eason ) Botl ) Botl ) A is 3 2 23 2 2 15 on Mit	<pre>ion (R) h A a h A a true 4 4 24 4 24 4 cell o tosis phase</pre>	A) : 1 : mRl nd R nd R and I 5 2 25 1 divisi	Pseuc NA is are tr are c R is fa 6 2 26 1 0 n Ile filt	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> <li>2) M</li> </ul>	ices t live d R t but 4) omos 8 4 28 2 corm	does ed is cor R is r A is somes 9 1 29 2 durin hase	not fanot fanot co false s, Nu 10 1 30 3	orm i expla orrect and i icleic 11 3 31 4	in ml nation expl R is t acid 12 2 32 1 Anat	RNA n of A anation rue s 13 3 33 4	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
<ol> <li>40.</li> <li>1</li> <li>21</li> <li>3</li> <li>Que</li> <li>1.</li> </ol>	A R 1) 2) 3) 2 1 22 3 2 5 5 5 1 1) 1)	ssert eason ) Botl ) Botl ) A is 3 2 23 2 2 3 2 15 on Mit	tion (R) h A a h A a true 4 4 4 24 4 cell o phase	A) : I : mRI nd R nd R and I 5 2 25 1 divisi	Pseuc NA is are tr are co R is fa 6 2 26 1 26 1 1 en lle fit	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> <li>2) M</li> </ul>	ices of t live o	does ed is cor R is r A is somes 9 1 29 2 durin hase	not for rect of false s, Nu 10 1 30 3	orm i expla orrect and i cleic 11 3 31 4	in ml nation expl R is t acid 12 2 32 1 Anap	RNA n of A anation rue s 13 3 33 4	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3 4) Te	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
40. 1 2 21 3 Que 1. 2.	A R 1) 2) 3) 2 1 22 3 2 5 5 5 10 1) 1) 1) 1) 1)	ssert eason ) Botl ) Botl ) A is 3 2 23 2 2 3 5 0 n Mit ) Proj n cell	<pre>ion (R) h A a h A a true 4 4 4 24 4 24 4 cell a cosis phase cycl</pre>	A) : I : mRI nd R nd R and I 5 2 25 1 divisi spind	Pseuc NA is are tr are c lis fa 6 2 26 1 26 1 un lle fit	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> <li>2) M</li> <li>time</li> </ul>	ices t live d R t but 4) omos 8 4 28 2 corm tetapl peri	does ed is cor R is r A is somes 9 1 29 2 durin hase od is	not farrect of false s, Nu 10 1 30 3 ng for	orm i expla orrect and i cleic 11 3 31 4	in ml nation expl R is t acid 12 2 32 1 Anap	RNA an of A anation rue s 13 3 33 4	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3 4) Te	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
<ol> <li>40.</li> <li>1</li> <li>21</li> <li>3</li> <li>Que</li> <li>1.</li> <li>2.</li> </ol>	A R 1) 2) 3) 2 1 22 3 stion 1) 1) 1) 1) 1) 1)	ssert eason ) Botl ) A is 3 2 23 2 2 15 on Mit ) Proj n cell	<pre>ion ( ion (R) h A a h A a true 4 4 4 24 4 24 4 cell o tosis phase cycl</pre>	A) : 1 : mRI nd R and R and F 2 25 1 25 1 divisi spind c spind 2	Pseuc NA is are tr are c R is fa 6 2 26 1 2 6 1 2 6 1 1 0 n Ille filt	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> <li>2) M</li> <li>time</li> </ul>	ices t live d R t but 4) omos 8 4 28 2 corm [etapl beri 3)	does ed is cor R is A is somes 9 1 29 2 durin hase od is G1	not fanot fanot co false s, Nu 10 1 30 3 for	orm i expla orrect and i icleic 11 3 31 4	in ml nation expl R is t acid 12 2 32 1 Anap G2	RNA an of A anation rue s 13 3 33 4 bhase	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3 4) Te	17 2 37 2	18 <b>4</b> <b>3</b> 8 <b>3</b> use	19 2 39 4	20 1 40 2	
<ol> <li>40.</li> <li>1</li> <li>21</li> <li>3</li> <li>Que</li> <li>1.</li> <li>2.</li> </ol>	A R 1) 2) 3) 2 1 22 3 5 5 5 5 10 1) 1) 1) 1) 1) 1)	ssert eason ) Botl ) A is 3 2 23 2 2 3 15 on Mit ) Proj n cell ) M	tion ( h (R) h A a h A a true 4 4 4 24 4 cell o phase cycl	A) : l mRl nd R and R and F 2 25 1 2 25 1 divisi spind	Pseuc NA is are tr are co lis fa 6 2 26 1 26 1 ule fit	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> <li>2) M</li> <li>time</li> </ul>	ices t live d R t but 4) omos 8 4 28 2 2 form letapl 3)	does ed is cor R is r A is somes 9 1 29 2 durin hase od is of 1	not for	orm i expla orrect and 1 icleic 11 3 31 4	in ml nation expl R is t acid 12 2 32 1 Anap G2	RNA an of A anation rue s 13 3 33 4	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
