

**SUBJECT: 1423 CARDIO PULMONARY BYPASS AND COMPLICATIONS, STERILE
TECHNIQUES AND SURGICAL ASEPSIS MAINTENANCE**

UNIT I- COMPLICATIONS DURING CONDUCT OF BYPASS- QUESTION BANK

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

I. ELABORATE ON

10 MARKS

S.No	Question	Reference (Month/Year)	Bloom's Taxonomy
1	Complication while initiating bypass.	Feb 2015, Aug 2015, Feb 2016	Analyze/Understand
2	Complications while initiating and at the termination of bypass.	Aug 2017, Feb 2018	Analyze/Understand
3	Elaborate on complications during and termination of Cardiopulmonary Bypass.	Aug 2018, Apr 2023	Analyze/Evaluate
4	Enlist the complications of Cardiopulmonary Bypass. Describe in detail about massive air embolism and its management.	Feb 2021, Sep 2022	Analyze/Evaluate
5	Enlist the complications of Cardiopulmonary Bypass. Describe in detail about myocardial protection.	Sep 2022	Analyze/Apply
6	Complications during Cardiopulmonary Bypass.	Nov 2023	Analyze
7	Note on Reperfusion injury and problems faced in long pump run/cross clamp.	Jan 2025	Analyze/Apply
8	Inadequate systemic pressure during cardiopulmonary bypass	Feb 2014	Analyze/Evaluate
9	Describe about Heparin and its pathway with diagram. Discuss in detail about Heparin Induced Thrombocytopenia.	Aug 2016	Analyze/Evaluate
10	Define SIRS (Systemic Inflammatory Response Syndrome) and also explain it and also describe the common CPB complications.	Aug 2016	Analyze/Evaluate
11	Jehovah witness cases and it perfusion technique and write a note on Sickle Cell Anaemia management on CPB.	Feb 2017	Analyze/Apply

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S.No	Question	Reference (Month/Year)	Bloom's Taxonomy
12	Write a note on Reperfusion Injury, oxygen Free Radicals, and also inflammatory Mediators in CPB. How will you manage such complications?	Feb 2017	Analyze/Apply
13	Causes and management of Inadequate Systemic Pressure during Cardiopulmonary Bypass.	Nov 2023	Analyze/Apply
14	Safety methods and management of Accidents during Cardiopulmonary Bypass.	April 2024	Analyze/Apply
15	Describe the various techniques of arterial and venous cannulation and its complications.	Jan2025	Analyze/Apply

II. WRITE NOTES ON

5 MARKS

S.No	Question	Reference (Month/Year)	Bloom's Taxonomy
1	Loss of electrical power during cardiopulmonary bypass	Aug 2013, Aug 2014, Aug 2015, Feb 2016, Aug 2017, Feb 2018, Feb 2019, Aug 2019, Aug 2018, Aug 2022, Jan 2025	Apply/Analyze
2	High arterial line pressure	Feb 2014, Aug 2014, Aug 2015	Analyze/Evaluate
3	Temperature related complication on CPB — explain in detail	Aug 2016, Feb 2017	Analyze/Understand
4	Management of power failure during Cardio Pulmonary Bypass	Sep 2022	Apply/Analyze
5	Management of air entry into venous line	Nov 2023, Jan 2025	Apply/Analyze
6	Effects and complications of CPB on various organs (may include urine output and renal complications)	Aug 2016, Feb 2019, Dec 2020	Understand/Analyze
7	Management of pH during Cardiopulmonary Bypass	Nov 2023	Apply

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S.No	Question	Reference (Month/Year)	Bloom's Taxonomy
8	Activated clotting time (ACT) (relates to adequate anticoagulation)	Feb 2014, Feb 2015, Aug 2015, Feb 2016	Understand/Apply
9	Causes for low mean arterial pressure	Apr 2024	Analyze
10	Temperature management during bypass	Aug 2014, Aug 2015, Aug 2018, Feb 2019, Apr 2023	Understand/Apply
11	Precautions to be taken during rewarming	Sep 2022, Apr 2023	Understand/Apply
12	Skin preparation for invasive procedures (infection/asepsis could relate to complications)	Apr 2023	Understand/Apply
13	Causes and management of low venous return during Cardiopulmonary bypass (MAP, pressure)	Feb 2021, Apr 2023	Analyze/Apply
14	Role of Heparin in CPB (Anticoagulation)	Feb 2021, Apr 2023	Understand/Analyze
15	Management of loss of electrical power supply during CPB	Jan 2025	Apply/Analyze
16	Effects and complications of CPB on various organs	Aug 2016, Feb 2019, Dec 2020	Analyze
17	Temperature related complication on CPB — explain in detail	Aug 2016, Feb 2017	Understand/Analyze
18	Systemic air embolism (complication and management)	Feb 2015, Feb 2019, Dec 2020	Apply
19	Complications while initiating the bypass	Nov 2023, Jan 2025	Understand/Apply
20	Complications of IABP and draw a picture of positioning of IABP	Aug 2016, Feb 2017, Apr 2024	Apply/Create

III. WRITE SHORT NOTES ON

3 MARKS

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S.No	Question	Reference (Month/Year)	Bloom's Taxonomy
1	Loss of electrical power during CPB	Feb 2014, Aug 2014, Aug 2015, Feb 2016, Aug 2017, Feb 2018, Feb 2019, Aug 2019, Aug 2018, Aug 2022, Apr 2023	Apply/Analyze
2	Mean arterial pressure during CPB	Aug 2013, Feb 2014, Feb 2017, Apr 2023	Understand/Analyze
3	Factors affecting (or causes of) high line pressure during bypass	Apr 2025	Analyze
4	Causes of poor venous return and management strategies	Feb 2017, Feb 2018, Aug 2018, Feb 2019, Apr 2023, Jan 2025	Apply/Analyze
5	Heparin management during CPB (including "define heparin reversal")	Aug 2015, Feb 2019, Apr 2024	Understand/Apply
6	ACT factors (factors affecting activated clotting time)	Apr 2025	Understand
7	Causes of haemolysis/haematuria and their management on CPB (renal/urine output)	Feb 2015, Aug 2015, Feb 2016, Aug 2017, Feb 2018, Feb 2019, Apr 2023, Sep 2022	Apply/Analyze
8	Indicate important parameters to monitor during CPB (including temperature, urine output, MAP etc.)	Apr 2024, Apr 2025	Understand
9	Name commonly used sites for temperature monitoring	Feb 2016, Aug 2018, Apr 2023	Remember
10	Cooling and rewarming for circulatory arrest (temperature management)	Aug 2013, Feb 2014, Feb 2018	Understand
11	What is Alpha stat and pH stat?	Feb 2017, Apr 2023	Remember/Understand
12	Specify the management of loss of electrical power during CPB	Apr 2024	Apply/Analyze
13	Inadequate venous drainage	Apr 2025	Understand/Apply

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S.No	Question	Reference (Month/Year)	Bloom's Taxonomy
14	Complications of aortic cannulation	Feb 2014, Aug 2014, Aug 2018, Feb 2021, Sep 2022	Remember/Understand
15	Oxygenator malfunction (during bypass complication)	Feb 2014, Feb 2019	Understand
16	Causes and prevention of systemic air embolism	Apr 2024	Understand/Apply
17	Complications of ECMO	Apr 2025	Understand
18	Air lock and its solution	Feb 2013, Feb 2015, Aug 2016, Apr 2023	Apply
19	Haemolysis/Haematuria on CPB and how will you manage it?	Aug 2016, Feb 2017, Apr 2023, Sep 2022	Apply
20	Causes of high line pressure	Apr 2025	Analyze