

PRIVATE SECONDARY EDUCATION AUTHORITY

MONITORING OF NORMS AND STANDARDS IN A FACILITY RECKONED AS:

BIOLOGY LABORATORY UP TO GRADE 13 – Year 2021/2022

Subject Appellation and Level:

- **BIOLOGY Grades 12 & 13 – HSC/AL - CIE syllabus code: 9700**
- **BIOLOGY Grades 10 & 11 - SC/OL – CIE syllabus code: 5090**
- **SCIENCE Up to Grade 9 (the *Biology* component only in schools where there is no Science Junior Laboratory) - NCF**

Name of School : _____ Date of Verification : _____

Is the facility New / Relocated / Existing / Upgraded? _____

Number of sections and students using this facility:

Grade	Extended Program				Regular							
	EP7	EP8	EP9	EP9+	7	8	9	10	11	12	13	
No. of Sections												
No. of Students												
No. of Groups												

Educator in Charge: _____ Qualifications: _____

Specialist Room Attendant: _____ Qualifications: _____

IMPORTANT NOTES:

The following conditions should be fulfilled to ensure a reasonable standard:

- **The room and floor area provided should be appropriate.**
- **A minimum score of 75 % should be obtained in each of the four Sections A to D.**
- **Compulsory items in Section D, highlighted in bold characters, should be provided.**
- **Record of use of the Lab. should be kept as required.**

Minimum requirements for a class of 20 students are specified. However, in case of need provision should be made to accommodate up to 4 additional students.

(A) PHYSICAL FACILITIES – weightage: 30 %						
Item	Description	Requirements	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
1. Floor Area and Room *NOTES: 1. For existing <i>Labs</i> , the previously approved Floor Area shall be accepted and rated pro-rata. 2. For new labs. the floor area of 60m ² shall be required.	Concrete Building	An area of 60 m ² is required * (see side-notes)	75/m ²	4500		
	CONDITIONS OF ROOM:			1500		
	Ceiling	Plastered & crack-free	10%	Rated pro-rata on area		
	Walls	Plastered, crack-free & painted	10%			
	Flooring	Flat & tiled /painted	10%			
	Shape	Convenient	10%			
	Set Up	Conducive	10%			
	Cleanliness	Maintained	10%			
	Proper Storage and Classification	Indexing & Accessibility	10%			
	Lighting	Adequate	10%			
	Ventilation	Natural/ Assisted	10%			
	Utilities	Water/Gas/ Electricity	10%			

Contd. on the next page

Item	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
2. Furniture & Accessories *NOTE: Worktables should be of Laboratory type and fitted with taps, sinks, bunsen burners and power supply. **Note: Demonstration Table is rated only if it has ALL of the 4 facilities listed at a) to d)	i) Work Tables*	15 m ²	30	450		
	ii) Stools	20	21	420		
	iii) Demonstration Table (2m x 1m)**	2m ²	110	220		
	a) Tap and Sink (Tap: Graded Type)	1 Set	110	110		
	b) Bunsen Burner with gas supply	1	110	110		
	c) Power Point – attached or nearby	1	110	110		
	d) 20 cm higher than work tables	-	110	110		
*NOTE: Conditions Problems identified with the conditions of Furniture and Accessories , if any, shall be evaluated on how far they affect teaching and learning on a scale of 1 to 10 before effecting deductions on marks for conditions. The marks may be totally forfeited in case of even a single grave problem with conditions.	iv) Chair for Teacher	1	150	150		
	v) White Board (Size: 243cm X 105cm) below size not rated	1	200	200		
	vi) Tap (graded type) & Sink (of appropriate material)	6 Sets	90	540		
	vii) Power Points (free)	2	80	160		
	viii) Wall Clock	1	100	100		
	ix) Shelves/Cupboards	Sufficient for Storage	300	300		
	Conditions i) to ix)*			800		
			TOTAL Section A	9 780		Score sect A

Actual Marks Scored on Physical: Score sect A X 12000 = _____
Facilities (Sect. A) 9 780

(B) INSTRUCTIONAL TOOLS & RECORDS – weightage: 30%

1. Practicals	Number of Sessions	20	250	5000		
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NOTE: Reckoned pro-rata for the current academic year - max. 20 per class or group on 8.5 months.

