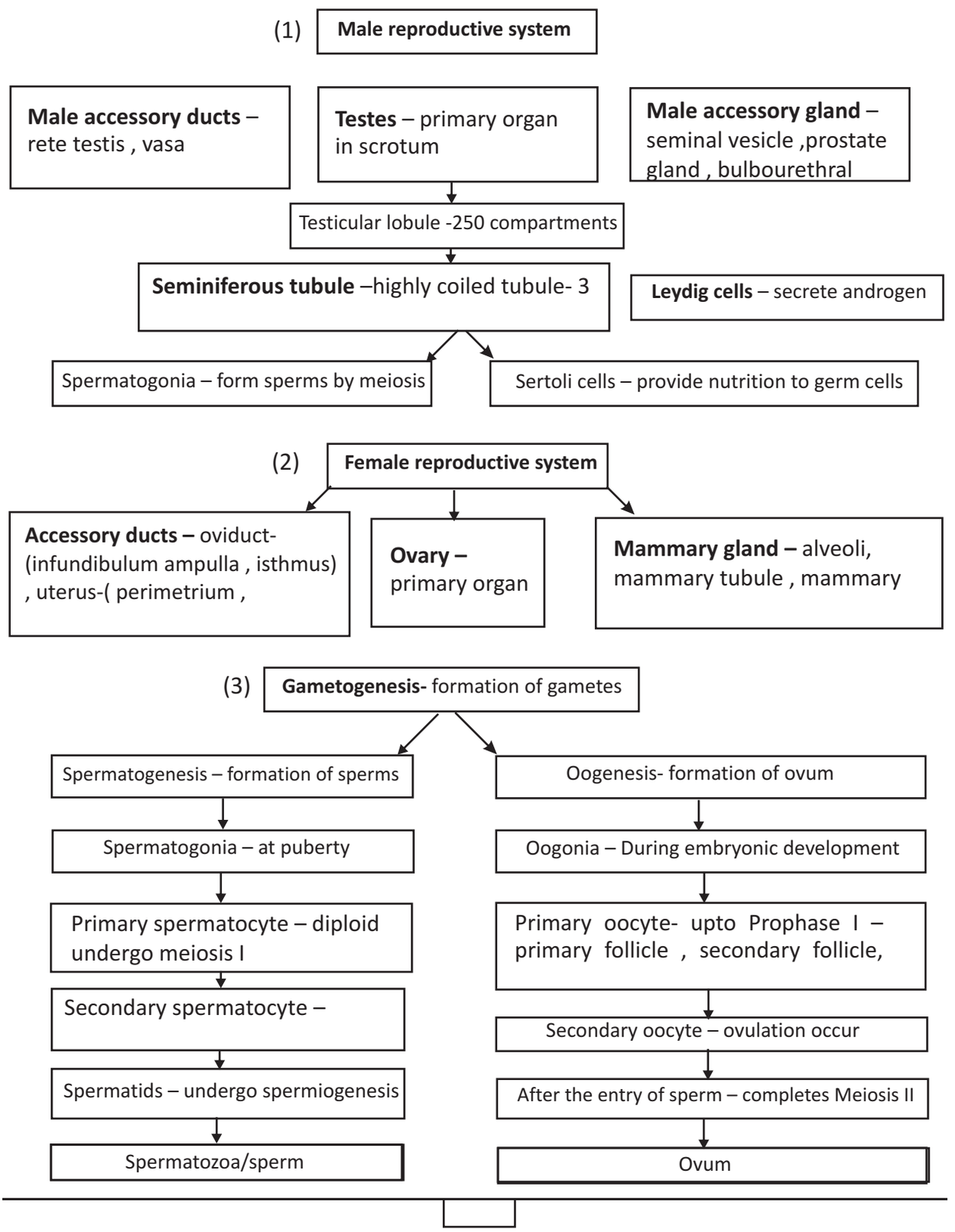
UNIT VI CHAPTER 3: HUMAN REPRODUCTION
(KEY POINTS)

