

**BYJU'S Full Test for Board Term I**  
**(CBSE Grade 12)**  
**BIOLOGY QUESTIONS**

**Time: 90 Minutes**

**Max. Marks 35**

**General Instructions:**

1. The Question Paper contains three sections.
2. Section A has 24 questions. Attempt any 20 questions.
3. Section B has 24 questions. Attempt any 20 questions.
4. Section C has 12 questions. Attempt any 10 questions.
5. All questions carry equal marks.
6. There is no negative marking.

**SECTION - A**

Section – A consists of 24 questions. Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

1	<p>Primary male sex organs are placed inside a sac like structure called</p> <p>A. Foreskin            B. Scrotum            C. Rete testis            D. Mons pubis</p>	0.70										
2	<p>Match column I with column II and select the <b>correct</b> option.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Column I</th> <th style="width: 50%; text-align: center;">Column II</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">a. Periodic abstinence</td> <td style="text-align: center;">(i) Barrier methods</td> </tr> <tr> <td style="text-align: center;">b. Cervical caps</td> <td style="text-align: center;">(ii) Natural methods</td> </tr> <tr> <td style="text-align: center;">c. Coitus interruptus</td> <td></td> </tr> <tr> <td style="text-align: center;">d. Lactational amenorrhea</td> <td></td> </tr> </tbody> </table> <p>A. a, b, c-i; d-ii            B. a, c, d-i; b-ii            C. a, b-ii; c, d-i            D. a, c, d-ii; b-i</p>	Column I	Column II	a. Periodic abstinence	(i) Barrier methods	b. Cervical caps	(ii) Natural methods	c. Coitus interruptus		d. Lactational amenorrhea		0.70
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3	<p>Morula is one of the stages of embryogenesis. This stage has how many cell(s)?</p> <p>A. 8 to 16 B. 2 to 4 C. Single cell D. More than 32 cells</p>	0.70
4	<p>A woman is in the second trimester of her pregnancy. Select the option which is unlikely for this woman.</p> <p>A. Placenta is formed B. Level of hormones like cortisol, thyroxine, etc. is high in her blood C. Menstrual cycle continues as normal D. Heart sound of the foetus can be heard through a stethoscope</p>	0.70
5	<p>A contraceptive pill called 'Saheli' was developed in India. Which institute was responsible for this?</p> <p>A. CDRI B. ART C. WHO D. RCH</p>	0.70
6	<p>The human male ejaculates about 200 to 300 million sperms during a coitus of which, for normal fertility, at least how many of sperms must have normal shape, size and vigorous motility to successfully impregnate a female?</p> <p>A. 20-80 million B. 10-20 million C. 10-20 million D. 48-72 million</p>	0.70
7	<p>The structure(s) which make up the birth canal is/are</p> <p>A. Only vagina B. Vagina and cervical canal C. Only cervix D. Cervix and uterus</p>	0.70
8	<p>Choose the <b>incorrect</b> statement w.r.t. syphilis.</p> <p>A. It is a bacterial disease B. It affects the genitalia of infected people C. Even if detected early it cannot be completely cured D. It is transmitted through sexual contact, transfusion of blood or through the placenta to a foetus</p>	0.70

9	<p>Which one of the following is the <b>correct</b> match of the events occurring during menstrual cycle?</p> <ul style="list-style-type: none"><li>A. Post menstrual phase: Rapid regeneration of myometrium and maturation of Graafian follicle</li><li>B. Post ovulatory phase: Development of corpus luteum and increased secretion of progesterone</li><li>C. Menstruation phase: Breakdown of myometrium when ovum not fertilised</li><li>D. Luteal phase: LH and FSH attain peak level and sharp fall in secretion of progesterone</li></ul>	0.70
10	<p>A female has blocked oviducts but her ovaries function normally. Which infertility treatment would be most appropriate for her if she wants to get pregnant?</p> <ul style="list-style-type: none"><li>A. IVF followed by ZIFT</li><li>B. IVF followed by IUT</li><li>C. GIFT</li><li>D. AI</li></ul>	0.70
11	<p>The enzymes present in which part of the sperm helps it penetrate the ovum?</p> <ul style="list-style-type: none"><li>A. Middle piece</li><li>B. Tail</li><li>C. Acrosome</li><li>D. Neck</li></ul>	0.70
12	<p>A woman is pregnant. Due to a history of Down's syndrome in her family, she decides to check whether the foetus is affected by this syndrome. How many of these methods will clarify this?</p> <ul style="list-style-type: none"><li>a. Amniocentesis</li><li>b. IUD</li><li>c. MTP</li><li>d. ICSI</li></ul> <ul style="list-style-type: none"><li>A. One</li><li>B. Two</li><li>C. Three</li><li>D. Four</li></ul>	0.70
13	<p>Which of the given statements are <b>correct</b> w.r.t. the events included in pollen-pistil interaction?</p> <ul style="list-style-type: none"><li>(i) Germination of pollen grain.</li><li>(ii) Deposition of pollen grain on stigma.</li><li>(iii) Fertilisation of secondary nucleus by one male gamete.</li><li>(iv) Entry of pollen tube in ovule.</li></ul>	0.70