Requirements:	Grade Class/Group	Ext. Prg.				Regular						
		7	8	9	9+	7	8	9	10	11	12	13
<p>a) 20 practical sessions per class for Grades 10 - 13 in the academic year spread over all three school terms.</p> <p>b) 7 practical sessions per class for Grades EP & Reg. 7, 8 and 9 in the academic year.</p> <p>c) Records to be kept class-wise and kept in the lab.</p>	A											
	B											
	C											
	D											
	E											
	Total (x 3 for EP & Reg. Gds. 7-9)											
	Average (Gradewise)											
	Overall Average											
Note for Guidance:	<i>Grades EP & Reg. 7, 8 and 9 to be considered only if school does not have a Science Junior Lab.</i>											

2. Audio Visual Sessions	Number of Sessions	10	200	2000		
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NOTE: Reckoned pro-rata for the current academic year - max. 10 per class or group on 8.5 months.

Requirements:	Grade Class/Group	Ext. Prg.				Regular						
		7	8	9	9+	7	8	9	10	11	12	13
<p>a) 10 Audio Visual sessions per class for Grades 10 - 13 in the academic year spread over all three school terms.</p> <p>b) 4 Audio Visual sessions per class for Grades EP & Reg. 7, 8 and 9 in the academic year.</p> <p>c) Records to be kept class-wise and kept in the lab.</p> <p>d) Audio Visual Sessions - (video lessons, Computer Assisted Learning)</p>	A											
	B											
	C											
	D											
	E											
	Total (x 3 for EP & Reg. Gds. 7-9)											
	Average (Gradewise)											
	Overall Average											
Note for Guidance:	<i>Grades EP & Reg. 7, 8 and 9 to be considered only if school does not have a Science Junior Lab.</i>											

Item	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
3.	Time-Table of practicals (with school seal and year stated)	1 (displayed)	100	100		
4.	Stock-Book (Up to date, signed and with school seal. New acquisitions to be highlighted.)	1	150	150		
5.	TEACHING AND LEARNING AIDS					
(i)	Reference books for Theory (Published in the past 3 years)	5	100	500		
(ii)	Reference books for Practical work (Published in the past 5 years)	5	100	500		
(iii)	Multimedia a) PC/Laptop b) Internet c) LCD Projector d) Screen* <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 20px;">*NOTE: A connectable LED TV of 55" may replace items c) and d)</div>	1 Connected	200 100	200 100		
(iv)	Charts (Printed and of minimum size – A3. Contents should be readable with drawings and bold characters)					
	Anatomy					
1.	Alimentary System	1	60	60		
2.	Circulatory System	1	60	60		
3.	Development of foetus	1	60	60		
4.	Dicot leaf (Anatomy)	1	60	60		
5.	Dicot root (Anatomy)	1	60	60		
6.	Dicot stem (Anatomy)	1	60	60		
7.	Endocrine System	1	60	60		
8.	Flower - wind pollinated, insect pollinated	1	60	60		
9.	Heart: Structure and function	1	60	60		
10.	Human Blood (Comp. & Func.)	1	60	60		
11.	Kidney and excretory system	1	60	60		
12.	Liver (human)	1	60	60		
13.	Nervous system	1	60	60		
14.	Reproductive system (male, female)	1	60	60		
15.	Respiratory System	1	60	60		
16.	Skeleton (human)	1	60	60		
17.	Skin	1	60	60		
		Sub-Total (Section B)		9880		

