Embryo Stage ?Vernix caseosa, fatty, cheese like secretion of the fetal sebaceous glands, covers the skin to protect it from constant exposure to amniotic fluid.The embryonic disk develops three layers (germ layers): *Ectoderm *Mesoderm *Endoderm 9.Three cell layers .1 Ectoderm= outer .2 Mesoderm= middle .3 Endoderm= inner Ecto= Skin & nervous Meso= Muscles Bones Endo= Digest.E m b r y o g e n e s i s Fertilization Cleavage Oocyte (n) Zygote (2n) 2-cell stage 4-cell stage Sperm cell (n) Morula Blastocyst G a m e t o g e n e s i s Ovary Testis Late week 3 Early week 3 Birth Week 4 Gastrulation Week 8 Week 5 Organogenesis ?S k i n -- Spinal cord Tail e n d A m n i o n - Chorionic villi A m n i o t i c Connecting fluid s t a l k Digestive t r a c t H e a r t C h o r i o n B r a i n Yolk s a c E n d o d e r m E c t o d e r m M e s o d e r m *Endoderm ?The outer cells of the morula secrete fluid, creating a sac of cell (the blastocyst) that has an inner cell mass placed off-center within the sac ?The outer layer of blastocyst cells develops into placenta and fetal membranes.The uterine lining is thick in the upper uterus preventing the placenta from attaching so deeply that it does not easily detach after birth.The upper uterus is richly supplied with blood for optimal fetal gas exchange and nutrition.The morula enters the uterus about 3 to 4 days after conception, it stays in the uterus another 2 to 4 days before beginning implantation.The external genitalia begin to differentiate, but male and female characteristics are not distinct until after the 10th week.Blood formation occurs primarily in the liver during the 9th week but shifts to the spleen by the end of the 12 week.Both vernix and lanugo hair diminish as the fetus reaches term.A sperm penetrates the egg and conception occurs.The zygote divides into 2 cells, then 4, then 8cells while in the fallopian tube.The inner cell mass of the blastocyst develops into the fetus (embryo).Maturation Copyright (C) The McGraw-Hill Companies , Inc.Embryonic structures continue developing during implantation.Formation of the placenta Second week: Implantation is complete by the end of the 2nd week.The most growth occurs in the trophoblast, which eventually become the fetal part of the placenta.Basic structures of all major body organs are completed during the embryonic period.Bladder Copyright (C) The McGraw-Hill Companies, Inc.Lining of gastrointestinal & respiratory tracts.Tonsils, thyroid, parathyroid, liver, pancreas.Lining of urinary bladder and urethra ?The neural tube completes closure during 4th week.The first fetal movement begin but are too slight for the mother to detect.Fetal movement feel like fluttering or butterflies.??????????????????3.????????????

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