40. 1 2 21 3 Que 1. 2. 3.	A R 1) 2) 3) 2 1 22 3 2 5 5 5 10 1) 1) 1) 1) B	ssert eason ) Botl ) Botl ) A is 3 2 23 2 23 2 2 3 0 1 5 on 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<pre>ion ( ion (R) h A a h A a true 4 4 4 24 4 24 4 cell o bhase cycl l shap</pre>	A) : l mRl nd R and R and F 2 25 1 25 1 2 25 1 2 25 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 2 5 2 5 2 2 5 2 5 2 2 5 2 5 2 5 2 5 2 5 2 5 2 5 5 7 5 7	Pseuc NA is are tr are c lis fa 6 2 26 1 26 1 1 en truct	<ul> <li>dohel</li> <li>shor</li> <li>rue an</li> <li>orrectalse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> <li>2) M</li> <li>time</li> <li>ure for</li> </ul>	ices t live d R t but 4) omos 8 4 28 2 2 corm tetapl 3) ormo	does ed is cor R is r A is somes 9 1 29 2 durin hase od is of 1 ed du	not for rect of false s, Nu 10 1 30 3 for ring	orm i expla orrect and l cleic 11 3 31 4 3) 4) cell c	in ml nation expl R is t acid 12 2 32 1 Anap G2 livisi	RNA an of A anation rue s 13 3 33 4 ohase	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3 4) Te	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
<ol> <li>40.</li> <li>1</li> <li>21</li> <li>3</li> <li>Que</li> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	A R 1) 2) 3) 2 1 22 3 3 setion 1) 1) B 1)	ssert eason ) Botl ) A is 3 2 23 2 2 15 on Mite ) Mite	<pre>ion (R) h A a h A a h A a true 4 4 4 24 4 24 4 cell o tosis phase cycl I shap otic s</pre>	A) : I mRI nd R nd R and I 5 2 25 1 divisi spind e sho 2) ped s pindl	Pseuc NA is are tr are c R is fa 6 2 2 2 6 1 2 6 1 1 0 n Ille filt S truct e	<ul> <li>dohel s shor rue an orrect alse</li> <li>Chro</li> <li>7</li> <li>3</li> <li>27</li> <li>3</li> <li>oers f</li> <li>2) M</li> <li>time</li> <li>ure for</li> </ul>	ices t live d R t but 4) omos 8 4 28 2 2 iorm (etapl 3) iorm	does ed is cor R is cor A is somes 9 1 29 2 durin hase od is 0 G1 ed du	not fanot fanot condition false s, Nu 10 1 30 3 for 2) N	orm i expla orrect and i icleic 11 3 31 4 3) 4) cell c uclea	in ml nation c expl R is t acid 12 2 32 1 32 1 Anap G2 livisi r men	RNA n of A anation rue s 13 3 33 4 bhase	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3 4) Te	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	
<ol> <li>40.</li> <li>1</li> <li>21</li> <li>3</li> <li>Que</li> <li>1.</li> <li>2.</li> <li>3.</li> </ol>	A R 1) 2) 3) 2 1 22 3 3 5 5 5 10 1) 1) 1) 3)	ssert eason ) Botl ) Botl ) A is 3 2 23 2 2 3 2 1 5 on Mit ) Mroj M cell ) M carrel ) Mit ) Proj	<pre>tion (R) h A a h A a true 4 4 4 24 4 24 4 cell o tosis phase cycl l shap otic s agmo</pre>	A) : l mRl nd R nd R and R and F 2 25 1 25 1 divisi e sho 2) ped s pindl plast	Pseuc NA is are tr are co lis fa 2 2 2 2 1 2 6 1 2 6 2 2 6 1 2 6 1 1 0 n lle filt rtest o S truct e	<ul> <li>iohel</li> <li>ishor</li> <li>interaction</li> <li>interaction&lt;</li></ul>	ices t live d R t but 4) omos 8 4 28 2 2 form (etap) form 3) orm	does ed is cor R is r A is somes 9 1 29 2 durin hase od is of 1 ed du	not for rect of false s, Nu 10 1 30 3 for 2) N 4) Co	orm i expla prrect and 1 icleic 11 3 31 4 3) 4) cell c uclea ell pla	in ml nation expl R is t acid 12 2 32 1 Anap G2 livisi r men ate	RNA n of A anation rue s 13 3 3 3 4 ohase	A on of 14 4 34 3	A 15 2 35 4	16 4 36 3	17 2 37 2	18 4 38 3	19 2 39 4	20 1 40 2	