	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
	Medical					
18.	Balanced diet	1	60	60		
19.	Cardiovascular diseases	1	60	60		
20.	Dental Care	1	60	60		
21.	Drugs: use and abuse	1	60	60		
22.	Effect of smoking on health including emphysema	1	60	60		
23.	HIV Virus and AIDS	1	60	60		
24.	Immune system	1	60	60		
25.	Liver Cirrhosis	1	60	60		
26.	Lung Cancer - causes, symptoms, prevention	1	60	60		
27.	Malaria	1	60	60		
28.	Menstrual Cycle	1	60	60		
29.	Syphilis	1	60	60		
	Environment					
30.	Carbon Cycle	1	60	60		
31.	Ecosystem (e.g. pond life)	1	60	60		
32.	Energy Flow	1	60	60		
33.	Food Chain / Web	1	60	60		
34.	Nitrogen Cycle	1	60	60		
35.	Pollution (air)	1	60	60		
36.	Pollution (land)	1	60	60		
37.	Pollution (river)	1	60	60		
38.	Pollution (sea)	1	60	60		
39.	Water Cycle	1	60	60		
	Others					
40.	Classification of organisms – the 5 kingdoms	1	60	60		
41.	DNA Molecular structure	1	60	60		
42.	Safety measures in a Laboratory	1	60	60		
		Sub-Total (Section B)		1500		

	Description	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
(v)	Models					
1.	Brain	1	60	60		
2.	DNA – Pre-Built DNA	1	60	60		
3.	Eye	1	60	60		
4.	Heart	1	60	60		
5.	Kidney	1	60	60		
6.	Leaf (dicot) T.S. and L.S	1	60	60		
7.	Skeleton (Human) – on stand (artificial)	1	60	60		
8.	Skin	1	60	60		
9.	Stem (dicot) T.S and L.S	1	60	60		
10.	Set of Teeth (Human)	1	60	60		
(vi)	Bones					
	Complete set of individual bones of a mammal (artificial): (Atlas, axis, cervical vertebra, thoracic vertebra, lumbar vertebra, Scapula, Clavicle, Humerus, Radius, Ulna , pelvic girdle, sacrum, femur, tibia, fibula)	1 set		60		
(vii)	Preserved Specimens					
1.	Animal Organs (different)	10	6	60		
2.	Dry fruits and seeds (different)	10	6	60		
3.	Fish and other aquatic animals (different)	10	6	60		
4.	Insects (different)	10	6	60		
5.	Others	10	6	60		
6.	Plant Organs (different)	10	6	60		
7.	Reptiles (different)	5	12	60		
		Sub-Total (Section B)		1080		
			TOTAL Section B	12460		Score sect B

Actual Marks Scored on Instructional Tools & Records (Sect B) **Score sect B** x 12000 = _____
12460

(C) SAFETY ITEMS – weightage 10 %						
Item	Description	Quantity	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
1. First Aid Kit	Equipped to treat cuts, burns and eye problems	1	350	350		
2. Fire Extinguisher	Capacity: 2 L or 2 Kg (serviced on time)	1	400	400		
3. Fire Blanket	0.9m x 0.9 m	1	350	350		
4. Emergency Exit <i>(clearly indicated)</i>	Additional door for quick exit in case of emergency	1	400	400		
5. Safety Goggles	For protection of eyes while conducting practicals.	20	20	400		
6. Safety Charts Min. size A ₃ <i>(permanently affixed at appropriate places)</i>	Clear instructions about safety precautions <ul style="list-style-type: none"> • Exit signs • In case of fire • Dangerous chemicals; etc 	5	80	400		
7. i) Main Switch/ Circuit Breaker	Separate for the Biology Lab. And located at an accessible place inside the Lab.	1	350	350		
ii) ELCB/RCD		1	400	400		
8. Gas conductors (NOTE: Gas tanks to be kept preferably outside the building with an internal gas switch)	Rubber tubing connected to Bunsen Burners should be replaced before expiry date stated thereon.	10	60	600		
9. Storage of chemicals	Safe storage, organisation and accessibility of chemicals, especially hazardous ones	Safe Storage	100	100		
		Organisation	100	100		
		Accessibility	100	100		
			TOTAL Section C	3950		Score sect C