	<p>A. (i) and (iii)            B. (ii) and (iii)            C. (i), (ii) and (iii)            D. (i), (ii) and (iv)</p>	
14	<p>When an individual is affected with phenylketonuria, which of the given conversion is most likely to occur?</p> <p>A. Phenylalanine to tyrosine            B. Tyrosine to phenylalanine            C. Phenylalanine to phenylpyruvic acid            D. Glutamic acid to valine</p>	0.70
15	<p>In human population, where genotype <math>I^A i</math> represents blood group-A, <math>ii</math> represents blood group-O, <math>I^A I^B</math> represents blood group AB and <math>I^B i</math> represents blood group-B; the pattern of genetic inheritance can be termed as</p> <p>A. Polygenic and qualitative inheritance            B. Pleiotropy and incomplete dominance            C. Co-dominance and multiple allelism            D. Polygenic and quantitative inheritance</p>	0.70
16	<p>Which of the following combination of gametes, represent the <b>correct</b> sex determination pattern in birds?</p> <p>A. Sperms (A + Z); Eggs (A + Z), (A + W)            B. Sperms (A + Z); Eggs (A + Z), (A + O)            C. Sperms (A + X), (A + O); Eggs (A + X)            D. Sperms (A + X), (A + Y); Eggs (A + X)</p>	0.70

17	<p>Mr. X and Ms. Z have chromosomal disorders. Mr. X has three sex chromosomes in each cell while Ms. Z has only one sex chromosome in each cell. Identify the disorder they are suffering from:</p> <table border="1" data-bbox="272 359 1349 747"> <thead> <tr> <th></th> <th>Mr. X</th> <th>Ms. Z</th> </tr> </thead> <tbody> <tr> <td>A.</td> <td>Down's syndrome - Trisomy of chromosome 21</td> <td>Klinefelter's syndrome - Trisomy of chromosome 18</td> </tr> <tr> <td>B.</td> <td>Klinefelter's syndrome - Presence of an additional copy of X-chromosome</td> <td>Turner's syndrome - Absence of one of the X-chromosomes</td> </tr> <tr> <td>C.</td> <td>Down's syndrome - 44 + XX</td> <td>Turner's syndrome - 44 + XO</td> </tr> <tr> <td>D.</td> <td>Klinefelter's syndrome - 44 + XX</td> <td>Down's syndrome - 44 + XY</td> </tr> </tbody> </table>		Mr. X	Ms. Z	A.	Down's syndrome - Trisomy of chromosome 21	Klinefelter's syndrome - Trisomy of chromosome 18	B.	Klinefelter's syndrome - Presence of an additional copy of X-chromosome	Turner's syndrome - Absence of one of the X-chromosomes	C.	Down's syndrome - 44 + XX	Turner's syndrome - 44 + XO	D.	Klinefelter's syndrome - 44 + XX	Down's syndrome - 44 + XY	0.70
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18	<p>Which of the following statements are <b>correct</b> w.r.t. characteristics of wind pollinated flowers?</p> <p>(i) Flowers packed into an inflorescence.  (ii) Presence of nectaries.  (iii) Pollen grains are surrounded by mucilaginous covering.  (iii) Flowers have large feathery stigma.</p> <p>A. (i) and (iii)  B. (i) and (ii)  C. (i) and (iv)  D. (ii) and (iii)</p>	0.70															
19	<p>In <i>lac</i> operon, which of the given provides attachment site for RNA polymerase?</p> <p>A. Regulator gene  B. Operator  C. Promoter  D. Structural gene</p>	0.70															
20	<p>Which of the given is <b>correct</b> about features of human genome?</p> <p>A. Repeated sequences make up very large portion of the human genome  B. The average gene consists of 30000 bases  C. More than 50 percent of the genome codes for proteins  D. Chromosome Y has most genes (2968) and 1 has the fewest (231)</p>	0.70															