S.NO	Term	Explanation
1	Spermatogenesis	The immature male germ cells produce sperms that begins at puberty (Production of sperm)
2	Spermiogenesis	The process of transformation of spermatids into sperm
3	Spermiation	Release of sperms from seminiferous tubule
4	Oogenesis	Process of formation of a mature female gamete initiated during embryonic development
5	Ovulation	The process during which the Graafian follicle ruptures to release the secondary oocyte (ovum) from the ovary
6	Menarche	The first menstruation that begins at puberty (Starting of first menstrual flow in females)
7	Menstrual cycle	Cycle of events starting from one menstruation till the next one after every 28 / 29 days
8	Menopause	Ceasation of menstrual cycle around 50 years of age
9	Cleavage	The mitotic division the zygote undergoes when it moves toward uterus and forms blastomeres
10	Implantation	Embedding of blastocyst in the endometrium of the uterus leads to pregnancy
11	Parturition	Vigorous contraction of the uterus at the end of pregnancy causing expulsion/delivery of the foetus (child birth)
12	Foetal ejection reflex	Mild uterine contractions induced by the signals for parturition from the fully developed foetus and the placenta
13	Lactation	The process by which the mammary gland start producing milk
14	GnRH	Gonadotropin releasing hormone
15	LH	Luteinising hormone
16	FSH	Follicle stimulating hormone
17	hCG	Human chorionic gonadotropin
18	hPL	Human placental lactogen

CHAPTER 3: HUMAN REPRODUCTION
(FLOW CHART)



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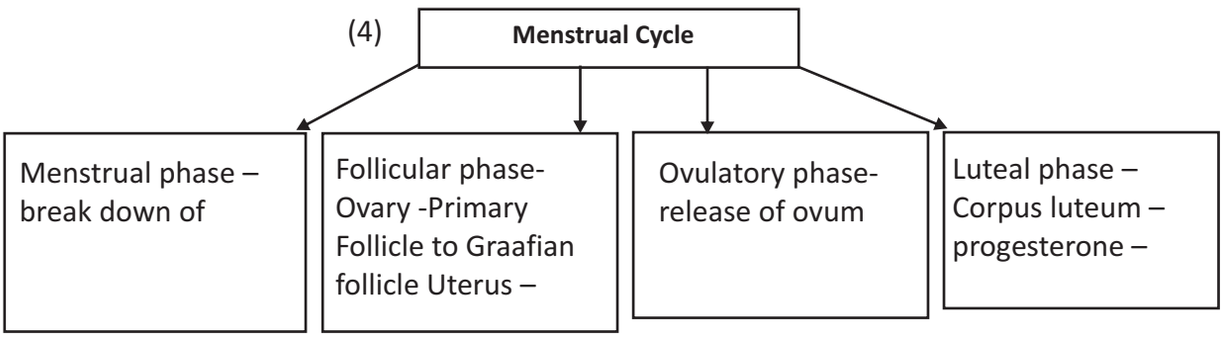
Menstrual Cycle
Menstrual phase – break down of
Follicular phase- Ovary -Primary Follicle to Graafian follicle Uterus –
Ovulatory phase- release of ovum
Luteal phase – Corpus luteum – progesterone –