Actual Marks Scored on Safety Items (Sect C): Score sect C x 4000 = _____
3950

(D) EQUIPMENT & CONSUMABLES – weightage 30 %						
	Equipment	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
1.	Apparatus and chemicals for water cultures to show effect of NO_3^- and Mg^{2+} on growth	5	12	60		
2.	Apparatus to measure rate and depth of breathing (Spirometer)	1	60	60		
3.	Aquarium with air pump * (<i>see footnote</i>)	1	60	60		
4.	Aspirator bottle 10 litres	2	30	60		
5.	Basin (Plastic)	2	30	60		
6.	Beaker 50 cm ³	40	4.5	180		
7.	Beaker 100 cm ³	40	4.5	180		
8.	Beaker 250 cm ³	20	9	180		
9.	Beaker 500 cm ³	20	9	180		
10.	Beaker 1000 cm ³	2	90	180		
11.	Beating tray	1	60	60		
12.	Bell Jar	2	30	60		
13.	Bench Lamp	10	6	60		
14.	Bioset	10	12	120		
15.	Bioviewer	10	12	120		
16.	Black Paper/Aluminium foil	2 Rolls/pks	30	60		
17.	Blade (Safety)	30	2	60		
18.	Boiling tube	30	4	120		
19.	Bottle (Winchester)	6	10	60		
20.	Bottle, reagents (100 cm ³) (<i>empty</i>)	10	18	180		
21.	Bottle, reagents (250 cm ³) (<i>empty</i>)	24	7.5	180		
22.	Brush (Paint)	20	3	60		
23.	Brush (test tube)	10	12	120		
24.	Bucket (plastic) – 8 litres	2	30	60		
25.	Bucket (sand)	1	60	60		
26.	Bunsen Burner (with gas supply and in use)	10	18	180		
27.	Burette 50 cm ³ x 0.1 cm ³	5	12	60		
28.	Conical Flask 100 cm ³	20	6	120		
29.	Conical Flask 300 cm ³	20	6	120		
30.	Cork (Assorted)	50	2.4	120		
		Sub-Total (Section D)		3180		

***An aquarium to be rated must be fully functional with air pump, weeds, aquatic organisms. An empty aquarium or with water only will not be rated**

	Equipment	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
31.	Cork Borer	1	60	60		
32.	Cotton Wool	2 pks	30	60		
33.	Cover Slip	2 boxes of 200	60/box	120		
34.	Crucible and lid	10	6	60		
35.	Crucible Tongs	10	6	60		
36.	Cylinder (Measuring) 25 cm ³	10	12	120		
37.	Cylinder (Measuring) 50 cm ³	10	12	120		
38.	Cylinder (Measuring) 100 cm ³	5	24	120		
39.	Cylinder (Measuring) 250 cm ³	5	24	120		
40.	Cylinder (Measuring) 500 cm ³	2	60	120		
41.	Cylinder (Measuring) 1000 cm ³	2	60	120		
42.	Delivery Tube	5	24	120		
43.	Desiccator	1	60	60		
44.	Dish for specimens	20	6	120		
45.	Dropper with teat	40	3	120		
46.	Dropping bottle 30 cm ³	20	6	120		
47.	Electric Kettle	1	120	120		
48.	Electronic Balance (2 D.P)	1	120	120		
49.	Eyepiece graticule	20	6	120		
50.	Filter Paper	2 boxes	60/box	120		
51.	Filter Pump	1	60	60		
52.	Forceps (blunt)	20	6	120		
53.	Forceps (extra-large)	2	30	60		
54.	Forceps (fine)	20	6	120		
55.	Funnel (large)	20	6	120		
56.	Funnel (small)	20	6	120		
57.	Funnel Holder	10	12	120		
58.	Glass rod	20	6	120		
59.	Glass Slide (microscope)	8 bxs of 50	15/box	120		
60.	Glass tube (4 mm diameter)	10 m	6/m	60		
61.	Glass tube cutter	1	60	60		
62.	Goggle (safety)	10	12	120		
63.	Haemocytometer	1	60	60		
64.	Hand lens	20	6	120		
		Sub-Total (Section D)		3480		