21	In <i>E.coli</i> , the <i>lac</i> operon gets switched off when A. Inducer molecule binds to repressor B. Repressor protein binds to operator C. RNA polymerase binds to operator D. Lactose is present	0.70																				
22	Double fertilization is a unique event in flowering plants. It results in A. Fusion of two polar nuclei in embryo sac B. Entry of pollen tube in embryo sac C. Degeneration of antipodal and synergids D. Production of zygote and primary endosperm nucleus (PEN)	0.70																				
23	Consider the given schematic representation of central dogma and select the <b>correct</b> option w.r.t. labelled processes. <div style="text-align: center;"> <p style="text-align: center;">X <math>\text{DNA} \xrightarrow{\text{A}} \text{mRNA} \xrightarrow{\text{B}} \text{protein}</math></p> </div> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Process-A</th> <th>Process-B</th> <th>Process-X</th> </tr> </thead> <tbody> <tr> <td>A.</td> <td>Replication</td> <td>Transcription</td> <td>Translation</td> </tr> <tr> <td>B.</td> <td>Transcription</td> <td>Replication</td> <td>Translation</td> </tr> <tr> <td>C.</td> <td>Translation</td> <td>Replication</td> <td>Transcription</td> </tr> <tr> <td>D.</td> <td>Transcription</td> <td>Translation</td> <td>Replication</td> </tr> </tbody> </table>		Process-A	Process-B	Process-X	A.	Replication	Transcription	Translation	B.	Transcription	Replication	Translation	C.	Translation	Replication	Transcription	D.	Transcription	Translation	Replication	0.70
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A.	Replication	Transcription	Translation																			
B.	Transcription	Replication	Translation																			
C.	Translation	Replication	Transcription																			
D.	Transcription	Translation	Replication																			
24	Which of the given acts as initiator codon? A. AUG B. UAA C. UAG D. UGA	0.70																				

### SECTION - B

Section - B consists of 24 questions (Sl. No.25 to 48). Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

	<p>Question No. 25 to 28 consists of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:</p> <p>A. Both A and R are true and R is the correct explanation of A  B. Both A and R are true and R is not the correct explanation of A  C. A is true but R is false  D. A is false but R is true</p>	
25	<p><b>Assertion:</b> A mature anther is tetrasporangiate.  <b>Reason:</b> Each anther is a four sided tetragonal structure consisting of four microsporangia located at corners, two in each lobe.</p>	0.70
26	<p><b>Assertion:</b> Six different genotypes are possible for ABO blood groups in human population.  <b>Reason:</b> ABO blood groups in human population are controlled by gene I which has three alleles.</p>	0.70
27	<p><b>Assertion:</b> According to the 2011 census report, the population of India is increasing rapidly at a rate of 20/1000/year.  <b>Reason:</b> This is due to decline in mortality rates of mothers as well as infants and the increase in the number of individuals in the reproductive age group.</p>	0.70
28	<p><b>Assertion:</b> Presence of hymen is a definitive indicator of virginity or lack of sexual intercourse in women.  <b>Reason:</b> Hymen can be torn by coitus as well as other factors.</p>	0.70
29	<p>During transcription in eukaryotes, RNA polymerase I synthesizes</p> <p>(i) 5.8S rRNA                                  (ii) hnRNA  (iii) 28S rRNA                                  (iv) tRNA</p>	0.70

	<p>A. (i) and (iii)          B. (ii) and (iv)          C. (iii) and (iv)          D. (i) and (iv)</p>	
30	<p>Which of the given present in an embryo sac of an angiosperm produces a triploid tissue after fertilization?</p> <p>A. Egg          B. Central cell          C. Synergids          D. Antipodal cells</p>	0.70
31	<p>mRNA is called as messenger RNA because</p> <p>A. It constitutes 5% of total RNA in cell          B. It is longest RNA          C. It carries genetic information provided by DNA          D. It has structural and catalytic role during translation</p>	0.70
32	<p>How many traits of flower w.r.t. <i>Pisum sativum</i> were selected by Mendel for carrying out hybridisation experiment?</p> <p>A. Two          B. One          C. Six          D. Four</p>	0.70
33	<p>In which of the given plants, autogamy is prevented but not geitonogamy?</p> <p>A. Castor and <i>Vallisneria</i>          B. <i>Vallisneria</i> and Papaya          C. <i>Vallisneria</i> and Maize          D. Castor and Maize</p>	0.70
34	<p>During seed germination, micropyle</p> <p>A. Provides protection to embryo          B. Facilitates entry of O<sub>2</sub> and water into the seed          C. Develops from outer integument of ovule          D. Develops from inner integument of ovule</p>	0.70



