

# CBSE | DEPARTMENT OF SKILL EDUCATION

## MEDICAL DIAGNOSTICS (SUBJECT CODE: 828)

### MARKING SCHEME FOR CLASS XI (SESSION 2023-2024)

Max. Time: 3 Hours

Max. Marks: 60

#### General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **24 questions** in two sections – Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (6 + 18 =) 24 questions, a candidate has to answer (6 + 11 =) 17 questions in the allotted (maximum) time of 3 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (30 MARKS):**
  - i. This section has 06 questions.
  - ii. There is no negative marking.
  - iii. Do as per the instructions given.
  - iv. Marks allotted are mentioned against each question/part.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (30 MARKS):**
  - i. This section contains 18 questions.
  - ii. A candidate has to do 11 questions.
  - iii. Do as per the instructions given.
  - iv. Marks allotted are mentioned against each question/part.

#### SECTION A: OBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
<b>Q. 1</b>	<b>Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)</b>				
i.	Prepositional Phrase	CBSE STUDY MATERIAL	1	9	1
ii.	Team cohesion	CBSE STUDY MATERIAL	2	21	1
iii.	Header	CBSE STUDY MATERIAL	3	39	1
iv.	Personality factors	CBSE STUDY MATERIAL	4	54	1
v.	Social values	CBSE STUDY MATERIAL	4	57	1
vi.	NATIONAL FOREST POLICY	CBSE STUDY MATERIAL	5	66	1
<b>Q. 2</b>	<b>Answer any 5 out of the given 7 questions (1 x 5 = 5 marks)</b>				
i.	0.25-0.4 mg/dl	CBSE STUDY MATERIAL	1	19	1
ii.	180mg/dl	CBSE STUDY MATERIAL	1	18	1
iii.	Analyser method	CBSE STUDY MATERIAL	1	21	1
iv.	0-5 cells/cu.mm	CBSE STUDY MATERIAL	2	37	1
v.	15-30 minutes	CBSE STUDY MATERIAL	2	38	1
vi.	Zenker's fixative	CBSE STUDY MATERIAL	3	55	1
vii.	Alcohol or acetone	CBSE STUDY MATERIAL	3	50	1
<b>Q. 3</b>	<b>Answer any 6 out of the given 7 questions (1 x 6 = 6 marks)</b>				
i.	Steatorrhoea	CBSE STUDY MATERIAL	1	24	1
ii.	Cholesterol	CBSE STUDY MATERIAL	1	22	1
iii.	Sputum/phlegm	CBSE STUDY MATERIAL	1	31	1
iv.	Cell counted/ 0.9	CBSE STUDY MATERIAL	2	36	1
v.	Bacterial infections	CBSE STUDY MATERIAL	2	37	1

vi.	Rocking microtome	CBSE STUDY MATERIAL	3	66	1
vii.	Gram stain	CBSE STUDY MATERIAL	3	88	1
<b>Q. 4</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	a. pH paper strip method	CBSE STUDY MATERIAL	1	24	1
ii.	b. Saline & iodine wet mount	CBSE STUDY MATERIAL	1	28	1
iii.	c. Acid-fast bacillus stain (AFB)	CBSE STUDY MATERIAL	1	33	1
iv.	c. EDTA	CBSE STUDY MATERIAL	3	72	1
v.	a. Exudate	CBSE STUDY MATERIAL	2	35	1
vi.	b. Autolysis	CBSE STUDY MATERIAL	3	47	1
<b>Q. 5</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	c. Rothera's Test	CBSE STUDY MATERIAL	1	18	1
ii.	c. IHC	CBSE STUDY MATERIAL	3	114	1
iii.	a. Giemsa stain	CBSE STUDY MATERIAL	2	40	1
iv.	b. Oligoasthenospermia	CBSE STUDY MATERIAL	2	39	1
v.	a. Paraffin wax	CBSE STUDY MATERIAL	3	62	1
vi.	c. Hyposthenuria	CBSE STUDY MATERIAL	1	15	1
<b>Q. 6</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>				
i.	c. Oliguria	CBSE STUDY MATERIAL	1	12	1
ii.	a. Chylomicrons in urine	CBSE STUDY MATERIAL	1	13	1
iii.	c. Peritoneal	CBSE STUDY MATERIAL	2	37	1
iv.	a. increase number of cells i.e. to 400- 500 polymorphs per cu.mm	CBSE STUDY MATERIAL	2	36	1
v.	b. Histopathology	CBSE STUDY MATERIAL	3	44	1
vi.	a. Processing	CBSE STUDY MATERIAL	3	44	1