4.	True stateme A: Chromoso B: Amount of C: Number of	ent regarding Mite me number reduces f DNA reduces to h f cells always doubl	osis 5 to half. alf. les.		
	1) A & C	2) Only B		3) B & C	4) A & B
5.	Assertion A: Reason R: A 1) Both A & 2 2) Both A & 2 3) A is true, F	Mitotic division is After division daug R are true and R is R are true but R is r R is false 4)	<b>called as </b> <b>ghter cells</b> the correct not the corr A is false, T	equational divis are identical in explanation of A ect explanation of R is true.	sion. size & characters A. of A.
6.	After G <sub>1</sub> pha 1) Same that 3) Double tha	<b>se number of chro</b> of a parent it of a parent	mosomes i 2) Hal 4) Ma	in a mitotic cell f that of a parent y be less or more	cycle. t e
7.	The stage wh 1) M	ich is most active2) G23)	<b>biochemic</b> Interphase	ally 4) Cyto	okinesis
8.	True stateme A: They don't B: They don't C: They don't 1) A & B	ent regarding daug t have centromere t have arms. t have two chromati 2) B & C	<b>ghter chro</b> i ds.	mosome 3) C &	D 4) Only C
9.	<b>Bivalent stag</b> 1) Zygotene	ge is 2) Pachyte	ene	3) Diplotene	4) Dlakinesis
10.	Assertion A: Reason R: 1 1) Both A & 2 2) Both A & 3 3) A is true, F	<b>Due to meiosis ge</b> Meiosis produces ha R are true and R is R are true but R is n R is false 4)	netic varia aploid num the correct not the corr A is false,	tions are seen in ber in gametes explanation of A ect explanation of R is true.	<b>n population.</b> A. of A.
11.	Spindle fiber 1) Metaphase 3) Zygotene &	rs formation starts I & Metaphae II	in meiosis 2) Me 4) Onl	during taphase I & Meta ly Zygotene.	aphase II
12.	Nuclear men	nbrane in meiosis	disappears	after	
13	1) Leptotene Stage of segr	2) Diplote	ne	3) Metaphase	4) Diakinesis
	1) Anaphase	- I		2) Pachytene	
Y	3) Anaphase	- I & Anaphase – II		4) Pachytene &	ż Anaphase – II
14.	True stateme A : All type o B : For all ce C : Cell divis	ent regarding cell o of cell divisions inc ell divisions a life c sion in some organ	division. crease the l ycle can bo isms help i	oody. e drawn. in reproduction	1.
	1) A & B	2) Only C		3) B & C	4) A & C

