

Part-III

[illegible]

11	a)Down's Syndrome b)45A+XX or 45A+XY	1 1
12	Arrange in the following order c-----e---f----a----d-----b	2
13	<u>Homologous organs</u> Homologus organs are organs having same structure and origin but different functions. This phenomenon is called homology. such organs are developed due to divergent evolution. (any one example) Eg;1) whales, bats, Cheetah and human (all mammals) share similarities in the pattern of bones of forelimbs Eg;2) the thorn and tendrils of <i>Bougainvillea</i> and <i>Cucurbita</i> represent homology Eg;3) vertebrate hearts or brains <u>Analogous organ</u> Organs having same function but different structure and origin. This phenomenon is called Analogy. Such organs are developed due to Convergent evolution (any one example) Eg;1) Wings of butterfly and of birds Eg;2) the eye of the octopus and of mammals Eg;3) the flippers of Penguins and Dolphins. Eg;4) Sweet potato (root modification) and potato (stem modification)	2
14	Physical barrier, physiological barrier, cellular barrier, cytokine barrier	2
15	a) <u>I)capping</u> : It is the addition of an unusual nucleotide (Methyl guanosine triphosphate) to the 5' end of hnRNA <u>ii)Exon</u> : It is the coding sequence in hnRNA <u>iii)Introns</u> : It is the non-coding sequence in hnRNA <u>IV)RNA Splicing</u> : It is the process by which Introns (Non coding sequences) are removed and Exons are join together in a defined order to form functional mRNA b) The RNA Produced as a result of transcription in Eukaryotes contains both Exons (Coding sequences) and Introns (non coding sequences),such RNA are non functional. Such RNA is called hnRNA (Heterogenous nuclear RNA) mRNA contains only coding sequence. hnRNA is called precursor of mRNA	0.5 0.5 0.5 0.5 1
16	a)It is the a structural and functional unit between developing embryo (foetus) and maternal body .-Placenta b) human chorionic gonadotropin (hCG), human placental lactogen (hPL), estrogens, progestogens. c) 1. The placenta facilitate the supply of oxygen and nutrients to the embryo 2. it helps in the removal of carbon dioxide and excretory/waste materials produced by the embryo.	1 1 1
17	a-Barrier method b-IUDs c-Vasectomy d-Lactational amenorrhea /Periodic abstinence e-Cervical cap/ vault/ Diaphragm f-Medicated IUDs	0.5*6=3
18	a)Females produce two /different types of gametes b)ZZ-ZW mechanism c) XX-XY Example= Man , Drossophila XX-XO Example = Insects Haplo-Diploidy Example Honey Bee	1 1 1