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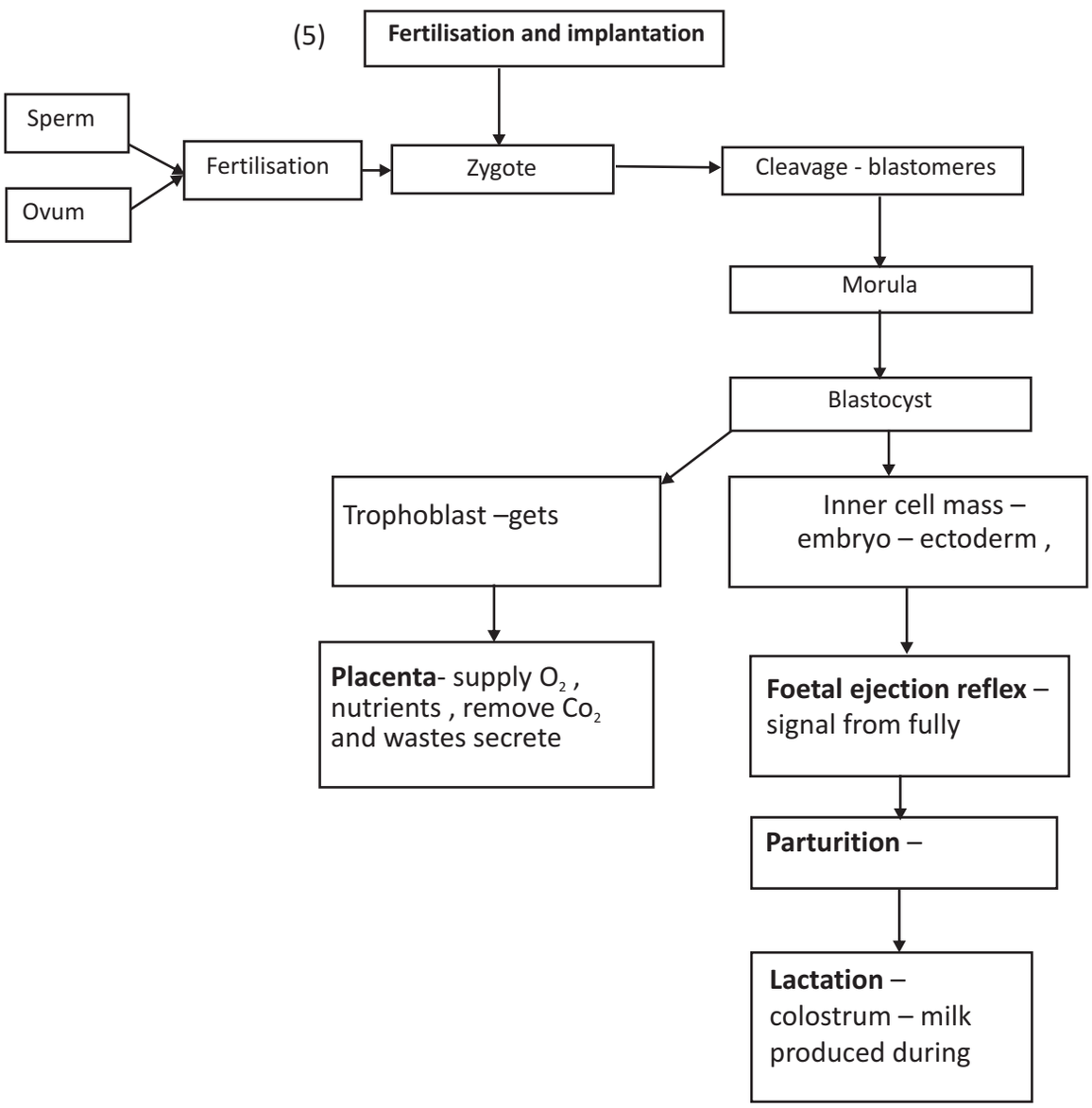
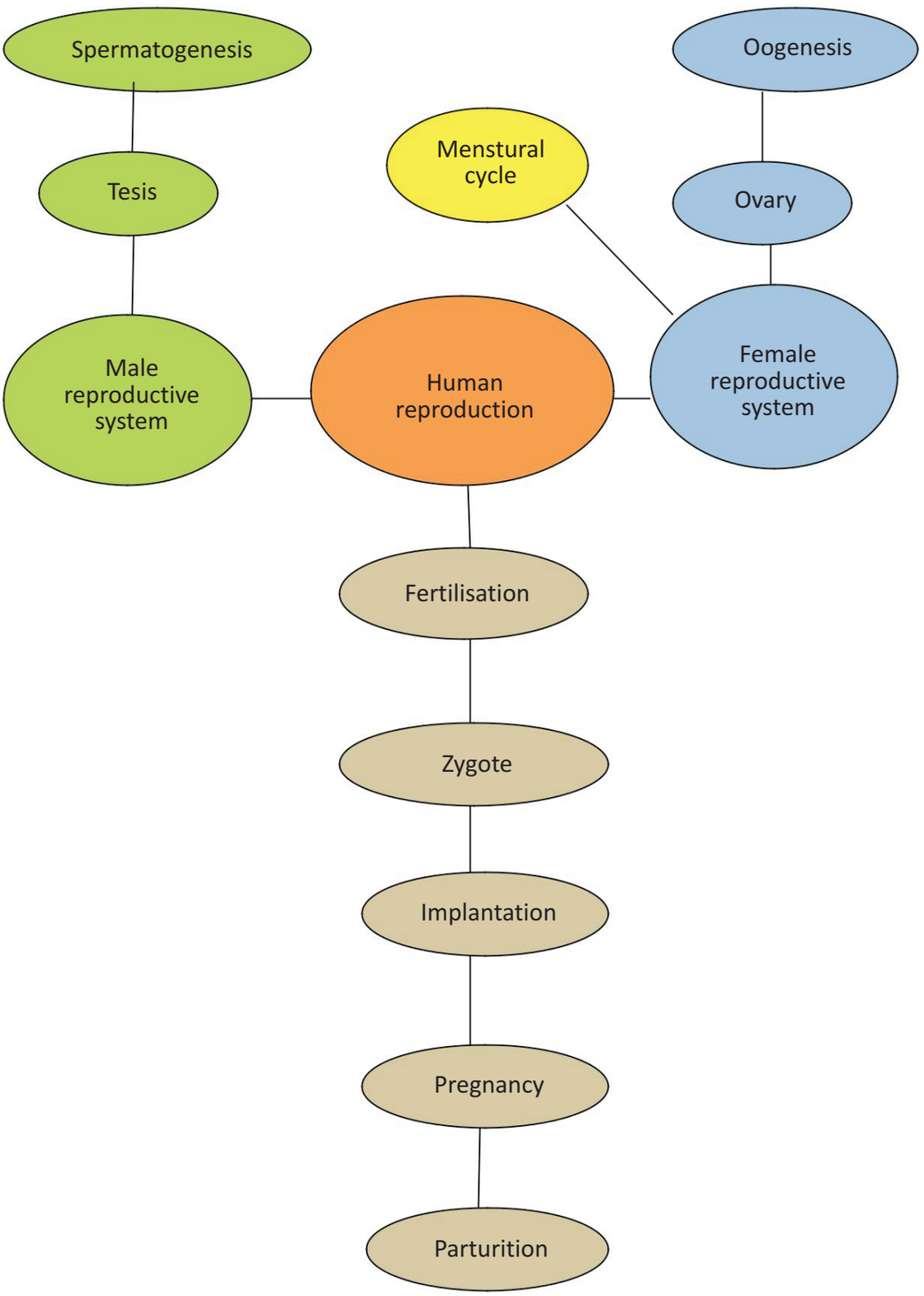

