

SECOND YEAR HIGHER SECONDARY EXAMINATION, MARCH 2016.
(Finalised Scheme of Valuation)

Subject: History

Code No: 1025

Qn.No	Scoring Indicators	Split Score	Total Score
1	Ideas related to Indus Civilization Beed making Shell cutting, metal work, Seal making Weight making Procuring materials contact with distant lands	2 5 1	8
	Mahajanapadas Magadhan dominance identified Agriculture production Iron mines Ambitious kings	2 1½ 1½ 1½ 1½	8
2	Made of metal 6 th c. onwards Issued by kings, marchants etc	½ ½ 1	2
3	Samudra Gupta / man of good action Havisena / distructor of bad etc.	1 1	2
4	Endogamy, Exogamy, Poliandry, Polygamy (Any attempt on the marriage systems of India should be rewarded)	4	4
5	Varna & Jati based on birth Varna fixed as four Jati, any number Jatis sharing common occupation	1 1	2
6	a) Sanchi b) Amaravathi c) Lumbini d) Bodh Gaya		4

Subject:

Code No:

Qn.No	Scoring Indicators	Split Score	Total Score
7	Slaves openly sold in market Exchanged as gift Ibn Battuta's description Bernier on Sati Women labour in agricultural and non-agricultural field	1 1 1 1	4
8	a) Alwar * b) Amir Khusrav c) Karnataka d) Delhi * Any response can be rewarded (b)		4
9	Ziyarat (Pilgrimage darghas of five chishti saints) Music & Dance mystical chants	2 1 1	4
10	First Surveyor General of India ruins at Hampi first noticed prepared first survey map of site	1 1	2
11	Seven line of forts enclosed agricultural lands Irrigational facilities well guarded gates	1 1 1 1	4
12	Zamindars - landed Proprietors social & economic privileges collected revenue on behalf of state consolidated agriculture	1 1 1 1	4
13	Akbar - Jawahar Narsah Shajahan - Red fort Aurangzeb - Alangir Gulbadan Begum - Humayun Nama	1 1 1 1	4

Subject:



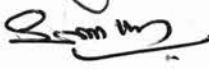








Code No:

Qn.No	Scoring Indicators	Split Score	Total Score
14	Supa village in Pune (Deccan Riot) money lenders & shopkeepers exploitation Riots from rural area - looting, burning of account books Spread to other areas	1 1 1 1	4
15	Any attempt with regard to the revolt of 1857 should be considered	4	4
16	Permanent Settlement 1793 Fifth Commission 1813 Azamgarh Proclamation. 1857 Deccan Riot commission. 1878 [For one correct answer 2 marks, For two correct answer 3 marks and Three correct answer 4 marks]		4
17	Lahore Session of INC Announcement of breaking salt law. Dandi March large scale women participation Conclusion	2 4 1 1	8
.	Jinnah's theory of two nations Communal Politics Pakistan resolution Failure of Cabinet Mission Post war incidents	2 2 1 1 2	8

Subject:

Code No:

Qn.No	Scoring Indicators	Split Score	Total Score
18	Muslim league's stand Ambedkar's view Princes were not ready to accept Congress	1 1	2
19	Any response on Communalism shall be awarded	2	2
20	Kelathunadu, Kozhikode, Cochin, Venad autonomous regions controlled by Joint families, maintained militia, Sarkedams of brahmins etc	4	4
21	BEM Veluthampi Vaikunda Samikal Chattampi Samikal	4	4

1. VINOD KUMAR .P.V KANNUR 
2. P Thomas E.J.  Alappuzha
3. Sunil Thomas  Idukki
4. Elizabeth M.  malappinam
5. N. Asokan  Wanganath
6. Pramod.B  Pathanamthitta
7. Aji.P  Kollam
8. P. Bhagiatestham.  THRISSUR
9. Saleet Moses.P  Thiruvananthapuram.
10. Mary.K.V.  Ernakulam.
11. Abhijit Gafur PA  Kozhikkode.