35	In Mendelian dihybrid cross, out of 80 individuals obtained in F <sub>2</sub> generation, how many are pure homozygous for both the characters? A. 10 B. 5 C. 20 D. 8	0.70
36	Enumerate the number of nucleosomes present in the nucleus of diploid eukaryotic cell which possess $6.6 \times 10^9$ bp. A. $3.3 \times 10^7$ B. $6.6 \times 10^9$ C. $3.3 \times 10^9$ D. $6.6 \times 10^7$	0.70
37	The process of translation of mRNA to proteins begins when A. Small ribosomal subunit encounters the mRNA B. tRNA is charged C. There is a formation of peptide bond between first two amino acids D. Amino acids are activated	0.70
38	Which of the following cross in pea plant is considered to be a test cross? A. Terminal flowered plant × Terminal flowered plant B. Green pod plant × Yellow pod plant C. Tall plant × Tall plant D. White flowered plant × White flowered plant	0.70
39	Select the <b>odd</b> one w.r.t. IUDs. A. Lippes loop B. Multiload 375 C. Progestasert D. Implant	0.70
40	When the uterine contractions are not strong enough for parturition, doctors booster the parturition process by injecting one or more of the following. Choose the <b>correct</b> number of the given options. a. Progesterone b. Oxytocin c. Prolactin d. hCG e. Estrogen f. Progestogen	0.70

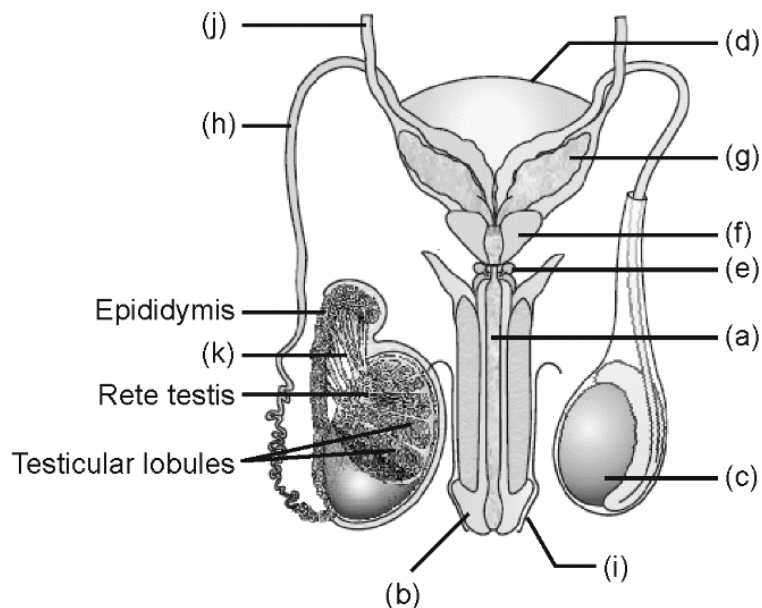
	<p>A. One B. Two C. Four D. Six</p>															
41	<p>Select the correct option and complete the analogy. Oogonia : Mitosis :: Primary spermatocyte : _____</p> <p>A. Mitosis B. Differentiation C. First meiotic division D. Second meiotic division</p>	0.70														
42	<p>Match column I and column II and select the <b>correct</b> option.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Column I</th> <th style="text-align: center;">Column II</th> </tr> </thead> <tbody> <tr> <td>a. Sertoli cells</td> <td>(i) Homologous to glans penis</td> </tr> <tr> <td>b. Infertile couples</td> <td>(ii) Formation of spermatozoa</td> </tr> <tr> <td>c. Clitoris</td> <td>(iii) Nourish sperms</td> </tr> <tr> <td>d. Spermiogenesis</td> <td>(iv) ART</td> </tr> <tr> <td></td> <td>(v) IUD</td> </tr> <tr> <td></td> <td>(vi) Spermatids to spermatozoa</td> </tr> </tbody> </table> <p>A. a(ii), b(v), c(iii), d(iv) B. a(iii), b(iv), c(i), d(vi) C. a(iii), b(iv), c(ii), d(i) D. a(ii), b(v), c(vi), d(iv)</p>	Column I	Column II	a. Sertoli cells	(i) Homologous to glans penis	b. Infertile couples	(ii) Formation of spermatozoa	c. Clitoris	(iii) Nourish sperms	d. Spermiogenesis	(iv) ART		(v) IUD		(vi) Spermatids to spermatozoa	0.70
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43	<p>A new born baby lost his mother at birth. He was fed cow's milk from day one. As the child grew up it was observed that its immune system was weak. This was due to</p> <p>A. Cow's milk lacked nutrients B. No mother to care for the baby C. Mother's milk is rich in lipids D. Baby did not get colostrum and mother's milk</p>	0.70														
44	<p>Select the male sterilisation technique from the following.</p> <p>A. Tubectomy B. Vasectomy C. ET D. Insemination</p>	0.70														

