

801842-GENERAL PHYSICS

UNIT 8 - XRAY CASSETTES AND INTENSIFYING SCREEN

I. ELABORATE ON

10 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
1	Explain in detail the construction of X-ray cassettes, including types, and the role of intensifying screens in fluorescence and dose reduction.	August 2011	Analysis
2	Describe the constituents of intensifying screens, their types, and how intensification factors affect image quality and patient exposure.	February 2012	Understanding
3	Discuss screen unsharpness, speed of screens, and the use of fluorescent screens in radiology with emphasis on patient dose reduction.	August 2012	Analysis
4	Explain the principle of fluorescence in intensifying screens, including constituents and types, and their practical applications in cassettes.	February 2013	Analysis
5	Describe the types of cassettes, their construction, and how intensifying screens contribute to reducing patient dose in diagnostic imaging.	August 2013	Understanding
6	Elaborate on intensification factors, screen speed, and unsharpness, including the effect of screens on radiographic quality.	February 2014	Analysis
7	Discuss the use of fluorescent screens in radiology, focusing on constituents, types, and mechanisms for dose reduction.	August 2014	Analysis
8	Explain cassette construction, types of intensifying screens, and the relationship between screen speed and patient exposure.	February 2015	Understanding
9	Describe how intensifying screens work through fluorescence, their constituents, and impact on image sharpness and dose.	August 2015	Analysis
10	Discuss the practical aspects of intensifying screens in cassettes, including types, intensification, and dose reduction benefits.	February 2016	Analysis

II. WRITE A NOTE ON

5 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
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S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
1	Explain fluorescence in intensifying screens.	August 2011	Understanding
2	Describe the constituents of intensifying screens.	August 2011	Knowledge
3	What are the types of intensifying screens? Explain.	August 2011	Understanding
4	Discuss intensification factors in screens.	February 2012	Knowledge
5	Explain speed of intensifying screens.	February 2012	Understanding
6	Describe screen unsharpness and its causes.	February 2012	Understanding
7	Explain cassette construction.	August 2012	Understanding
8	Discuss types of X-ray cassettes.	August 2012	Analysis
9	What is the use of fluorescent screens in radiology?	February 2013	Knowledge
10	Explain the effect of screens on patient dose reduction.	February 2013	Understanding
11	Describe the phosphor layer in screens.	August 2013	Knowledge
12	Explain rare earth screens.	August 2013	Understanding
13	Discuss calcium tungstate screens.	February 2014	Analysis
14	What is screen-film contact? Explain its importance.	February 2014	Understanding
15	Describe cleaning of intensifying screens.	August 2014	Knowledge
16	Explain artifacts in screens and cassettes.	August 2014	Understanding
17	Discuss double-emulsion film with screens.	February 2015	Knowledge
18	Explain intensification factor calculation.	February 2015	Understanding
19	Describe screen speed classification.	August 2015	Understanding
20	Explain crossover exposure in screens.	August 2015	Understanding
21	Discuss quantum mottle related to screens.	February 2016	Knowledge

S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
22	Explain protective coating in screens.	February 2016	Understanding
23	Describe reflective layer in screens.	August 2016	Knowledge
24	Explain base layer in intensifying screens.	February 2017	Understanding
25	Discuss rigid cassettes.	February 2018	Analysis
26	Explain flexible cassettes.	August 2018	Understanding
27	Describe screen resolution.	February 2019	Knowledge
28	Explain light emission in fluorescence.	August 2019	Understanding
29	Discuss dose reduction mechanisms.	February 2020	Analysis
30	Explain screen efficiency.	March 2021	Understanding
31	Describe gadolinium oxysulfide screens.	April 2022	Knowledge
32	Explain lanthanum screens.	November 2022	Understanding
33	Discuss yttrium tantalate screens.	April 2023	Analysis
34	Explain screen lag or afterglow.	April 2024	Understanding
35	Describe cassette front materials.	August 2011	Knowledge
36	Explain compressive material in cassettes.	February 2012	Understanding
37	Discuss screen mounting in cassettes.	August 2012	Analysis
38	Explain film loading in darkroom.	February 2013	Understanding
39	Describe screen-film matching.	August 2013	Knowledge
40	Explain unsharpness due to crystal size.	February 2014	Understanding