FIRST YEAR HIGHER SECONDARY EXAMINATION, MARCH 2016
(Scheme of Valuation)








Subject : Computer Science

Code No. 319

Qn. No.	Scoring Indicators	Split Score	Total Score
1	Firewall	1	1
2	Pits and Lands / 0 or 1 / Any relevant answer	1	1
3	Logical Error	1	1
4	int M[3][5] OR float M[3][5]	1	1
5	Fibre To The Home	1	1
6	d. Microwave is used for connectivity	1	1
7	Only one time	1	1
8	Conditional Operators OR (? :)	1	1
9	11001000	1	1
10	Disk defragmenter	1	1
11	Mesh Topology	1	1
12	10100111	2	2
13	Correct statements about top down and bottom up designs OR Modular programming (Any two points)	1+1	2
14	5- integer literal, '5'- character literal, 5.0- floating point literal, "5"- string literal	2	2
15	By inserting single line or multiline comments Use of // or /* and */ OR Use of output statement for printing name and address – only 1 score	2	2
16	int A[5]; A[5]={8,7,2,4,6}; OR int A[5]={8,7,2,4,6}; OR int A[5]; A[0]=8; A[1]=7; A[2]=2; A[3]=4; A[4]=6; OR Declaration only - 1 score	2	2
17	HAPPY HAPPY NEW YEAR	1 1	2

18	a) pow(5,3) b) strlen("KERALA") c) tolower('M') d) sqrt(100) OR Correct function names	2	2
19	Draw flowchart in any of the following order e, c, d, f, i, h, a, b, g e, d, c, f, i, h, a, b, g e, c, d, a, f, i, h, b, g e, d, c, a, f, i, h, b, g OR Partially correct flowchart – only 2 score	3	3
OR 19	Correct algorithm / flowchart/ program OR Partially correct algorithm / flowchart/ program – give 2 score	3	
20	Correct definition or declaration of array Correct algorithm / flowchart / program OR Diagram or explanation of searching – only 1 score	1 2	3
21	Any three services from SMS,MMS,GPS and smart card Names only ($\frac{1}{2}$ score each) – $1\frac{1}{2}$ Correct explanation ($\frac{1}{2}$ score each) - $1\frac{1}{2}$ OR Any three services from GSM, EDGE,GPRS,CDMA – 2 score only	3	3
22	Correct definition Valid points for comparison	1 2	3
23	a = -4, b =2 and c = 1 OR Error OR No output (1 score) ; justification (C in upper case)–2 score	3 3	3
24	Transistor – Second generation, VLSI – Fourth generation ENIAC – First generation	3	3
25(a)	(a) $(310)_8$ (c) $(C8)_{16}$ are same OR Any two correct conversions – 1 score	3	3
OR 25(b)	De Morgan's law Correct proof (algebraic method) $(B^1 + A)^1 = (B^1)^1 \cdot A^1 = B \cdot A^1$ Proof using Truth table method – 1 score only	1 2	

26	<p>(a) Recursive function</p> <p>(b) Correct function definition</p> <pre>int sum(int n) { if (n==0) return 0; else return (n+sum(n-1)); }</pre> <p style="text-align: center;">OR</p> <p>Any logic for finding the sum of the first N natural numbers – 2 score only</p>	1 3	4
27	<p>Detailed description about primary and secondary memory devices in computer (any five)</p> <p>Classification only – 1 score</p> <p>Only the names of any five devices – ½ score each</p>	5	5
28(a)	<p>Correct C++ program</p> <p>Correct Program structure – 1 ; Variable declarations – 1; Input – ½ ;</p> <p>Loop – 1; Logic – 1½</p>	5	5
OR 28(b)	<p>Correct C++ program</p> <p>Correct Program structure – 1 ; Variable declarations – 1; Input – ½ ;</p> <p>Loop – 1; Logic – 1½</p>	5	

1. Soman T.V Soman SGTASS VAKHATHOPE
 2. Shihabudeen-S Markaz HSS
(10038) Kananthur 
 3. JOHNSON P JOSEPH. SATASREE HSS (12021) 
 4. Sreedel.R VVHSS Thengalakulam 4042 
 5. Baijn-68, SMVHSS (01065) 
 6. Shaji-7 SMHSS Putharam 02044 
 7. Ajaayan S. NSS HSS Perumna
(05057) 
 8. Abhinav-C-8 GHSS Vokara (14017) 
- 9.