45	<p>Select the options which would be applicable to both human ovaries as well as adrenal glands.</p> <p>a. Endocrine in function.  b. Outer part is cortex and inner part is medulla.  c. Produce catecholamines.  d. Present in both males and females.</p> <p>A. a and b  B. a, b and c  C. b and c  D. a, b and d</p>	0.70
46	<p>Mammary ampulla is formed by the joining of several</p> <p>A. Mammary lobes  B. Mammary glands  C. Alveoli  D. Mammary ducts</p>	0.70
47	<p>Select the <b>incorrect</b> statements from the following.</p> <p>a. The process of oogenesis starts during puberty in females.  b. When the blastocyst gets implanted in the uterus, it is known as an ectopic pregnancy.  c. Eyelashes of the foetus are formed at the end of first trimester.  d. Bulbourethral glands are male accessory glands.</p> <p>A. b and c only  B. a, c and d  C. a, b and c  D. c and d</p>	0.70
48	<p>Select the contraceptives from the following which can be self administered and does not need a professional.</p> <p>a. LNG-20  b. Diaphragms  c. Condoms  d. Vaults  e. Tubectomy</p> <p>A. a, b, d  B. b, c, d  C. a, e  D. b, c, d, e</p>	0.70

### SECTION - C

Section-C consists of **one case** followed by 6 questions linked to this case (Q.No.49 to 54). Besides this, 6 more questions are given. Attempt any 10 questions in this section. The first attempted 10 questions would be evaluated.

**Case**



A dead body was found by the police and it was brought for post-mortem. Given above is the diagram of reproductive system as observed by the medical students. Answer the questions given with the help of the diagram.

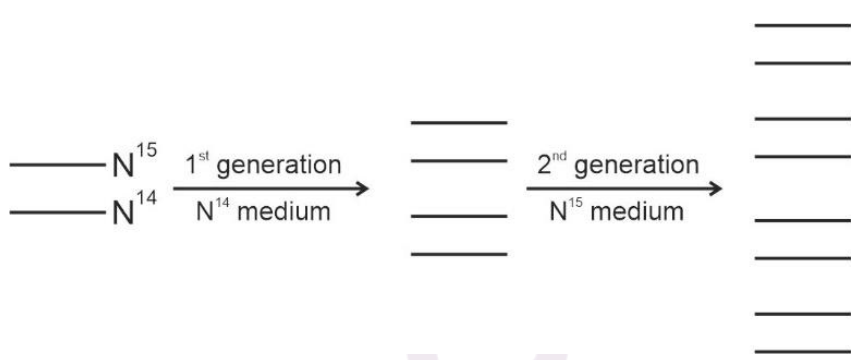
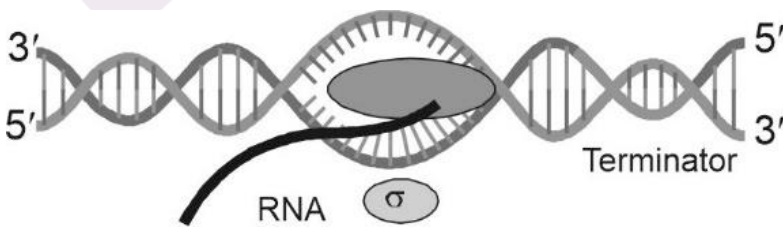
49	<p>The structure 'a' acts as a passage for</p> <p>A. Urine only</p> <p>B. Urine or semen, at a time</p> <p>C. Semen only</p> <p>D. Sperms and urine, at a time</p>	0.70
50	<p>The absence of which of the given options would make a man sterile due to absence of spermatogenesis?</p> <p>A. b</p> <p>B. d</p> <p>C. g</p> <p>D. c</p>	0.70