	Equipment	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
65.	Jug (Plastic)	2	30	60		
66.	Label	2 reels	30/reel	60		
67.	Light sensor meter	1	60	60		
68.	Marker (felt) – different colours	15	8	120		
69.	Microscope (monocular)	20	9	180		
70.	Microscope graticule slide/stage micrometer graticule	20	6	120		
71.	Mortar and pestle	4	15	60		
72.	Mounted needle	20	3	60		
73.	Paper Chromatography	2 reels	30	60		
74.	Paper toweling or tissue	2 packs	60	120		
75.	Petri dish 15 x 100 mm	20	6	120		
76.	Petri dish 15 x 80 mm	50	2.4	120		
77.	pH Paper (range 1 – 14)	4 pkts	30/pkt	120		
78.	Pin	1 box	60	60		
79.	Pipette (straight graduated)	20	6	120		
80.	Pipette with teat	40	3	120		
81.	Pitfall trap/jam jar; suitable cover to prevent water entry	5	12	60		
82.	Plain mirror	20	3	60		
83.	Plankton net and dip net	1	60	60		
84.	Plasticine	1 kg	6/100g	60		
85.	Pooter	10	12	120		
86.	Potometer	2	60	120		
87.	Potted plants (assorted)	12	15	180		
88.	Refrigerator *(see footnote)	1	180	180		
89.	Respiration apparatus	1	60	60		
90.	Rubber bung No. 13	40	3	120		
91.	Rubber bung No. 15	40	3	120		
92.	Rubber bung No. 21	40	3	120		
93.	Rubber bung with 1 hole	20	6	120		
94.	Rubber bung with 2 holes	20	6	120		
95.	Rubber tubing	5 m	24/m	120		
96.	Ruler (plastic) – 30 cm	20	3	60		
		Sub-Total (Section D)		3240		

***A Refrigerator to be rated should be operational all year through with ice cubes and cold water. Enzymes should be preferably kept in the lower deck or door shelves.**

	Equipment	Quantity Required	Marks Per Unit	Marks Item-wise	Existing	Score (for PSEA use only)
97.	Scalpel	20	6	120		
98.	Scissors (blunt)	20	6	120		
99.	Scissors (sharp and pointed)	20	6	120		
100.	Seeker (feeler)	20	3	60		
101.	Simple respirometer – manometer	1	60	60		
102.	Specimen tube with cork	50	2.4	120		
103.	Spotting tile/Cavity tile(12 spots)	20	6	120		
104.	Stand, clamp and bosshead	10	12	120		
105.	Stopclock/stopwatch	10	12	120		
106.	Suitable aid to demonstrate mitosis and meiosis(e.g coloured pipe cleaners)	100	0.6	60		
107.	Sweeping net (muslin)	5	12	60		
108.	Syringe 2 cm ³	20	6	120		
109.	Syringe 5 cm ³	20	6	120		
110.	Syringe 10 cm ³	20	6	120		
111.	Test Tube	200	0.9	180		
112.	Test Tube holder	20	9	180		
113.	Test tube rack	20	9	180		
114.	Thermometer (-10° c – 110°c)	20	6	120		
115.	Thistle funnel	2	30	60		
116.	Tray for hand sorting - PVC 300 X 150 X 80 mm	5	12	60		
117.	Tripod stand	10	12	120		
118.	Trough (200 x 200mm)	2	30	60		
119.	Trowel (gardening)	1	60	60		
120.	T-Tube /T Connector	5	12	60		
121.	UV Lamp	2	30	60		
122.	Vacuum flask (1 dm ³)	4	15	60		
123.	Visking Tubing (14 mm)	2 reels	30	60		
124.	Watch glass (large)	20	6	120		
125.	Watch glass (small)	20	6	120		
126.	Water bath (thermostat)	1	120	120		
127.	Water Bath or equivalent	1	60	60		
128.	White tile (15 cm x 15 cm)	20	6	120		
129.	Wire gauze with ceramic centre	10	18	120		
130.	Y-tube/Y Connector	2	30	60		
		Sub-Total (Section D)		3420		