SECOND YEAR HIGHER SECONDARY EXAMINATION, MARCH 2016
(Scheme of Valuation)

Subject : Computer Science

Code No. 1019

Qn. No.	Scoring Indicators	Split Score	Total Score
1	struct and structure name Minimum of two elements of different data types One advantage of structure. <i>(If syntax of structure is written instead of example, give 1 score)</i>	$\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ 1	3
2	Nested structure	1	1
3	Use of delete operator	2	2
OR	Any two points from the following: (i) Causes orphaned memory blocks. (ii) Wastage of memory. (iii) Insufficient memory. (iv) System hanging. <i>(Other relevant problems, if any, can also be considered)</i>	1 + 1	2
4	Static polymorphism: (i) Compile-time (ii) Function overloading/ Operator overloading Dynamic polymorphism: (i) Run-time (ii) uses the concepts of pointers and inheritance. <i>(If explanation of compile-time and run-time cases is written, 1½ score each can be given.)</i> <i>(If the concept or an example of polymorphism is written, 1 score can be given)</i>	1 $\frac{1}{2}$ 1 $\frac{1}{2}$	3
5	Overflow	1	1
6	Explanation or algorithm for the following: (i) Overflow checking (ii) Setting the value of TOS (iii) Assigning the ITEM at TOS of STACK <i>(If the complete operation is diagrammatically shown, give full score)</i>	1 $\frac{1}{2}$ $\frac{1}{2}$	2
7	Any two points from the following: (i) Dynamic data structure. (ii) Size is not fixed in advance. (iii) It can grow or shrink during run-time. (iv) Dynamic memory allocation. (v) Any number of nodes can be added during run-time. <i>(If any one of the above point is explained, give full score)</i>	1 1	2
8	Hyper Text Transfer Protocol Secure	1	1
9	Any two comparison points for each from the following: Static web Page: (i) Content and layout is fixed. (ii) Never use databases. (iii) Directly runs on the browser. (iv) Not interactive. Dynamic web Page: (i) Content and layout may change during run time. (ii) Database is used to generate dynamic content (iii) Runs on the server side application program (iv) Interactive.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2

10	Use of <H1> (or any other heading tag), <MARQUEE>, , and structural tags (<HTML>, <HEAD>, <TITLE>, <BODY>) (Any three from the above 5 sets of tags can be given full score)	1 1 1	3
11	gives the definition of the term / Data Definition / Data Description	1	1
12	<TABLE> tag and 6 sets of <TR> tag 3 sets of <TH> tags in the first <TR> pair 3 sets of <TD> tags in each of the remaining <TR> pairs Data setting within <TH> pairs and <TD> pairs (If these tags are not used properly, and only structural tags are written, give 1 score.) (If SQL statement is written for this question, the following distribution may be used: Command – 1 score; Column descriptions – 3 score for 3 columns; Proper syntax – 1 score) (If a table is drawn with the details of five fruits, give 2 scores)	1 + 1 1 1 1	5
OR	 tag and Type attribute 5 sets of tags and Data setting Structural tags (If a roman numbered list of five fruits is prepared, give 2 scores)	1 + 1 1 + 1 1	5
13	Correct / Incorrect (In the context of JavaScript it is incorrect and in other cases, it is correct)	1	1
14	Proper example/syntax in C++/JavaScript/PHP Use / Explanation / Output	2 1	3
15	The keyword function and function name Body to find the product of any two numbers (or variables) (Give full score if an HTML Form is designed to accept two numbers and display their product.)	1 1	2
16	SSH / SFTP (or Secured File Transfer Protocol)	1	1
17	Dedicated hosting. Servers are usually hosted in data centers where the service provider facilitates Internet connectivity, round-the-clock power supply, the technical expertise for managing web servers, etc. (Explanation of dedicated hosting can also be considered for 1 score instead of writing advantage.)	1 1	2
18	Physical (Internal), Logical (Conceptual), and View (External) Explanation of each in a sentence.	1½ 1½	3
19(a)	Primary key – Acc Number, Candidate keys – Name and Balance (Any one of the above columns may be considered as the primary key and other two as candidate keys)	½+½	2
19(b)	σ Balance>200000(ACCOUNT). OR SELECT * FROM Account WHERE Balance>200000;	½+½	