51	<p>'The testes are situated outside the abdominal cavity within a pouch called scrotum'. In some cases the testes fail to descend during the foetal development. Which of the following will be true for the individual?</p> <p>A. His body will produce sperms like a normal man          B. The temperature regulation required for spermatogenesis will get affected          C. This can be treated by vitamin supplements          D. Sperms will be produced without tail</p>	0.70										
52	<p>Match column I with column II and select the <b>correct</b> option.</p> <table border="1" data-bbox="375 600 1252 779"> <thead> <tr> <th>Column I</th> <th>Column II</th> </tr> </thead> <tbody> <tr> <td>a. e</td> <td>(i) Loose fold of skin covering glans penis</td> </tr> <tr> <td>b. h</td> <td>(ii) Its secretion lubricates penis</td> </tr> <tr> <td>c. f</td> <td>(iii) Unpaired male accessory gland</td> </tr> <tr> <td>d. i</td> <td>(iv) Tied up as a sterilisation procedure</td> </tr> </tbody> </table> <p>A. a(ii), b(iv), c(iii), d(i)          B. a(iii), b(i), c(ii), d(iv)          C. a(iii), b(iv), c(i), d(ii)          D. a(ii), b(iv), c(i), d(iii)</p>	Column I	Column II	a. e	(i) Loose fold of skin covering glans penis	b. h	(ii) Its secretion lubricates penis	c. f	(iii) Unpaired male accessory gland	d. i	(iv) Tied up as a sterilisation procedure	0.70
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53	<p>Descriptors such as 'round and small' are used for which exocrine, paired male accessory gland.</p> <p>A. c          B. g          C. e          D. f</p>	0.70										
54	<p>Fill the blanks in following statements and choose the <b>correct</b> option.</p> <p>(i) _____ has Leydig cells which produce androgens.          (ii) Cancer that affects _____ is common in males.          (iii) Ejaculatory duct carries sperms from testis and fluid from _____.          (iv) Bullocks are docile in comparison to bulls due to the removal of _____.</p> <p>A. i-e, ii-c, iii-g, iv-b          B. i-h, ii-c, iii-e, iv-a          C. i-c, ii-f, iii-g, iv-c          D. i-c, ii-b, iii-f, iv-i</p>	0.70										



	(i)	(ii)	(iii)	(iv)	
A.	Nucleotide	Phosphodiester bond	Hydrogen bond	Nucleoside	
B.	Nucleoside	Hydrogen bond	Phosphodiester bond	Nucleotide	
C.	Nucleoside	Phosphodiester bond	Hydrogen bond	Nucleotide	
D.	Nucleotide	Hydrogen bond	Phosphodiester bond	Nucleoside	

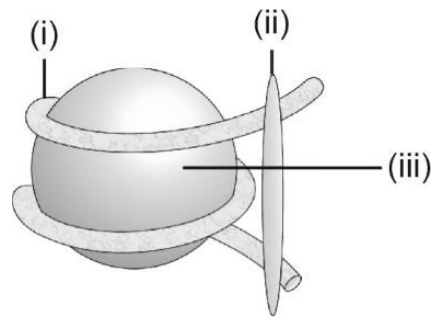
  

58	<p>An <i>E. coli</i> with hybrid DNA was grown initially in a medium containing <math>^{14}\text{NH}_4\text{Cl}</math> for one generation, then the cells were transferred to a medium with <math>^{15}\text{NH}_4\text{Cl}</math> for second generation. In each generation there is replication of DNA.</p>  <p>Which of the following conclusions can be drawn on the basis of above experiment?</p> <p>A. 25% light DNA molecules are obtained in second generation  B. Total heavy DNA obtained is 25% in first generation  C. Light, heavy and hybrid DNA are obtained in equal proportion in both generations  D. Hybrid and light DNA are obtained in equal proportion in first generation</p>	0.70
59	<p>Which cellular process is shown below?</p>  <p>A. DNA replication  B. Transcription - Initiation  C. Transcription - Elongation  D. Transcription - Termination</p>	0.70

60

A nucleosome is shown in the diagram given below.

0.70



	(i)	(ii)	(iii)
A.	DNA	H1 histone	Histone octamer
B.	H1 histone	DNA	Histone octamer
C.	DNA	Histone octamer	H1 histone
D.	Histone octamer	DNA	H1 histone