CHEMICALS

	Description	Quantity Required	Weightage per 100g/100cm³	Marks	Existing	Score (for PSEA use only)
1	Acetate paper	2 pks of 50	30/pkt	60		
2	Acetone – Propanone	2.5 dm ³	48/dm ³	120		
3	Agar powder	250 g	4.8/10g	120		
4	Albumen	500 g	24	120		
5	Ammonium hydroxide	500 cm ³	24	120		
6	Ampicillin	100 mg	1.2/mg	120		
7	Ascorbic acid	100 g	120	120		
8	Benedict's reagent	2 dm ³	60/dm ³	120		
9	Biuret reagent	500 cm ³	24	120		
10	Bromothymol blue	500 cm ³	12	60		
11	Buffer tablets pH 1 to 10 (30 tablets per unit of pH)	300	0.2/tablet	60		
12	Calcium chloride (anhydrous)	500 g	24	120		
13	Citric acid	100 g	120	120		
14	Clinisticks: Albusticks	1 box of 100	60	60		
15	Clinisticks: Diasticks	1 box of 100	60	60		
16	Cobalt chloride Paper	5 boxes	12/box	60		
17	Copper (II) sulfate 5. H ₂ O	250 cm ³	48	120		
18	Cresol Red	25 g	2.4/g	60		
19	Diastase / Amylase	25 g	4.8/g	120		
20	Dichlorophenol Indophehnol (DCPIP)	25 g	2.4/g	60		
21	Distilled/Deionized water	10 dm ³	18/dm ³	180		
22	Eosin	25 g	2.4/g	60		
23	Ethanol 95%	2 dm ³	30	60		
24	Formaldehyde	2.5 dm ³	24	60		
25	Glucose (Analar)	500 g	24	120		
26	Glycerol	500 cm ³	12	60		
27	Hydrochloric acid (conc.)	2.5 dm ³	2.4	60		
28	Hydrogen carbonate indicator	500 cm ³	24	120		
29	Hydrogen peroxide (100 vol.)	2 dm ³	30/dm ³	60		
30	Invertase	100 cm ³	60	60		
31	Iodine	100 g	120	120		
32	Lactose	500 g	12	60		
33	Lime Water	2.5 dm ³	24/dm ³	60		
		Sub-Total (Section D)		3000		

	Description	Quantity Required	Weightage per 100g/100cm ³	Marks Item-wise	Existing	Score (for PSEA use only)
34	Lipase	100 g	60	60		
35	Litmus paper – blue	2 pks of 10	30 per pk of 10	60		
36	Litmus paper – red	2pks of 10	30 per pk of 10	60		
37	Methylated spirit (denatured alcohol)	2 dm ³	30/dm ³	60		
38	Methylene blue	25 g	2.4/g	60		
39	Paraffin oil (local)	1 dm ³	60/ dm ³	60		
40	Pectinase	100 g	60	60		
41	Pepsin	25 g	2.4/g	60		
42	Petroleum ether	2.5 dm ³	24/dm ³	60		
43	Petroleum jelly/Vaseline	500 g	12	60		
44	pH indicator	10 bks	6/bk	60		
45	Potassium chloride	500 g	12	60		
46	Potassium hydrogen phosphate	500 g	12	60		
47	Potassium hydroxide (solid)	500 g	12	60		
48	Potassium nitrate	100 g	60	60		
49	Potassium permanganate	500 g	12	60		
50	Potassium phosphate	500 g	12	60		
51	Protease	100 g	60	60		
52	Rennin	100 g	60	60		
53	Sodium alginate	500 g	12	60		
54	Sodium citrate	100 g	60	60		
55	Sodium hydrogen carbonate	500 g	12	60		
56	Sodium hydroxide pellets	500g	12	60		
57	Sodium nitrate	500g	12	60		
58	Starch (soluble)	1000g	6	60		
59	Sucrose (analar)	250g	24	60		
60	Sulfuric acid (conc)	2.5dm ³	24/dm ³	60		
61	TBE buffer	200 cm ³	30	60		
62	Thiourea	500 g	12	60		
63	Trypsin	100g	60	60		
64	TTC (Triphenyl Tetrazonium Chloride)	100g	60	60		
65	Universal indicator BDH	100cm ³	60	60		
66	Urea	500 g	12	60		
67	Urease tablets	50 g	1.2/g	60		
68	Yeast powder	500 g	12	60		
		Sub-Total (Section D)		2100		