	OR Output from the table (i.e.; the last row)		
20	<i>(Command – ½ score, Required clause – ½ score for each query)</i> <i>(Syntax or Example can be considered)</i> (a) ALTER TABLE <table_name> RENAME TO <new_table_name>; (b) DELETE FROM <table_name> [WHERE <condition>]; <i>(This clause is Not essential)</i> (c) ALTER TABLE <table_name> MODIFY <column_name> <data_type> [<size>] [<constraint>]; (d) ALTER TABLE <table_name> DROP <column_name>; (e) ALTER TABLE <table_name> ADD <column name> <data type> [<size>] [<constraint>];	½ ½ 1 ½ ½ ½ ½ ½	5
21	Give 1 score for any relevant response	1	1
22	(a) freeware	1	1
23(a)	<i>Any two comparison points from the following:</i> Indexed array: (i) Numeric index (ii) Non-negative numbers are used as index or subscripts (iii) Eg.: \$price=array(25, 40, 50, 30); Associative array: (i) Named keys as index (ii) Strings are used as keys /index (iii) Eg.: \$price=array("pen"=> "25", "book"=> "40", "box"=> "50", "cover"=> "30"); <i>(If examples are correct, full score can be given)</i>	½ ½ ½ ½	2
23(b)	<i>(Code may be using C++/JavaScript/PHP)</i> Outer loop for generating numbers below 50 Inner loop for generating numbers up to the half (or square root) of the above number Factor checking and display of prime number	1 1 1	3
OR	Outer loop for generating numbers below 100 Inner loop for generating numbers up to the half of the above number Factor checking and summing the factors Perfect number checking	1 1 ½ ½	3
	<i>Full score may be given if the programs are written for only prime number checking and perfect number checking (i.e. without outer loop)</i> <div style="text-align: center;">OR</div> <?php ?> - 1 score Loop - 1 score Remaining logic - 1 score		
24(a)	Parallel computing / Distributed computing	1	1
24(b)	SaaS, Paas, IaaS <i>(Explanation of any two can be given full score)</i> <i>(Explanation about cloud services can be given 1 score)</i>	1+1+1	3

25(a)	Credit card / Debit card / ATM Machine / Swipe machine / eChequeue	1	1
25(b)	Explanation about industrial property right and copyright. One example for each	1 + 1 $\frac{1}{2} + \frac{1}{2}$	3

1. Joy John, St. Joseph's HSS, Thiruvananthapuram.
2. Lekshimija P. S., AKM HSS, Mylapore, Kollam.
3. Firoskh Khan S. S., Govt. HSS, Konni, Pathanamthitta.
4. Sajan Mathew, SJ HSS, karimannoor, Idukki.
5. Krishnakumar N., NS HSS, Nedumudi, Alappuzha.
6. Binoj Chaccko, JJMM HSS, Yendayar, Kottayam.
7. Resmi Gopinath, NSS BHSS, Manikyamangalam, Ernakulam.
8. Subhash A. Panikulam, St. Antony's HSS, Mala, Thrissur.
9. Sreeja R. Nair, IKT HSS, Cherukulamba, Malappuram.
10. Shinil P. P., Palaora HSS, Ulliyeri, Kozhikode.
11. Jithesh A., Vijaya HSS, Pulppalli, Wayanad.
12. , Kasaragode.