## SECTION B: SUBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
<b>Answer any 3 out of the given 5 questions on Employability Skills in 20 – 30 words each (2 x 3 = 6 marks)</b>					
<b>Q. 7</b>	Every sentence can be broken into two parts a) Complete Subject b) Complete Predicate	CBSE STUDY MATERIAL	1	12	2
<b>Q. 8</b>	Setting and prioritizing goal  Creating a schedule  Making lists of tasks  Balancing work and leisure  Breaking large tasks into smaller tasks (any 4)	CBSE STUDY MATERIAL	2	22	2
<b>Q. 9</b>	1. Select Find & Replace option from the Edit menu. 2. The Find & Replace dialog box appears. (Fig 32). a. Type the word to be searched in the search for box. b. Click the Find button to locate the word one by one.	CBSE STUDY MATERIAL	3	47	2

	Click the Find All button to highlight the word at all locations in the document. 3. When the search is finished, click Close button.				
<b>Q. 10</b>	Attitude is defined as a set of beliefs, emotions and behaviors towards a particular place, object, person, situation, event, ideas or thing.  Takes moderate risks, Analyses situations and plan actions	CBSE STUDY MATERIAL	4	59-60	2
<b>Q. 11</b>	1. Renewable Energy 2. Green Transport 3. Water Management 4. Waste Management	CBSE STUDY MATERIAL	5	63	2
<b>Answer any 3 out of the given 5 questions in 20 – 30 words each (2 x 3 = 6 marks)</b>					
<b>Q. 12</b>	<b>TRANSUDATE:</b> Filtrate of blood plasma No change in capillary Permeability  Few cells  Fluid Protein/Serum Protein <0.5  Specific Gravity-Low  <b>EXUDATE:</b> Inflamed tissue oedema Increased capillary Permeability  <b>More cells</b>  Fluid Protein/Serum Protein >0.5  Specific Gravity-High	CBSE STUDY MATERIAL	2	35	2
<b>Q. 13</b>	1. Be cheap, stable and safe to handle. 2. Prevent autolysis and bacterial decomposition. 3. Penetrate the tissue quickly and be rapid acting. 4. Preserve tissues in their most natural state and fix all its components (protein, carbohydrate, fat, etc). 5. Harden the tissue for further handling. (any 2)	CBSE STUDY MATERIAL	3	48	2
<b>Q. 14</b>	Bloody pericardial fluid may be seen in traumatic tap, tuberculosis, bacterial pericarditis	CBSE STUDY MATERIAL	2	38	2
<b>Q. 15</b>	Sugar : Benedict's Test Procedure :- To 5 ml	CBSE STUDY	2	17	2

	of Benedict's reagent taken in an 18 x 150 mm glass tube, add 8 drops (0.5ml) of urine, mix well and boil for 2-3 minute over the flame. Cool the tube and observe for any colour change.	MATERIAL			
<b>Q. 16</b>	Factors – agitation, heat, viscosity and vaccum	CBSE STUDY MATERIAL	3	60	2

**Answer any 2 out of the given 3 questions in 30– 50 words each (3 x 2 = 6 marks)**

<b>Q. 17</b>	<p>CRYSTALS FOUND IN ACIDIC URINE a. Uric acid crystals: are rosette shaped Can be present normally. Also seen in gout, chronic nephritis b. Calcium oxalate crystals: are envelope shaped Can be present after ingestion of tomatoes, spinach, oranges, also seen in diabetes milletus, liver diseases</p> <p>CRYSTALS FOUNDI N ALKALINE URINE a. Tripe phosphate (ammonium magnesium phosphate): are colorless prisms with 3-6 sides seen in normal urine, chronic cystitis, pyelitis b. Amorphous phosphate: are present in granular form – have no clinical significance c. Calcium carbonate: are colorless in the form spherical, dumbbell shape or granular form have no clinical significance d. Ammonium biurates: are yellow brown spherical bodies with or without irregular spindles</p>	CBSE STUDY MATERIAL	1	21-22	3
<b>Q. 18</b>	Normal Cerebro Spinal Fluid. The specific gravity is 1.003-1.008. Normally the cells present are all lymphocytes, and their number is less than 5 per Cubic mm. CSF is colour less, clear and any colour is abnormal	CBSE STUDY MATERIAL	2	35	3
<b>Q. 19</b>	STEPS IN TISSUE PROCESSING 1. Receipt of samples and identification 2. Specimen entry and acknowledgement 3. Grossing 4. Tissue processing 5. Embedding 6. Section cutting 7. Staining (Haematoxylin & Eosin and special stains) 8. Typing and dispatch of reports 9. Confidentially of reports 10. Critical test reports/ Quality control 11. Amendment of reports 12. Issue of slides 13. Review of outside slides 14. Maintenance of records/ digital archiving	CBSE STUDY MATERIAL	3	45	3

**Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)**

<p><b>Q. 20</b></p>	<p>Specific gravity at a constant temperature is the ratio of the weight of the volume of the urine to the weight of same volume of distilled water.</p> <p><b>Value:</b> 1.003 to 1.035</p> <p><b>Procedure:</b></p> <p>1. Remove the set strip from the bottle after checking the expiry date and re-cap bottle immediately. 2. In case of discoloration or darkening of the reagent areas do not use the strip. 3. Dip the test strip completely for no more than 1 sec. in fresh well mixed uncentrifuged urine. 4. Remove the strip along the rim of the container to remove excess urine. 5. Blot one side of the test strip on absorbent paper on one side to remove remaining urine and prevent missing of chemicals. 6. Hold the strip up horizontally and compare the colors developed with the colour chart on the bottle label. 7. The reading time is 60-120 sec is critical for optimal results.</p>	<p>CBSE STUDY MATERIAL</p>	<p>1</p>	<p>14</p>	<p>4</p>
<p><b>Q. 21</b></p>	<p><b>Methods:</b></p> <p>a) Early morning urine The best urine specimen for routine analysis is collected in the morning. It is usually concentrated and has an acid pH. Casts and cells are poorly preserved in dilute or alkaline urine and traces of dissolved substances such as protein and sugar can be missed if the urine is very dilute. b) Random urine This specimen can also collected at any time and is convenient for the patient and is suitable for most screening purposes. c) Preservative Used For routine analysis, no preservative is required but the urine is best examined fresh. Bacterial growth will ruin a specimen if analysis delayed for more than 3 hours. Refrigeration is the best way to preserve it if analysis is delayed. Refrigeration for more than 24 hours is not recommended. d) Container for urine collection The container used must be thoroughly clean and free from any detergent or disinfectant residue since the oxidants contained in such cleaning agents may cause the test areas for glucose</p>	<p>CBSE STUDY MATERIAL</p>	<p>1</p>	<p>10</p>	<p>4</p>

	<p>and blood to indicate false positive results. After the urine is collected, the container should preferably be sealed.</p> <p>The container used must be thoroughly clean and free from any detergent or disinfectant residue since the oxidants contained in such cleaning agents may cause the test areas for glucose and blood to indicate false positive results.</p>				
<b>Q. 22</b>	<p>Take a clean grit free slide. b. Put one drop of normal saline on one side of the slide &amp; a drop of Lugol's iodine on another side of the slide. c. Add on one drop of liquid stool to each of the normal saline &amp; iodine drop. In case of solid or semisolid specimen mix small portion of stool to each of the drop. d. Cover the preparation with clean, grit free cover slip. Separate cover slips are used for saline &amp; iodine preparation. e. Observe both the preparation for presence of ova or cyst or live parasites under low &amp; high power objectives of the microscope.</p>	CBSE STUDY MATERIAL	2	21	4
<b>Q. 23</b>	<p>To evaluate motility, a small drop of liquefied semen is placed on a microscopic slide and then covered with a cover slip and examined under the microscope with low and high power magnification. Motility can be evaluated by scanning several fields with a high dry objective, until a total of at least "200" spermatozoa have been observed. It is essential to focus entire depth of a given field so as to include non-motile sperm that have settled to the bottom of the medium. The sperm motility is graded as a) Rapid Progressive motility: This is the motility along a linear track, covering a distance of at least 20 micro mt./ sec ( half the length of the spermatozoa). b) Slow or sluggish progressive motility: This is the non linear motility c) Non- progressive motility: spermatozoa move their tails but do not move forward. d) Immotility (non- motile).</p>	CBSE STUDY MATERIAL	1	40	4
<b>Q. 24</b>	<p>Microtomy is the means by which tissue can be sectioned and attached to a surface so that examination by microscopy can take place. Sectioning paraffin wax embedded tissue blocks is the commonest way of</p>	CBSE STUDY MATERIAL	3	67	4

achieving this. The basic instrument used in microtomy is a microtome. Types of microtome 1. Hand microtome (used in botanical sections). 2. Rocking microtome (used for sectioning animal tissues of soft nature). Freezing microtome (have a non movable tissue block with the cutting action being the motion of the knife). 3. Base sledge microtome (can be used for sectioning of tissues of all types, sizes and degree of hardness). 4. Vibrating knife microtome (can cut sections without tissue fixation, impregnation or freezing; used for animal and botanical studies).