

	Calcium with oxalate/phosphate	70 %	
	Struvite or infection stone	20 %	
	uric acid stones	5-10 %	
	amino acid cysteine stones	1-3 %	
45. The stone which can pass from kidney is under		0.5 cm	
46. The stone which cannot pass from kidney have greater than		1 cm	
47. First successful kidney transplantation took place between two twins in		1954	
48. The recipient of transplant kidney can expect to live for		5-20 years	
49. Transplant surgeon like to see HLAs matching of		3 or more HLAs	
50. The number of Human Leucocyte Antigens (HLAs) in humans are		6	
51. The temperature of structures below the skin and subcutaneous tissue		36.4 – 37.3 °C	
52. Heat is lost from body in process like conduction, convection and		Radiation (50%),	

Chapter No.16 SKELETON AND MUSCLES

1. Osteoblast produce a matrix which is mainly composed of	Type I collagen
2. The composition of organic material in matrix in bone cells	30%
3. The composition of inorganic material in matrix in bone cells	70%
4. Matrix is composed of collagen (90%) and	Glycoproteins (10%)
5. Bone matrix contain	Type I collagen
6. Cartilages mostly contain	Type II collagen
7. The number of bones in babies are	350
8. The number of bones in adult stage are	206
9. The number of bones in skull	22
10. The number of vertebrae in human	33
11. Arthritis is leading cause over the age of	65
12. For simple fracture the healing time is	6-8 weeks
13. Bony callus formation continues until a firm union is formed	About 2 months later
14. The total no of muscles in human are	650
15. The muscles fibres are cylindrical, unbranched and with diameter	Of 10-100 µm
16. The diameter of muscle fibre is	10-100 µm
17. The diameter of myofibrils is	1-2 µm
18. The energy utilized for muscular contraction is	35%
19. In the spore form clostridium tetani can remain infectious for	40 years

Round yellow	Round green	Wrinkled yellow	Wrinkled green
9	3	3	1

Independent assortment of gene was studied by Mendel in	1865
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If male plant is Pp and female plant is Pp, the probability of heterozygous plant are

- product rule → $\frac{1}{4}$
- Sum rule → $\frac{1}{2}$

When Corren crossed two pink flowers the result was:

Red flower	Pink flower	White flower
1	2	1

Blood group system was discovered at the university of the Karl Landsteiner in	1901
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ABO blood group system is encoded by the single polymorphic gene "I" on	Chromosomes 9
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ABO blood type	Genotype
A	$I^A I^A, I^A i$
B	$I^B I^B, I^B i$
AB	$I^A I^B$
O	ii

The major types of blood group systems are	30
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The minor blood group systems(rare blood types) are	More than 200
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Rh blood type	Rh factor or antigen	Anti Rh antibodies	Donors	Genotypes
Rh ⁺	Present	Absent	Rh ⁺ / Rh ⁻	DD / Dd
Rh ⁻	Absent	Present	Only Rh ⁺	dd

The antigen of Rh was discovered in the Rhesus monkey by	Landsteiner in 1930s
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The Rh blood group system currently consist of	50 defined blood groups
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The more common of Rhesus blood groups are	D, C, c, E & e
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The commonly-used terms Rh factor, Rh positive and Rh negative refer to the	D antigen only
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ABO blood group system are controlled by a dominant secretor gene	"Se" on chromosomes 19
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Rh blood group system is encoded by three genes C, D & E which occupy	2 tightly linked loci
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22

A chance that a man will inherit the colour blind trait from a carrier mother is

50%

Chapter No.23 CHROMOSOMES AND DNA

Questions	Answers																		
Gregor Mendel's "heredity factors" were purely an abstract concept when he proposed their existence in	1865																		
<table><tr><th>Species</th><th>Pairs of chromosomes</th></tr><tr><td>Penicillium</td><td>1</td></tr><tr><td>Ferns</td><td>500</td></tr></table>		Species	Pairs of chromosomes	Penicillium	1	Ferns	500												
Species	Pairs of chromosomes																		
Penicillium	1																		
Ferns	500																		
A haploid cell may be: • Monoploid → one set • Diploid → two sets • Triploid → three sets																			
<table><tr><th>Species</th><th>Somatic number</th><th>Haploid</th><th>Monoploid (n)</th></tr><tr><td>Human</td><td>46 (2n)</td><td>23 (n)</td><td>23</td></tr><tr><td>wheat</td><td>42 (6n)</td><td>21 (n)</td><td>7</td></tr></table>		Species	Somatic number	Haploid	Monoploid (n)	Human	46 (2n)	23 (n)	23	wheat	42 (6n)	21 (n)	7						
Species	Somatic number	Haploid	Monoploid (n)																
Human	46 (2n)	23 (n)	23																
wheat	42 (6n)	21 (n)	7																
Generally chromosomes are made of: • DNA (40%) • Proteins (60%)																			
Each chromatid has	One DNA molecule																		
An average size of human chromosomes are	5 cm long																		
The number of nucleotides in DNA are about	140 million																		
During S phase of cell cycle DNA and histone are completely	Disorganized																		
The organization of chromosomes occur in four levels;																			
<table><tr><th>S.N</th><th>Level</th><th>Thickness and diameter</th></tr><tr><td>1</td><td>DNA</td><td>2 nm thick</td></tr><tr><td>2</td><td>Nucleosome string</td><td>10 nm thick</td></tr><tr><td>3</td><td>Chromatin fiber/ solenoid</td><td>30 nm thick</td></tr><tr><td>4</td><td>Super coil</td><td>200 nm diameter</td></tr><tr><td>5</td><td>Chromatid</td><td>700 nm diameter</td></tr></table>		S.N	Level	Thickness and diameter	1	DNA	2 nm thick	2	Nucleosome string	10 nm thick	3	Chromatin fiber/ solenoid	30 nm thick	4	Super coil	200 nm diameter	5	Chromatid	700 nm diameter
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200 nucleotides wrap twice around the core of histone	Nucleosome																		