13 TEDDY JOSEPH KANNUR

Teddy
2/4/16

14. Abdul Vajid K.K. Kasaragod

Abdul Vajid
2/4/16

FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2016

FINALIZED SCHEME OF VALUATION

Subject - Biology - Part A Botany

Code No. 317

Qn.No	SUB QTN	Scoring Indicators	Split Score	Total Score
1		a) Pasteur	1	1
2		d) Chlorophyll a	1	1
3		<ul style="list-style-type: none"> • The members of Rhodophyceae are known as red algae. • Presence of red pigment r-phycoerythrin, Chlorophyll a and d. • The food is stored as floridean starch. • Cell wall is made up of cellulose, pectin, poly sulphate esters. • Present in fresh water, brackish water, salt water. • Red thalli of most of the red algae are multicellular. • Vegetatively reproduced by fragmentation. • Asexually reproduced by non-motile spores. • Sexually reproduced by non-motile gametes. • Sexual reproduction is oogamous with post-fertilization developments. (Any two distinguishing features of Rhodophyceae give 2 scores)	1+1	2
		OR	OR	OR
		<ul style="list-style-type: none"> • Mycorrhiza is the symbiotic association of a fungus with root system / Fungal association in the roots of Pinus. • Corolloid roots are the specialised roots of Cycas / Roots associated with nitrogen fixing cyanobacteria. 	1 1	2
4		Active transport:- Transport of substances from low concentration to a higher concentration (uphill transport). Requires ATP to carry substances across the cell membrane. (Any one response of the above give 1 score) Facilitated diffusion:- Transport of substances from higher concentration to lower concentration. Substances move across the cell membrane without the expenditure of energy. (Any one response of the above give 1 score)	1 1	2
5		<ul style="list-style-type: none"> • Chlorosis / loss of chlorophyll and yellowing in leaves. • Necrosis / death of tissues. • Stunted plant growth. • Premature fall of leaves and buds. • Inhibition of cell division. • Delay in flowering etc. (Any four deficiency symptoms give 2 scores)	1/2 x 4= 2	2

6		<ul style="list-style-type: none"> Respiration is an amphibolic pathway as it involves both anabolism (synthesis of substrates) and catabolism (breaking down of substrates). <p>(Any explanation showing respiration is an amphibolic pathway give full score 2) or (Any Schematic representation showing respiration is an amphibolic pathway give full score 2).</p>	1 +1	2
7		<p>Alcoholic fermentation:- Pyruvic acid is converted to carbondioxide and ethanol .</p> <p>Lactic acid fermentation :- Pyruvic acid is converted to lactic acid.</p> <p>(Schematic representation of reaction steps of alcoholic and lactic acid fermentation give full score 2 /any one difference between alcoholic and lactic acid fermentation give full score 2)</p>	1 1	2
8	a	i) ABA or NAA (Synthetic hormone)	1	3
	b	<ul style="list-style-type: none"> Promote bolting in rosette plants(internode elongation just prior to flowering. Increase the length of grapes stalk/increase in length axis. Delay of senescence. Speed up malting process in brewing industry. <p>(Any two correct physiological functions of gibberellin give 2 scores).</p>	1+1	
9	a	Kranz anatomy	1	3
	b	<ul style="list-style-type: none"> Tolerate higher temperature. Show responses to high light intensities. Lack of photorespiration. Greater productivity of biomass. <p>. At very low Co₂ concentration C₄ plants reach saturation level. .In C₄ plants Co₂ fixation takes place both in mesophyll cells and bundle sheath cells.</p> <p>(Any two advantages of C₄ plants give 2 scores Or Explanation about C₄ pathway give 2 scores Or Schematic representation of C₄ photosynthetic pathway give 1 score)</p>	1+1	
10	a	iii) Pachytene	1	3
	b	<ul style="list-style-type: none"> Conservation of specific chromosome number of each species . Increases genetic variability in the population of organisms from one generation to the next. Formation of haploid gametes. Reduction of chromosomes by half. <p>(Any two significances of meiosis give 2 scores)</p>	1+1	
11	a	Liliaceae / Lily family	1	3