15.	True statement r A) Meiosis result B) First spindle a C) Cytokinesis m D) After first me	regarding meiosis ts in the formation apparatus is para nay or may not ta iotic division chro	n of four identical cells. llel to the cell plate. ke place after meiosis— omatid number is same	I at both poles.	
	1) A & B	2) B & C	3) C & D	4) A & D	
16.	Chromosomes an 1) Only in Mitosis 3) Mitosis and Me	r <b>e separated into</b> s eiosis – II	<ul><li>chromatids in</li><li>2) Only in Meiosis</li><li>4) Mitosis and Meiosis</li></ul>	-і	
17.	Crossing over tai 1) Sister chromati 2) Non sister chro 3) Two chromatid 4) Non sister chro	kes place betweer ds of Homologous matids of Heterolo ls of a single chror matids of Homolo	n s chromosomes ogous chromosomes. nosome. ogous chromosomes.		
18.	<ul><li>Stage of termina</li><li>1) Mitosis</li><li>3) Diplotene</li></ul>	lization is	<ul><li>2) Diakinesis</li><li>4) Pachytene</li></ul>		
19.	Stage in which b 1) Anaphase – I 3) Anaphase – II	ivalents are separ	erated. 2) Pachytene 4) Cytokinesis		
20.	Longest phase in 1) Prophase - I 3) Meiosis - II	meiosis is	2) Meiosis – I 4) Pachytene		
21.	Number of bipol 1) One	ar spindle appara 2) Two	atuses formed during me 3) Three	e <b>iosis</b> 4) Four	
22.	In Diakinesis A) Non-sister chro B) Sister chromat C) Homologous c D) Bivalents are r	omatids are separa ids are separated hromosomes are s eleased into the cy	ted eparated toplasm	4)Only D	
23.	For the first time 1) Walter Flemmi	e mitosis is report	<b>red in plants by.</b> asburger	4)Omy D	
G	3) August Weism	an 4) Far	mer & Moore		
24.	<b>The protein pres</b> 1) Fibrin	ent in spindle fib 2) Spindlin	ers. 3) Tubulin	4) Pilin	
25.	<b>Correct sequence</b> 1) MG <sub>2</sub> G <sub>1</sub> 3) G <sub>1</sub> SM	e of different pha S G <sub>2</sub>	ses in a cell cycle 2) SG <sub>2</sub> MG <sub>1</sub> 4) MG <sub>1</sub> G <sub>2</sub> S		

