MECHRI Adem/biologie et physiologie de la reproduction/Semestre 2/Aspect moléculaire et cellulaire de développement/section1									
Matricule	Note	Absent	Absence Justifiée	Observation	Section	Groupe			
222234059315	5.25					section1/groupe1			
222234018713	6					section1/groupe1			
222234052805	10.5					section1/groupe1			
222234048306	8.25					section1/groupe1			
222234048020	4.75					section1/groupe1			
222234048309	10					section1/groupe1			
212134006071	9.75					section1/groupe1			
222234005606	6					section1/groupe1			
222234016313	7.75					section1/groupe1			
222234045308	3.25					section1/groupe1			
222234055016	7					section1/groupe1			
222234018904	7					section1/groupe1			
222234018611	3					section1/groupe1			
222234038601	2.25					section1/groupe1			
212134010279	4.5					section1/groupe1			
222234085109	6					section1/groupe1			
222234036702	4.75					section1/groupe1			
222234017801	2.5					section1/groupe1			
222234035803	6.5					section1/groupe1			
222234019406	2					section1/groupe1			
222234068104	7.5					section1/groupe1			
212134013464						section1/groupe1			
222234055313	6					section1/groupe1			
222234037711	1					section1/groupe1			
212134001178						section1/groupe1			
222234018814	6					section1/groupe1			

202034003120	14.25					section1/groupe1			
212134008113	1.75					section1/groupe1			
222234030401	17					section1/groupe1			
222234037105	5.25					section1/groupe1			
222234065403	2					section1/groupe1			
222234052408	2.75					section1/groupe1			
222234026715	5					section1/groupe1			
222234016119	7.25					section1/groupe1			
222234007912	9.75					section1/groupe1			
222234027915						section1/groupe1			
222234030406	2					section1/groupe1			
222234026811	11.75					section1/groupe1			
222234037313	13.25					section1/groupe1			
222234037013	12.75					section1/groupe1			
171734005282	5					section1/groupe1			
212134002962	2					section1/groupe1			
222234006903	3.25					section1/groupe1			
212134001457	6.25					section1/groupe1			
222234041017	5					section1/groupe1			
222234005803	5.25					section1/groupe1			
212134009257	5					section1/groupe1			
222234027715	7					section1/groupe1			

MECHRI Adembiologie et physiologie de la reproduction/Semestre 2/Aspect moléculaire et cellulaire de développement/groupe1									
Matricule	Note	Absent	Absence Justifiée	Observation	Section	Groupe			
222234059315	16.0				section1	groupe1			
222234018713	8.75				section1	groupe1			
222234052805	15.5				section1	groupe1			
222234048306	15.5				section1	groupe1			
222234048020	11.25				section1	groupe1			
222234048309	13.0				section1	groupe1			
212134006071	16.75				section1	groupe1			
222234005606	10.25				section1	groupe1			
222234016313	14.75				section1	groupe1			
222234045308	15.75				section1	groupe1			
222234055016	14.5				section1	groupe1			
222234018904	14.5				section1	groupe1			
222234018611	7.75				section1	groupe1			
222234038601	5.5				section1	groupe1			
212134010279	6.5				section1	groupe1			
222234085109	11.5				section1	groupe1			
222234036702	10.5				section1	groupe1			
222234017801	10.0				section1	groupe1			
222234035803	10.0				section1	groupe1			
222234019406	11.0				section1	groupe1			
222234068104	10.0				section1	groupe1			
212134013464	0.0				section1	groupe1			
222234055313	17.5				section1	groupe1			
222234037711	7.75				section1	groupe1			
212134001178	0.0				section1	groupe1			
222234018814	10.75				section1	groupe1			

202034003120	16.0				section1	groupe1			
212134008113	5.25				section1	groupe1			
222234030401	16.75				section1	groupe1			
222234037105	10.75				section1	groupe1			
222234065403	10.75				section1	groupe1			
222234052408	7.25				section1	groupe1			
222234026715	4.75				section1	groupe1			
222234016119	8.5				section1	groupe1			
222234007912	15.25				section1	groupe1			
222234027915	0.25				section1	groupe1			
222234030406	12.25				section1	groupe1			
222234026811	16.0				section1	groupe1			
222234037313	18.75				section1	groupe1			
222234037013	18.75				section1	groupe1			
171734005282	8.0				section1	groupe1			
212134002962	9.75				section1	groupe1			
222234006903	10.0				section1	groupe1			
212134001457	11.5				section1	groupe1			
222234041017	8.0				section1	groupe1			
222234005803	14.75				section1	groupe1			
212134009257	14.5				section1	groupe1			
222234027715	14.75				section1	groupe1			

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Marking scheme A

I. 1. True, 2. True, 3. False, 4. False, 5. True, 6. False (1.5 points)

II. (1)DNMT 1: c, (2)DNMT 3A, and (3)DNMT 3B: a, (4)TET): b (2 points)

III. Cadherins are cell adhesion molecules. (0.5 point)
Ensure the cohesion of the cells, which is essential for the formation of a multicellular organism and transduce biochemical signals that are essential for developmental processes. (1 point)

IV. The stability of an mRNA often depends on the length of its polyA tail a 3' and the capping on the 5'. (1 point)

V. Inner cell mass of the blastocyst: pluripotent, Zygote: totipotent (1 point)
Justification: zygote can produce the embryo and the annexe, but inner cell produce only embryo (1 point)

V. (2 points)
It functions as a repressor in the anterior part by binding to the caudal mRNA, inhibiting its translation.
It functions as a transcription factor. It enters the nuclei of embryonic cells early during cleavage and activates the hunchback gene.

VI. Pumilio protein bound at 3' end of to the hunchback messenger, it can be translated into Hunchback proteins. (1 point)

VII. nanos mutant: embryo without tail (1 point)
hunchback mutant: lack certain mouth and thoracic elements. (1 point)
Gooseberry mutant: the posterior half of each segment is replaced by an approximate mirror image of the adjacent anterior half of the segment. (1 point)

VIII.
a. Permissive interaction, the reactive tissue already possesses everything necessary for its development but requires external elements to proceed along that path. (0.75 point)
b. Instructive interaction, a signal from the inducing cell is necessary to trigger gene expression in the target cell, which is unable to differentiate without the aid of the former. (0.75 point)

IX. (1 point)
Inducer tissue : Endoderm**, Receiver tissue :** Ectoderm

X.
a. Pole A: Animal pole , Pole B: Vegetal pole (1 point)
b. (1): caudal mRNA , (2): hunchback mRNA, (3): bicoid mRNA , (4): nanos mRNA (1 point)

XI. (1.5 points)
Answer: (a), (c), (d)