	b <ul style="list-style-type: none"> • Bisexual • Actinomorphic • Six tepals in fused condition with valate aestivation./(3+3) • Six stamens in epipetalous condition/(3+3) • Tricarpellary, trilocular, syncarpous, superior ovary/ G (3) • Axile placentation etc (Any four floral features or floral formula of liliaceae with four floral features give full score 2)	1/2 x 4 =2	
12	<ul style="list-style-type: none"> • Fluid mosaic model of plasma membrane. • Cell membrane is composed of lipids that are arranged in a bilayer. • Lipids are arranged within the membrane with polar head towards the outer sides . • Hydrophobic tails towards the inner part. • Lipid component of the membrane mainly consist of phosphoglycerides. • Cell membrane also possess proteins and carbohydrates. • Membrane proteins can be integral or peripheral. • Peripheral proteins lie on the surface of membrane while the integral proteins are partially or totally buried in the membrane • The quasi-fluid nature of lipid enables lateral movement of proteins within the overall bilayer. (Any three correct structural features of plasma membrane give 3 scores) Or Singer and Nicolson model or Fluid mosaic model give 2 scores	1 x 3 = 3	3
13	<ul style="list-style-type: none"> • Meristematic tissue cork cambium or phellogen develops in the cortex. • Phellogen cut off cells on both sides. • The outer cells differentiate into suberised cork or phellem. • The inner cells differentiated into parenchymatous sec.cortex or phelloderm . • Phellogen, phellum and phelloderm are collectively known as periderm. • Due to the activity of cork cambium ,pressure build up on the remaining layers peripheral to it and finally become die and slough off. • At certain region ,the phellogen cut off closely arranged parenchymatous cells on outer side with lens shaped opening called lenticels. (Any three events or its explanation during periderm formation give 3 scores or	1x3	3
	OR	OR	OR

	<ul style="list-style-type: none"> • The cambial ring become active and begins to cut off new cells both towards the inner and outsides. • The cells cut off towards innerside and form sec.xylem. • The cells cut off towards periphery and form sec.phloem. • The cambium is greatly more active on the innerside than the outside and form more secondary xylem than sec.phloem. . Formation of annual rings . Heart wood, sap wood formation. • The primary xylem remains more or less intact. • Cambium forms narrow bands of parenchyma which passes through the sec.xylem and sec.phloem in radial direction and form secondary medullary rays. <p>(Any three events about the cambial ring activity give full score 3) Or Diagrammatic representation of the activity of cambial ring with correct 3 labelling give full score 3)</p>	1x3	3
	TOTAL SCORE	30	30

Manoj Jose
Malappuram



9249733524.

SECOND YEAR HIGHER SECONDARY EXAMINATION MARCH 2016

FINALIZED SCHEME OF VALUATION

Subject - Biology - Part A Botany

Code No. 1017

Qn.No	SUB QTN	SUB QTN	Scoring Indicators	Split Score	Total Score
1			c) Parthenogenesis	1	1
2			d) Perisperm	1	1
3	a		Cycles of gaseous matter are called gaseous cycle. The reservoir of gaseous type of nutrient cycle exists in the atmosphere. These cycles occur at faster rate. (Any one relevant point or example or schematic representation about gaseous cycle give 1 score)	1	2
	b		Cycles of mineral matter are called sedimentary cycle. These cycles are slow. The reservoir for mineral matter is located in earth's crust. (Any one relevant point or example or schematic representation about sedimentary cycle give 1 score)	1	
4			b) Biomagnification	1	1
5			<ul style="list-style-type: none"> • Eli lily prepared two DNA sequences corresponding to A and B, chains of human insulin by using r DNA techniques. • Introduced them in plasmids of E.coli to produce insulin chains. • Chains A and B were produced separately. • These separately prepared chains were extracted and combined by creating disulfide bonds to form human insulin. (Any two points from above or summerised exaplanation about it or diagrammatic representation of preparation of human insulin by rDNA technology give 2 score)	1+1	2
6	a	1	<ul style="list-style-type: none"> • Screening germ plasm for resistance sources. • Hybridisation of selected parents. • Selection and evaluation of hybrids. • Testing and release of new varieties. Or any four steps of plant breeding give 2 scores.	1/2 1/2 1/2 1/2	3
		2	Pusa Sadabahar, Parbhani kranti, Chilly and Mung bean. (any two example for virus resistant plants give 1 score)	1	
			OR	OR	OR