Fertilisation and implantation
Sperm
Ovum
Fertilisation
Zygote
Cleavage - blastomeres
Morula
Blastocyst
Trophoblast –gets
Inner cell mass – embryo – ectoderm ,
Placenta- supply O_2 , nutrients , remove Co_2 and wastes secrete
Foetal ejection reflex – signal from fully
Parturition –
Lactation – colostrum – milk produced during

CHAPTER : 3 HUMAN REPRODUCTION
(CONCEPT MAP)



CHAPTER : 3 HUMAN REPRODUCTION (QUESTION BANK)

1. Name the cells which secrete androgens
2. What does the head of a sperm consists of ?
3. Name the structure which secretes progesterone.
4. Name the structures which secrete estrogen .
5. Name the site of fertilization in human beings .
6. What is the main function of Sertoli cells ?
7. Name the outermost layer of the blastocyst
8. What promotes completion of second meiotic division in oogenesis ?
9. Testes normally remain suspended in scrotum in mammals. Why?
10. How many spermatozoa will be produced from 100 primary spermatocytes and how many ova will be produced from 100 primary oocytes?
11. Name the three layers of embryo that give rise to all tissues and also name the cells which have the potency to give rise to all the tissues and organs.
12. What is oogenesis? Where does it occur?
13. What is ovulation? What happens to Graafian follicle after ovulation?
14. What is colostrum? What is its importance?
15. Draw a labeled diagram of the following and label six parts
    i) T.S. of a testes ii) T.S. of an ovary iii) Sperm iv) Ovum .
    v) Embryo development (vi) Female reproductive system
16. Mention any three differences between spermatogenesis and oogenesis.
17. Differentiate between Leydig cells and Sertoli cells with reference to their location in the organ and their function
18. What is parturition? How is it induced? Which hormones are involved in induction of parturition?
19. What is seminiferous tubule? Name the various types of cells present in it and explain its function.
20. Explain different phases of spermatogenesis with schematic representation.
21. Explain different phases of oogenesis with schematic representation
22. Name the glands associated with male reproductive organs and state their functions.
23. Explain the various phases of menstrual cycle with reference to changes in ovary and uterus and hormonal cycle.
24. Explain the process of fertilization.
25. Explain the stages of embryo development from fertilization to implantation.
26. Draw a diagrammatic presentation of various events during a menstrual cycle.
27. What is placenta? What is its role? Justify Placenta as an endocrine tissue.
28. What are the main features of embryonic development at various months of pregnancy?
29 Women are being blamed for giving birth to a female child. Is it correct to say that the sex of the child is determined by the woman and not by the man? Explain

CHAPTER. 3 : HUMAN REPRODUCTION IN
(MARKING SCHEME)

Q.NO	Answer	Marks Allotted
1	Leydig cells	1
2	Haploid nucleus , acrosome	½ x 2
3	Corpus luteum	1
4	Ovarian follicles	1
5	Ampullary-isthmic junction of fallopian tube	1
6	Provide nutrition to germ cells	1
7	Trophoblast	1
8	Entry of sperm into cytoplasm of the ovum through zona pellucida membrane and plasma	½ x 2
9	Scrotum helps in maintaining low temperature , necessary for spermatogenesisc`	1 x 2
10	400 spermatozoa , 100 eggs	1 x 2
11	Ectoderm , endoderm , mesoderm , stem cells	½ x 4
12	Formation of mature female gamete , Ovary	1 x 2
13	The release of secondary oocyte from ovary , transforms into graafian follicle	1 x 2
14	Milk produced during initial days of lactation , antibodies to give resistance	1 x 2
15	Diagram – six parts	6 x ½
16	At puberty / embryonic development ,four sperms / one egg ,equal division / unequal division	1 x 3
17	Leydig – interstitial space , androgen , Sertoli – seminiferous tubule , nutrition to germ cells	½ x 4+1
18	Delivery of foetus , foetal ejection reflex , oxytocin	1 x 3
19	Highly coiled in testicular lobule ,male germ cells sertoli cells , sperm formation provide nutrition	1 x 5
20	Spermatogonia – primary spermatocyte – secondary spermatocyte – spermatid – sperm	1 x 5

21	Oogonia- primary oocyte , primary secondary tertiary graafian follicles – secondary oocyte – ovum	1 x 5
22	Paired seminal vesicles , a prostate gland paired bulbourethral gland , seminal plasma rich in fructose calcium enzymes , bulbourethral lubrication of penis	1 x 5
23	Menstrual phase – flow follicular phase – follicular growth regeneration of endometrium Ovulation , secretary phase – corpus luteum LH ,FSH role	1 x 5
24	Sperm come s in contact with zona pellucida , block entry of additional sperms , acrosome helps in entry , completion second meiotic division second polar body , ootid , haploid nucleus of sperm fuses with ovum	10 x ½ ,
25	Zygote – cleavage , blastomeres ,morula ,blastocyst ,trophoblast , inner cell mass ,attached to endometrium , diiferentiate as embryo , impalntation	10 x ½
26	Schematic representation of menstrual cycle ovarian events , uterine events , hormones of pituitary , ovarian hormones	1 x 5
27	Structural and functional unit between foetus and mother , supply of nutrients and oxygen removal of wastes, hCG, hPL ,estrogens, progestogens	1 + 1+3
28	One month- heart , end of second month –limbs and digits , end of 12 weeks –major organ system – limbs genital organs fifth month movements ,second trimester fine hair eyelids separate eye lashes	1 x 5
29	Genuine reason	2 x 2