#### 26. True statement regarding pachytene stage

- A) It is the longest phase in meiosis
- B) Synapsis occurs between homologous chromosomes
- C) Between non-sister chromatids one or two chiasma form
- D) Spindle fibres attach to the kinetochore.

1) A & B 2) B, C & D 3) Only C 4)	) A, C & D
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#### 27. Match the following

						T	
			I	List I		List II	
		A	Anaphas	se	Ι	Terminalization	
		В	Anaphas	se-I	II	Separation of chromatids	
		С	Diakines	sis	III	Segregation	
		D	Zygoten	e	IV	Crossing over	
					V	Pairing	
	1. 3	A IV II	B III V	C II III	D I IV	A B C D 2. III IV I II 4 II III I V	
28.	Meios 1) Poli 3) Spo	<b>is ca</b> len g proge	n be observation be observation be observation of the servation of the ser	e <b>rved in</b> g le		<ul><li>2) Functional megaspore</li><li>4) Gametes</li></ul>	
29.	<b>If 20 s</b> 1)20 X	soma K 8	itic cells i	<b>indergo</b> 2) 20 <sup>8</sup>	g mitosis	for 8 generations total numbers of cells p 3) 8 <sup>20</sup> 4) 20 X 2 <sup>8</sup>	oroduced are
30.	Corre	ct se	quence o	f differ	ent phas	ses in decreasing order of their time period	ds
	1) S	G <sub>1</sub>	G <sub>2</sub> N	A	•	2)SG <sub>2</sub> M	
	3)S	M-	G <sub>2</sub> C	31		4) SG <sub>2</sub> MG <sub>1</sub>	
31.	Asser	tion	(A): Chr	omoson	nes attai	n maximum stability at metaphase	
	Reaso:	n (R	): Chrom	osomes	are firml	ly attached and held by spindle fibres	
	$\frac{1}{2}$ Bot	ΠA hA	& R are to $&$ R are to	rue and I	R is the $C$	the correct explanation of A	
	3) A is	strue	e. R is fals	se	$\frac{4}{4}$ A is	s false. R is true.	
32.	Asser	tion	(A): In m	, ietapha	se each c	chromosome has two chromatids.	
	Reaso	n(R)	: In other	phases (	each chro	omosome has only one chromatid.	
	1) Bot	h A	& R are the	rue and 1	R is the c	correct explanation of A.	
	2) Bot	hΑ	& R are the	rue but H	R is not t	the correct explanation of A.	
	3) A is	s true	e, R is fals	se	4) A is	s false, R is true.	
33.	True	state	ment am	ong the	followin	ng	
	A) Ch	romo	osomal sp	indle fit	ores attac	ch to the centromere.	
	$\mathbf{B}$ In 1	mitos	sis both th	ie Kineto	ocnores o	or single chromosome are attached to the spi	nule fibres.
	C) In 1	meio	sis—I bol	In the Ki	inetochor	res of single chromosome are attached to the	spinale fibres.
	ווווע	111010	11 DO 11- 818	ui uie Kl	Inciociioi		spinule nules.

3) C & D 1) A & B 2) B & C 4) B & D

34.	<b>Cell plate fo</b> 1) Random	ormation is 2) Centrifugal	l 3) Centripeta	l 4) Bipolar					
35.	In a cell wit chromatids	h diploid number 24 u in each daughter cell a	ndergoing meiosis, a tre.	fter anaphase –II the r	umber of				
	1) 12	2) 48	3) 24	4) 6					
36.	The broken	chromatids after gene	tic exchange get unit	ed by enzyme					
	1) Ligase	2) Nuclease	3) Polymerase	4)Ligase & nuclease					
37.	In meiosis e	nlargement of nucleus	and nucleolus obser	ved respectively durin	g				
	1) Zygonema	a & Pachytene	2) Leptonema & Zyg	gonema					
	3) Leptonem	a & Pachynema	4) Diakinesis & Met	aphase—I					
38.	<b>'Chromosor</b>	nal congression ' is ob	served in						
	1) Metaphas	e	2) Anaphase—I						
	3) Metaphase	e—II	4) Metaphase—I						
39.	The primar	y step towards the orig	gin of new species is						
	1) Anaphase	I	2) Anaphase-	-11					
	3) Prophase-	_I	4) Prophase—II						

#### 40. Wrong statement among the following

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- 1) Constant chromosome number is maintained from one generation to the next due to meiosis
- 2) Constant chromosome number is maintained from parent to daughter due to mitosis
- 3) Constant chromosome number is maintained from one generation to the next due to mitosis
- 4) Constant chromosome number can never be maintained from one generation to the next

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	1	3	3	3	1	3	4	1	2	3	4	1	2	3	3	4	2	1	2
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
3	4	2	3	2	3	4	2	4	1	1	3	4	2	3	1	2	4	3	3

#### Cell Division