	b	<p>Plants obtained by tissue culture are genetically identical are known as somaclones.</p> <ul style="list-style-type: none"> Isolation of somatic cells from two different varieties of plants. Digestion of cell walls by enzymes. Fusion of protoplasts of two selected varieties forming somatic hybrid protoplast. Somatic hybrid protoplast is then grown in suitable culture medium and produce desired somatic hybrid or the diagrammatic representation of somatic hybridisation give 2 scores 	<p>1</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	3
7		<p>Fruit is developed from (thalamus) parts of the flower other than ovary. Such fruits are called false fruits.</p> <p>Eg:-Apple, Strawberry, Cashew (any one relevant example give 1 score)</p>	<p>1</p> <p>1</p>	2
8		<ul style="list-style-type: none"> Pollen release and stigma receptivity are not synchronised. Anther and stigma are placed at different positions. Self- incompatibility. Unisexual flowers on monoecious Dioecious plants (any two out breeding devices give 2 scores) 	<p>1</p> <p>1</p>	2
9		<ul style="list-style-type: none"> Deciduous forest Tropical rain forest Forest Desert Sea coast (Any two these give 1 score) 	<p>1/2</p> <p>1/2</p>	1
10		<p>Pyramid of biomass in sea / lake is generally inverted because the biomass of fishes (top carnivores) far exceeds that of phytoplankton (primary producers) or diagrammatic representation of inverted pyramid of biomass with correct labelling give 2 scores</p>	2	2

11	a	<p>1. Mutualism/symbiosis The interaction between two organisms both are mutually benefited or Species A + Species B + or Explanation with example</p> <p>2. Commensalism:- The interaction between two organisms, one is benefited and other is neither benefited nor harmed or Species A + Species B 0 or Explanation with example.</p> <p>3. Parasitism :- The interaction between host and parasite, in this parasite is benefited and host is harmed or + - or Explanation with example</p> <p>4. Predation-. - + Explanation with example</p> <p>5. Competition. - - Explanation with example</p> <p>6. Ammensalism - 0 Explanation with example (Name of any three of the above interactions with example give 3 scores)</p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	3
		OR	OR	OR
	b	<p>Temperature</p> <p>Water</p> <p>Light</p> <p>Soil</p> <p>(Any three above mentioned environmental factors with explanation in single sentence give full score 3)</p>	1/2 x 6=3	3
12		<p>Compressed natural gas.</p> <ul style="list-style-type: none"> • CNG burns most efficiently and very little unburnt gas is left. • It is cheaper than diesel and petrol. • It can not be adulterated like petrol or diesel. • It cannot be siphoned off • Eco friendly (any two of the above responses give 1 score) 	<p>1</p> <p>1/2</p> <p>1/2</p>	2
13		<p>The use of bio-resources by multinational companies and other organizations without proper authorisation from the countries and the people concerned without compensatory payment. (Any relevant explanation of biopiracy give 2 scores)</p>	2	2
14		<ul style="list-style-type: none"> • Cutting down use of fossil fuel. • Improving efficiency of energy usage. • Reducing deforestation. • Planting trees. • Slowing down the growth of human population. • Reduce the emission of greenhouse gases into the atmosphere etc (any two correct responses give 1 score) 	<p>1/2</p> <p>1/2</p>	1

15		A Motor B Foam braker C Flat bladed impeller D Acid / Base for pH control Or any two labelling or brief account on bioreactor give full score 2	1/2 1/2 1/2 1/2	2
16	a	Bacteria, E.coli, Agrobacterium tumifaciens, Retrovirus, Plasmid, Ti plasmid, p BR322, Bacteriophage, Yeast (any one organism or components used as vector give 1 score)	1	2
	b	DNA polymerase is the enzyme which catalyses the polymerisation of deoxyribonucleotides into new DNA strand or extension of primer in PCR or DNA polymerase a commonly used tool in rDNA technology. (Any one function give 1 score	1	
17		d) Pistillate	1	1
		TOTAL SCORE	30	30

~~Joby & Anthony~~

Joby George E

USST Botany

AKM HSS Poocherry.