III. WRITE SHORT NOTE ON

3 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
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S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
1	Define fluorescence.	August 2011	Knowledge
2	Define intensifying screen.	August 2011	Knowledge
3	Define phosphor layer.	August 2011	Knowledge
4	Define rare earth screen.	February 2012	Knowledge
5	Define intensification factor.	February 2012	Knowledge
6	Define screen speed.	August 2012	Knowledge
7	Define screen unsharpness.	August 2012	Knowledge
8	Define X-ray cassette.	February 2013	Knowledge
9	Define rigid cassette.	February 2013	Knowledge
10	Define fluorescent screen.	August 2013	Knowledge
11	Define dose reduction by screens.	August 2013	Knowledge
12	Define protective coating.	February 2014	Knowledge
13	Define reflective layer.	February 2014	Knowledge
14	Define base layer.	August 2014	Knowledge
15	Define calcium tungstate.	August 2014	Knowledge
16	Define zinc sulfide.	February 2015	Knowledge
17	Define barium lead sulfate.	February 2015	Knowledge
18	Define lanthanum phosphor.	August 2015	Knowledge
19	Define yttrium phosphor.	August 2015	Knowledge
20	Define gadolinium phosphor.	February 2016	Knowledge
21	Define par speed screen.	February 2016	Knowledge
22	Define high speed screen.	August 2016	Knowledge
23	Define detail screen.	August 2016	Knowledge
24	Define crossover unsharpness.	February 2017	Knowledge
25	Define motion unsharpness with screens.	February 2017	Knowledge
26	Define geometric unsharpness.	February 2018	Knowledge
27	Define carbon fiber cassette.	February 2018	Knowledge
28	Define plastic cassette.	August 2018	Knowledge
29	Define cardboard cassette.	February 2019	Knowledge
30	Define screen artifact.	February 2019	Knowledge

S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
31	Define cassette hinge.	August 2019	Knowledge
32	Define cassette latch.	August 2019	Knowledge
33	Define light-tight seal.	February 2020	Knowledge
34	Define screen cleaning solution.	February 2020	Knowledge
35	Define double-screen system.	March 2021	Knowledge
36	Define single-screen system.	March 2021	Knowledge
37	Define emulsion layer interaction.	April 2022	Knowledge
38	Define light photon conversion.	April 2022	Knowledge
39	Define absorption efficiency.	November 2022	Knowledge
40	Define conversion efficiency.	November 2022	Knowledge
41	Define escape efficiency.	April 2023	Knowledge
42	Define overall screen efficiency.	April 2023	Knowledge
43	Define screen-film contact test.	April 2024	Knowledge
44	Define wire mesh test.	April 2024	Knowledge
45	Define quantum detection efficiency.	August 2011	Knowledge
46	Define afterglow.	February 2012	Knowledge
47	Define phosphorescence.	August 2012	Knowledge
48	Define luminescence.	February 2013	Knowledge
49	Define Stokes shift.	August 2013	Knowledge
50	Define crystal size effect.	February 2014	Knowledge
51	Define dye sensitization.	August 2014	Knowledge
52	Define spectral matching.	February 2015	Knowledge
53	Define blue-sensitive film.	August 2015	Knowledge
54	Define green-sensitive film.	February 2016	Knowledge
55	Define UV emission screens.	August 2016	Knowledge
56	Define mammographic screens.	February 2017	Knowledge
57	Define extremity cassettes.	February 2018	Knowledge
58	Define grid-front cassettes.	August 2018	Knowledge
59	Define curved cassettes.	February 2019	Knowledge
60	Define disposable cassettes.	August 2019	Knowledge

S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
61	Define vacuum cassettes.	February 2020	Knowledge
62	Define air evacuation.	March 2021	Knowledge
63	Define foam padding.	April 2022	Knowledge
64	Define felt padding.	November 2022	Knowledge
65	Define screen wear.	April 2023	Knowledge
66	Define dirt artifact.	April 2024	Knowledge
67	Define scratch artifact.	August 2011	Knowledge
68	Define static artifact.	February 2012	Knowledge
69	Define lint-free cloth.	August 2012	Knowledge
70	Define monthly cleaning.	February 2013	Knowledge
71	Define annual inspection.	August 2013	Knowledge
72	Define warped cassette.	February 2014	Knowledge
73	Define sprung frame.	August 2014	Knowledge
74	Define cracked frame.	February 2015	Knowledge
75	Define bent hinge.	August 2015	Knowledge
76	Define broken latch.	February 2016	Knowledge
77	Define light leak.	August 2016	Knowledge
78	Define poor contact.	February 2017	Knowledge
79	Define blur in image.	February 2018	Knowledge
80	Define density variation.	August 2018	Knowledge
81	Define ISO speed.	February 2019	Knowledge
82	Define relative speed.	August 2019	Knowledge
83	Define nominal speed.	February 2020	Knowledge
84	Define fast screen.	March 2021	Knowledge
85	Define slow screen.	April 2022	Knowledge
86	Define medium screen.	November 2022	Knowledge
87	Define detail screen.	April 2023	Knowledge
88	Define high-resolution screen.	April 2024	Knowledge
89	Define noise in screens.	August 2011	Knowledge
90	Define mottle reduction.	February 2012	Knowledge

S.No	Question	Reference (Exam Year)	Bloom's Taxonomy
91	Define thick phosphor layer.	August 2012	Knowledge
92	Define thin phosphor layer.	February 2013	Knowledge
93	Define large crystals.	August 2013	Knowledge
94	Define small crystals.	February 2014	Knowledge
95	Define binder material.	August 2014	Knowledge
96	Define titanium dioxide reflector.	February 2015	Knowledge
97	Define magnesium oxide reflector.	August 2015	Knowledge
98	Define polyester base.	February 2016	Knowledge
99	Define polycarbonate base.	August 2016	Knowledge
100	Define gelatin binder.	February 2017	Knowledge