PREPARED SLIDES						
	Description	Quantity Required	Weightage per unit	Marks Item-wise	Existing	Score (for PSEA use only)
1.	Allium root tip (mitotic stages)	3	20	60		
2.	Amoeba	5	12	60		
3.	Anther T.S	3	20	60		
4.	Artery, Vein T.S	3	20	60		
5.	Bacteria	5	12	60		
6.	Blood smear showing RBC & WBC	5	12	60		
7.	Bronchus T.S	3	20	60		
8.	Ciliated Epithelium	3	20	60		
9.	Columnar Epithelium	3	20	60		
10.	Cuboidal Epithelium	3	20	60		
11.	Dicot leaf T.S	5	12	60		
12.	Dicot root T.S	5	12	60		
13.	Dicot stem L.S	3	20	60		
14.	Dicot stem T.S	5	12	60		
15.	Dodder and Host T.S	3	20	60		
16.	Dryopteris prothallus Antheridia	3	20	60		
17.	Duodenum T.S	3	20	60		
18.	Eye V.S	3	20	60		
19.	Human cheek cells	3	20	60		
20.	Hyaline Cartilage	3	20	60		
21.	Hydra with bud	3	20	60		
22.	Hydrilla T.S. Stem	3	20	60		
23.	Kidney T.S	3	20	60		
24.	Leaf structure-hydrophyte	3	20	60		
25.	Liver T.S	3	20	60		
26.	Lung T.S (alveoli)	3	20	60		
27.	Maize fruit V.S	3	20	60		
28.	Mammalian spermatozoa	3	20	60		
29.	Meiosis in Locust (testis)	3	20	60		
		Sub-Total (Section D)		1740		

	Description	Quantity Required	Weightage per unit	Marks Item- wise	Existing	Score (for PSEA use only)
31.	Monocot leaf T.S	5	12	60		
32.	Monocot root T.S	5	12	60		
33.	Monocot stem T.S	5	12	60		
34.	Mucor with sporangia	3	20	60		
35.	Muscle tissue	3	20	60		
36.	Nerve Cells	3	20	60		
37.	Oesophagus T.S	3	20	60		
38.	Ovary (mammalian) T.S	5	12	60		
39.	Ovary/Ovule T.S	3	20	60		
40.	Ovule- capsella	3	20	60		
41.	Pancreas T.S	3	20	60		
42.	Pinus T.S leaf (xerophytic)	3	20	60		
43.	Pollen	3	20	60		
44.	Root Nodule T.S	3	20	60		
45.	Saccharomyces budding (yeast)	3	20	60		
46.	Skin T.S	3	20	60		
47.	Small intestine T.S	3	20	60		
48.	Smooth muscle	3	20	60		
49.	Spinal Cord T.S	3	20	60		
50.	Spirogyra	5	12	60		
51.	Staphylococcus epidermis (albus)	3	20	60		
52.	Stomach T.S	3	20	60		
53.	Testis (mammalian) T.S	5	12	60		
54.	Tooth V.S	3	20	60		
55.	Trachea T.S	3	20	60		
56.	Yeast	3	20	60		
		Sub-Total (Section D)		1560		
			TOTAL Section D	21720		Score sect D

**Actual Marks Scored on Equipment &
Consumables (Sect. D)**

$\frac{\text{Score sect D}}{21720} \times 12000 = \underline{\hspace{2cm}}$

MARK SCHEME AND SCORE

SECTION	WEIGHTAGE	TOTAL MARKS	ACTUAL MARKS SCORED	% SCORE Section-wise
A. Physical Facilities	30%	12000		
B. Instructional Tools & Records	30%	12000		
C. Safety Items	10%	4000		
D. Equipment and Consumables	30%	12000		
OVERALL	100%	40000		

REMARKS AND SHORTCOMINGS

(With particular reference to conditions at page 1 and score obtained)

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Signature of PSEA Supervisor/Senior Supervisor (s)

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Signature of Manager

Date:

Date: