

NNL ACADEMY

Presents

STRIKE

For NORCET/CRE/EXIT

and other Nursing Competitive Exams

PRACTICE WITH PRECISION



SUBJECTS COVERED

- APPLIED ANATOMY & PHYSIOLOGY
- NURSING FOUNDATION
- APPLIED BIOCHEMISTRY AND NUTRITION
- APPLIED MICROBIOLOGY
- PHARMACOLOGY
- PATHOLOGY & GENETICS
- ADULT HEALTH (MEDICAL SURGICAL) NURSING
- CHILD HEALTH NURSING
- MENTAL HEALTH NURSING
- COMMUNITY HEALTH NURSING
- MIDWIFERY/OBSTETRICS AND GYNECOLOGY NURSING
- NURSING RESEARCH & STATISTICS
- NURSING EDUCATION
- NURSING MANAGEMENT & LEADERSHIP
- FORENSIC NURSING
- APTITUDE AND REASONING

FEATURES

- Master Every Question, Strike Every Exam
- Subject-wise and topic-wise for systematic learning of 3000 MCQs with Rationale
- Includes Assertion & Reason (A&R) questions
- 500–600 high-quality Image-Based Question (IBQ) from clinical practice,
- Covers instruments, drugs, ECGs, radiology & diagnostic charts
- Retrospect & Revise Charts
- For all Nursing competitive Exams

EDITED BY

Dr Sudhir Kumar Singh
Ankita

CONTRIBUTORS

Chitra Pandey
Priyadarshini Balan
Arpita Saraswat
Sneka Balan

The Best set of Books for your NORCET Preparation
360° preparation with NNL Study Material

Masterstroke/Strike



Vol I: Part A, B & C Conceptual Theory

- Comprehensive coverage of subjects, integrating structured class notes with daily Live classes
- Expertly curated and regularly updated notes by the Masterminds as per the NORCET Exam pattern
- Designed for quick retention, strengthening concepts and enhancing recall
- Extensive coverage of high-yield topics providing high probability of strike rate in the examination
- 600+ vital pedagogical aids, like flowcharts, diagrams, images, tables, illustrations, etc. for easy memorization and recapitulation

Vol II Strike QB (New Edition of Conceptual Practice)

- Master Every Question, Strike Every Exam
- Subject-wise and topic-wise for systematic learning of
- 3000 MCQs with Rationale
- Includes Assertion & Reason (A&R) questions
- 500–600 high-quality Image-Based Question (IBQ) from clinical practice,
- Covers instruments, drugs, ECGs, radiology & diagnostic charts
- Retrospect & Revise Charts
- For all Nursing competitive Exams



Vol III Conceptual Revision (LMR)

- 300+ New oneliners based on NORCET 9.0 & 8.0 Prelims and Mains Exam
- 5500+ High-Yield One-Liners: Essential points of all 14 subjects, perfect for last-minute revision
- 200+ Important Tables: Values and updates of key clinical subjects for quick reference
- 200+ Important Images/Flowcharts: Visual aids to help understand and remember important concepts
- 100+ Clinical images as image bank with description
- 100+ Instrument images with usage
- 1500+ Assess Yourself: Assessment Qs at the end of each subject—help reinforce learning, test understanding, and preparation.



Upcoming
Books

30
% off
Avail special offers on all NNL Prints

Available on



NNL ACADEMY *Presents*



STRIKE

For NORCET/CRE/EXIT and other Nursing Competitive Exams

PRACTICE WITH PRECISION

Subjects Covered

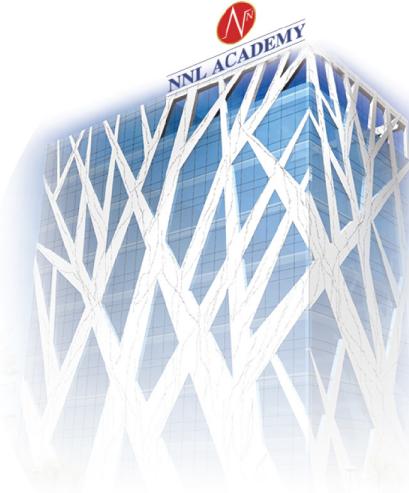
• Applied Anatomy and Physiology	• Adult Health (Medical Surgical) Nursing	• Midwifery/Obstetrics and Gynecology Nursing
• Nursing Foundations	• Child Health Nursing (Pediatrics)	• Nursing Research and Statistics
• Applied Biochemistry and Nutrition	• Mental Health Nursing	• Nursing Education
• Applied Microbiology	• Community Health Nursing	• Nursing Management and Leadership
• Pharmacology	• Forensic Nursing	• Aptitude and Reasoning
• Pathology and Genetics		

Edited by

Sudhir Kumar Singh
Ankita

Contributors

Arpita Saraswat
Chitra Pandey
Priyadarshini Balan
Sneka Balan



Published by



A Unit of Nursing Next Exam Prep Pvt Ltd

2nd Floor, AMCO Tower, A-5,6,7, Amaltash Marg, A-Block Sector 9, Noida, Uttar Pradesh 201301

Website: www.nnlone.in, e-mail: feedback@nursingnextlive.in, Contact: +91-9053791655



ISBN: 978-93-94630-92-5

Copyright © Nursing Next Exam Prep Pvt Ltd

First Edition: 2022

All rights are reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage and retrieval system without permission, in writing, from the publishers.

Published by

Bhupesh Aarora (Founder and CEO)

Nursing Next Live A Unit of Nursing Next Exam Prep Pvt. Ltd

2nd Floor, AMCO Tower, A-5,6,7, Amaltash Marg, A-Block, Sector 9, Noida, Uttar Pradesh 201301

Ph: +91-9053791655

e-mail: admin@nursingnextlive.in

Website: www.nursingnextlive.in

NNL Academy

C-32, KRBL Tower, 1st Floor, Sector 62 Rd, Sector 62, Noida, Uttar Pradesh 201309

Ph: +91-9536399555

e-mail: nnlacademy@nursingnextlive.in

NNL EduHub

SSK Tower, 2nd Floor, Plot No. 23, Vishwa Nagar, Opposite Metro Pillar No. 75,

New Sanganer Road, Sodala, Jaipur 302019

Ph: +91-9616009555

Printed at:

FROM THE PUBLISHER'S DESK

It is said, "The future belongs to those who believe in themselves and make efforts toward realizing their dreams." As students, your dedication and belief in your goals will pave the way for your success. We are proud that you have chosen NNL One as your partner in this journey and we are committed to helping you turn those dreams into reality with our unwavering support and guidance.

With each passing year the standard of nursing competitive exams is increasing, with greater emphasis on clinical understanding. In response, we are continually upgrading our content to provide you with the best learning experience.



We have introduced NNL Academy Strike for NORCET/CRE/EXIT and other National Competitive Exams, learn with precision first ever book by our expert faculty, tailored for subject wise, topic wise systematic learning of 500 MCQs with explanations, 600 image based high quality questions for clinical practice, Instruments, Drugs, ECG's, Radiology diagnostic charts, retrospect and revise charts and Mock Tests specifically designed for practice leading to perfection.

Recognizing the importance of both traditional classroom learning and online education, we observed that some students face challenges while engaging themselves fully in online classes. This led to the development of NNL Academy.

Whether your goal is to secure a government job or pursue a nursing career abroad, we are here to help you achieve it. At NNL Academy, we aim not only for your academic excellence but also to nurture essential life skills, leadership qualities and empathy—critical for success in nursing. Join us for face-to-face interactions with experienced educators and peers and engage in real-time discussions, practical demonstrations and personalized guidance to enhance your learning journey.

NNL Academy is revolutionizing nursing education by introducing several industry-first innovations. For the first time, you can learn from top medical and nursing educators from across the country together at one place. We offer a unique blend of interactive classroom sessions and online support through our App. Our state-of-the-art infrastructure includes campus-wide free WiFi and an in-house CBT lab designed to simulate actual exam conditions, enhancing your exam readiness. Experience practical learning through advanced simulations and access high-quality video lessons on-demand anytime, anywhere with the NNL One App. Additionally, benefit from continuous assessment and detailed personalized performance analysis to track your progress and excel in your studies.

This book is a masterpiece and has been developed with the best support of Mastermind Faculties and Subject Experts who have played a vital role in reviewing the content. Special thanks to the entire publishing and designing team of Nursing Next Live.

Remember, we are committed to, "*Bringing learning to people, instead of people going for learning.*"

Bhupesh Arora

Founder and CEO

ADMISSIONS
Open
ENROL NOW!

For more details, call:
9536399555 | 9616009555

Aiming for
AIIMS NORCET 11.0?
Join us to pursue your dreams today!

with

Plan MLB Pro

Ruby Batch, Pearl Batch & Blue Sapphire

The Mastermind Virtual/Offline/Satellite Live Batch

Pearl Batch
Starting From:
1st Feb 2026

Blue Sapphire
Batch
Starting From:
April 2026



What's Inside

Conceptual Classes

- 600+ hrs of Conceptual Classes of all subjects by the Masterminds
- 900 hrs of recorded lectures of all subjects by the Masterminds in NNL One App

Conceptual Learning & Revision through Test & Discussion (New)

- 50+ hrs of Revision class by the Subject experts
- 50+ hrs of Test Discussion (Face-to-Face at Jaipur centre & Virtual Live at NNL Academy) Live based on Comprehensive Subject Assessment Test Analysis
- 40+ hrs of Chalo Milkar Padhein (Revision through One liners)
- 13 Comprehensive Subject Assessment Test

Conceptual Practice

- 15000 Topic-wise Qs in Plan Q Bank
- 5000 Qs in Monthly Test Plan covering Mini Test, Subject-wise or System-wise test, NNSAT, IBQ, Spl Strike Rate tests)

Evaluation Tests:

- 79 Topic Assessment Test (TAT),
- 13 Subject Assessment Test (SAT) &
- 6 Monthly Level Tests

Fastarck & Strike for NORCET 11.0 Test

- 200+ hrs of 2nd Revision of all the subjects by the Masterminds
- **Grand Tests** (Prelims & Mains), IBQ
- **NORCET Recall Test** (2020-2025)
- 15+ Hrs of NORCET Recall Sessions NORCET 9.0
- 2 Special Strike Rate Test (Prelims & Mains)
- 2 National Pre NORCET Tests (Prelims & Mains)
- **Prediction Series**
- **NORET Summit**

Study Material



- All subjects workbook (Print format)
- Masterstroke Vol I-III Printed
- Daily Class Notes uploaded in App
- 600+ High Yield Topics E Notes of all Subjects uploaded & 100+ new E Notes added every month

Bonus Content



- Doubt Sessions
- Topper's Session
- Strategy for NORCET Exam
- Progress Review Sessions
- Guidance & Counselling by Margdarshak

Get free
access to



Plan C+ Platinum +
PRIME Edition



Plan QB PRIME & +
Strike 2.0 Test



One Time Revision(OTR)
by Ms Sabina

Meet
The Masterminds



Pre-Book TODAY!

MRP:
~~₹50,000/-~~ ₹40,000/-
(All Inclusive)

Group offer: Also available (Enroll with min 10 Friends)

Early Bird Offer 20% off

Table of Contents

S. No.	Subjects Covered	No. of Questions	Pages
1.	Applied Anatomy and Physiology	70	1–25
2.	Nursing Foundations	350	26–149
3.	Applied Biochemistry and Nutrition	60	150–171
4.	Applied Microbiology	50	172–190
5.	Pharmacology	180	191–248
6.	Pathology and Genetics	30	249–263
7.	Adult Health (Medical Surgical) Nursing	690	264–532
8.	Child Health Nursing (Pediatrics)	340	533–663
9.	Mental Health Nursing	290	664–768
10.	Community Health Nursing	310	769–880
11.	Forensic Nursing	420	881–886
12.	Midwifery/Obstetrics and Gynecology Nursing	20	887–1041
13.	Nursing Research and Statistics	10	1042–1047
14.	Nursing Education	10	1048–1051
15.	Nursing Management and Leadership	20	1052–1055
16.	Aptitude and Reasoning	150	1056–1076
	Total Questions	3000	

Welcome To

TARGET HIGH DIGITAL

Your Success, Now Digital!

Your **one-stop solution** for all competitive **Nursing Exams**

Read, Practice, Revise and Recall with expert-curated Plans and Test series.



TH MSC
MSc Entrance
Exam



TH MNS
Military Nursing Services



TH CHO
Community Health
Officer



TH NORCET



Target RRB



Target ESIC



Target CRE



Target KGMU



Target NIMHANS



Target DSSSB

One App, Every Nursing Exam



Your Journey to Success Begins with TH Digital powered by:
TARGET HIGH The most trusted book for Nursing competitive Exams



READ

Strengthen your theory with **Mind Maps**, **One-Minute Learning**, **Appendices**, and **Golden Points**



PRACTICE

Attempt **MCQs**, **CBQs**, **VBQs**, **IBQs**, along with **Topic-wise**, **Subject-wise Tests**, **Mock Tests**, and **Recalls** – available in both Practice & Review Modes.



REVISE

Reinforce your learning with **Golden Points Videos**, **Probable Q&A Discussions**, **Conceptual Videos**, and **3D Animated Videos**.



RECALL

Access **Previous Year Papers** from key State and National-level Nursing Competitive Exams.



Meet the
TH Author

Dr Muthu Venkatachalam



Ms Ambili



Mr Muthu



Mr Pawan



Ms Priyanka
Randhir



Ms
Chanchal



Mr Amit

Meet the
TH Digital
Content
Strategists



Download the app now!

360° Approach For Practice with Precision
Learn, Practice, Revise
with

Plan QB PRIME & Strike Test Series 2.0

Test your progress and define your success!

One plan for all **NORCET, NCLEX, MSc, UG** & other nursing competitive exams...

Validity: 3, 6 & 12 Months



Strike QB Book



Scan and watch the video to know all about the plan



Introducing Plan QB Bank PRIME Edn. & Strike 2.0 Monthly Test
One plan for all NORCET, NCLEX, MSc & and Other Nursing Competitive Exams

Ms. Arpita Saraswat

What Makes Us Stand Out?

A diverse question bank covering **subject-wise, topic-wise and system-wise tests**

Create and schedule tests as per your preferences, including difficulty levels (easy, moderate, difficult)

Practice in **real-exam CBT formats** to enhance speed and accuracy

Tests in **review & practice mode** with rational for focused revision.

Clinical scenario-based and high-yield questions to strengthen core concepts

Retake tests with comparative analysis to track and improve performance over time

Bookmark challenging questions and get expert **clarifications of your doubts**

Engage in test and discussion sessions for controversial or tricky questions

Detailed performance reports with topic-wise insights and **AI-suggested areas for improvement**

Earn rewards as you progress through your preparation

Create Your Test
You can customize your test according to your needs & wants

Magic Module
System generated test which is done wrong by the user

Schema
High Yielding important and frequently asked topics synchronized with MCQs

Gems
To enhance retention of the high yielding topics

40% off on MRP

~~₹ 7,992/-~~
₹ 4795/-*

3 Months Validity

25% off on MRP

~~₹ 7,992/-~~
₹ 5994/-*

6 Months Validity

25% off on MRP

~~₹ 12,245/-~~
₹ 9184/-*

12 Months Validity

The First Choice of Every Nursing Aspirant

THE MOST TRUSTED PLAN BY THE TOPPERS

Plan C+ Platinum PRIME Edition (Hinglish)

for **AIIMS NORCET 10.0 & 11.0**

New Content | New Features | New Approach | New Mentorship



NNL ONE
Nursing Next Live Redefined

7500+
SELECTION

in AIIMS NORCET through
Plan C+, Plan QB,
Fastrack and NNL Academy
over the last five years



DOWNLOAD THE
APP NOW!

SCAN THE QR CODE
TO DOWNLOAD THE BROCHURE



**CONCEPTUAL REVISION
FOR NORCET 10.0 & 11.0 (HINGLISH)**
200+ Hours of Fastrack Revision Stage 2 by the
Masterminds (Live/Recorded) of High yield Topics Qs
discussion from all the Subject

CONCEPTUAL PRACTICE
20,000+ MCQs with Plan **QB PRIME** Edition and Strike Test 2.0
Series Pack for NORCET 10.0 & 11.0, along with Computer Based
Test (CBT) on Real Exam Pattern

CONCEPTUAL LEARNING
50+ Hours of Test Discussion of Subject
Assessment Test by Masterminds

**CONCEPTUAL CLASSES
(NEW 2025 CONTENT
ADDED IN VARIOUS SUBJECTS)**
700+ Hours of Classes by Masterminds
in Hinglish with Concept Based
Video Assessment Test

**NEW INTERFACE
WITH NEW FEATURES**

**GET 5 BOOKS
WORTH RS. 5000 ALONG WITH
THIS PLAN MASTERSROKE IN
3 VOLUMES (5 BOOKS)**
VOL I A,B,C (THEORY) VOL II (PRACTICE) VOL III (REVISION)



**STRIKE/PREDICTION SERIES FOR
NORCET 10.0 & 11.0**

MARGDARSHAN BY MARGDARSHAKS
Dedicated One-On-One Guidance Counselling
and Doubt Clearing Sessions

**CENTRAL TEST FOLLOW
UP DEPARTMENT (FOR MORE
EFFECTIVE LEARNING)**
For Important Tests & Get Monthly
Progress Report

**FOR ALL QUERIES CONTACT
CUSTOMER CARE DESK**
From 9:00 Am - 7:00 Pm
(Monday - Saturday)

CBVAT
Concept Based Video Assessment
Test integrated with video lectures

meet **The Masterminds**



**1000+ SELECTIONS
IN NORCET 9.0**



SCAN AND WATCH THE
VIDEO TO KNOW ALL ABOUT THE PLAN



**Introduction to
Plan C+
Platinum PRIME
Edition (Hinglish)**



BONUS CONTENT:

- One Time Revision(OTR) By **Ms. Sabina** for NORCET 10.0 & 11.0 – 9 Days special classes covering all subjects HYT in one liners **Worth Rs. 2500 (Absolutely Free)**
- Plan Aptitude & Reasoning **Worth Rs. 1850/-**

For Guidance, Counselling & Enquiries

+91-9053791655
or www.nnlone.com

The First Choice of Every Nursing Aspirant



THE MOST TRUSTED PLAN BY THE TOPPERS

Plan C+ **Platinum PRIME Edition (English)**

for **AIIMS NORCET 10.0 & 11.0**

New Content | New Features | New Approach | New Mentorship

7500+
SELECTION

In AIIMS NORCET through
Plan C+, Plan QB,
Fastrack and NNL Academy
over the last five years



DOWNLOAD THE APP NOW!



NORCET RAPIDO CRASH COURSE

3 Months Crash Course before the exam discussing high yield topic one liners by the subject experts Live with test and discussion

CONCEPTUAL PRACTICE

20,000+ MCQs with Plan QB PRIME Edition and Strike Test 2.0 Series Pack for NORCET 10.0 & 11.0, along with Computer Based Test (CBT) on Real Exam Pattern

FASTRACK 9.0
100+hrs of recorded lectures by the subject experts

CONCEPTUAL CLASSES
(NEW 2025 CONTENT ADDED IN VARIOUS SUBJECTS)

700+ Hours of Classes by Masterminds in English with Concept Based Video Assessment Test
50+ Hours of test discussion videos

NEW INTERFACE
WITH NEW FEATURES

GET 5 BOOKS
WORTH RS. 5000 ALONG WITH
THIS PLAN MASTERSKORE IN
3 VOLUMES (5 BOOKS)



STRIKE/PREDICTION SERIES FOR NORCET 10.0 & 11.0

NEW FEATURES

MARGDARSHAN BY MARGDARSHAKS

Dedicated One-On-One Guidance Counselling and Doubt Clearing Sessions

CENTRAL TEST FOLLOW UP DEPARTMENT (FOR MORE EFFECTIVE LEARNING)

For Important Tests & Get Monthly Progress Report

FOR ALL QUERIES CONTACT CUSTOMER CARE DESK

From 9:00 Am - 7:00 PM (Monday - Saturday)

CBVAT

Concept Based Video Assessment Test integrated with video lectures

Coming soon in iOS version



Meet

The Masterminds for NORCET



Dr. Sakshi Arora
Obstetrics Nursing



Dr. Shefali Tyagi
Gynecological Nursing



Dr. Deepak Marwah
Adult Health
Nursing (Medicine)



Dr. Sabina
Nursing Foundations/
Adult Health Nursing(Surgery)



Dr. Rohan Khandelwal
Adult Health Nursing(Surgery)
Recorded Lectures



Dr. Ankit Goel
Mental Health Nursing



Dr. Ranjan Patel
Pharmacology



Dr. Mukhmohit Singh
Community Health
Nursing



Dr. Anand Bhatia
Child Health Nursing



Dr. Shrikant Verma
Anatomy & Physiology



Mr. Sachin Goswami
Anatomy & Physiology/
Microbiology/Pathology & Genetics



Mr. Chitra Pandey
Nursing Research/
Nursing Education/
Nursing Management



Ms. Priyanka Randhir
Sociology & Computers



Ms. Mithilesh Kumari
Biochemistry & Nutrition



Mr. Priyadarshini
Adult Health Nursing (In English)/
Nursing Education/
Nursing Management



Mr. Muthukumaran
Community Health Nursing
(In English)

Meet The Strategists



Dr Sudhir Kumar Singh
NORCET Advisor and
Sr. Content Strategist



Ms. Priyanka Bansal
Chief Academic Officer



Academic Head – Academy



Mr. Pawan Goel
Content Strategist
cum educator/ Batch Mentor
(NNL EduHub)



Ms. Swati Shukla
Margdarshak



Ms. Arpita Saraswat
Content Strategist cum
Educator

Explore

NORCET EXCELLENCE UNDER ONE ROOF!



NNL ACADEMY

Aspiration to Achievement - We make it happen!

SKILL
BASED
LEARNING



CBT LAB
& READING
ROOM

CONCEPTUAL
CLASSES

SUCCESS
CELEBRATION &
CULTURAL EVENT



NNL PRINTS

Masterstroke
in 3 Vols
(5 Books)



Meet
The Masterminds



FOR GUIDANCE, COUNSELLING & ENQUIRIES

+91-9536399555 OR WWW.NNLONE.COM

For NORCET 10.0

PLAN MLB PRO PEARL BATCH
(STARTING FROM FEBRUARY)

For NORCET 11.0

PLAN MLB PRO BLUE BATCH
(STARTING FROM APRIL)

STRONG 15 REASONS

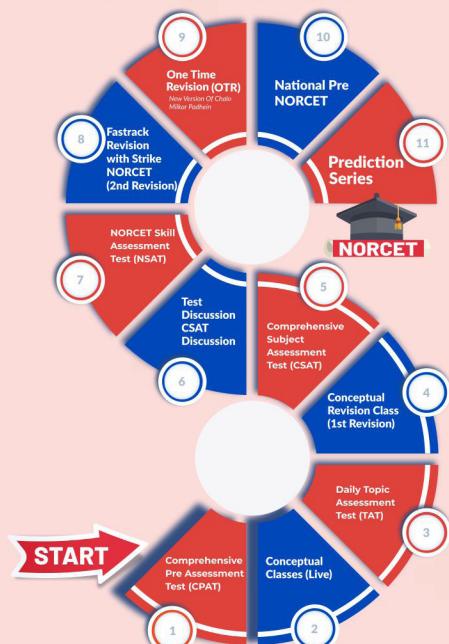
TO CHOOSE OFFLINE CLASSES AT

NNL ACADEMY

1. **Top Educators** - Learn face-to- face at the Academy and Virtual Live at NNL EduHub Satellite Centre from the best minds in the field - the Masterminds.
2. **Tech-Enabled Learning** - State-of-the-art technology for modern learning.
3. **Maxwell CBT Lab** - Practice in a real-exam environment with 360° preparation.
4. **Smart Study Room** - Study anytime in our Ford Smart Study & Practice Room from 8:00 AM - 8:00 PM.
5. **Safe & Secure Campus** - Biometric access, CCTV surveillance & 2-tier security.
6. **Hi-Tech Classrooms** - Equipped with the latest digital learning tools.
7. **Open 6 Days a Week - 12- hour access (8:00 AM - 8:00 PM).**
8. **Holistic Learning** - Focus on overall student growth and development.
9. **3-Way Learning Approach** - Conceptual classes, Test & Discussion, and Fasttrack sessions.
10. **Comprehensive Study Material** - High-quality, course-specific content provided.
11. **Regular Tests** - Daily, fortnightly & monthly tests (CPAT, TAT, SAT & NNSAT).
12. **Expert Doubt Sessions** - Clear doubts with Masterminds, Mentors and Subject experts.
13. **Student-Centric Focus** - Equal attention to the success of every student.
14. **Competitive Environment** - Motivating atmosphere to push your limits.
15. **Margdarshan by Margdarshak** - Through guidance by the Margdarshak.

**THE ACADEMY
PEDAGOGY**

SUBJECT COVERAGE STRATEGY



**100+ SELECTIONS
OF NNL ACADEMY IN
NORCET 9.0 & 8.0**

**MAYUR
RANVA**
AIR 9



**SAMIR
SHIVAD BAR**
AIR 29



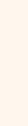
**ANKUR
AIR 101**



**AKANKSHA
GOSWAMI**
AIR 192



RUBI
AIR 216





NNL EduHub

(A Unit of Nursing Next Exam Prep Pvt. Ltd.)

- Satellite Classes for NORCET
- Smart Reading Room
- Demo Classes/ Free Content Access of NNL App
- Admission Enquiry Office (NNL Academy/ NNL App)
- Test & Discussion Batch
- CBT Lab

WE SPECIALIZE IN ALL NATIONAL & STATE LEVEL NURSING COMPETITIVE EXAMS

Explore

NORCET Excellence under one roof!

Counselling & Admission Enquiry Desk



Satellite Classes for NORCET



Smart Reading Room



Maxwell CBT Lab



SSK Tower, 2nd Floor, Plot No 23, Vishwa Nagar, opposite Metro Pillar No.- 75, Near Gurjar ki Thadi, New Sanganer Road, Sodala, Jaipur - 302019

For more details, contact  +91 9616009555

Scan to watch the video



AIIMS NORCET TOPPERS- 2023

NEXTIANS TAKE THE LEAD YET AGAIN!

All India Ranks In Open Category

RINU BALA
Roll No. 4421373
Plan C+ Subscriber
BATCH 2023

1
AIR

October 2023



Mahesh Solanki
Roll No. 4419108
Plan C+ Subscriber
BATCH 2023



Pratibha Jhagta
Roll No. 4429358
Plan C+ Subscriber
BATCH 2023



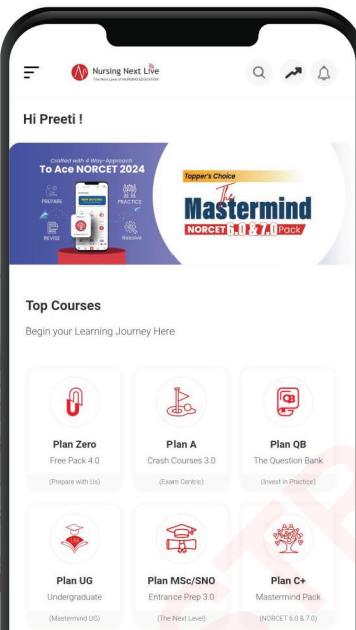
Vishnu Kumar
Roll No. 4437244
Plan C+ Subscriber
BATCH 2023



Daphiwanhun Saiborne
Roll No. 4432353
Plan C+ Subscriber
BATCH 2023



Chandra Tamang
Roll No. 4458171
Plan C+ Subscriber
BATCH 2023



VAISHALI
Roll No. 4304176
Plan C+ Subscriber
BATCH 2023

2
AIR

June 2023



Amit Sehrawat
Roll No. 4301742
Plan C+ Subscriber
BATCH 2023



Subhadip Tripathi
Roll No. 4202513
Plan C+ Subscriber
BATCH 2023



Riya Ghosh
Roll No. 4258133
Plan C+ Subscriber
BATCH 2023



Shubham Kavhad
Roll No. 4255490
Plan C+ Subscriber
BATCH 2023

1000+ Selections in NORCET 5 (October 2023)



AIIMS NORCET TOPPERS- 2022

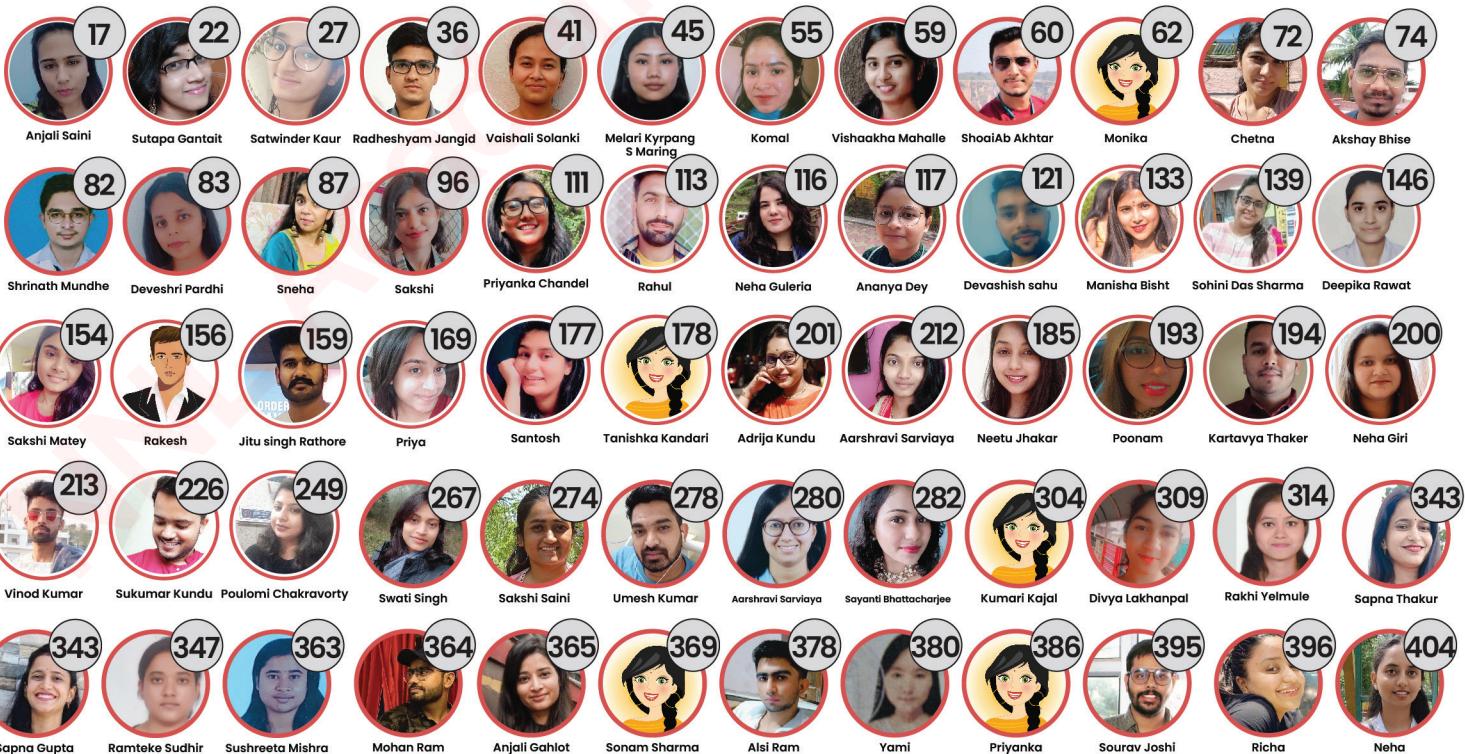
All India Ranks In Open Category

2500+ Students believe that **Nursing Next Live** has played a vital role in their **NORCET** success



Scan The QR Code To Watch Interview

1000+ Selections in NORCET 2022 from Nursing Next Live



Success stories of NORCET 9.0

<p>Mr Sachin Goswami in Conversation with NORCET 9 Topper AIR 10 HARSHAD</p> <p>QR code</p>	<p>Ms Priyadarshini in Conversation with NORCET 9 Topper AIR 23 DOMINIC MAXIMILLION A</p> <p>QR code</p>	<p>Ms Sabina in Conversation with NORCET 9 Topper AIR 29 SAMEER AHMAD DAR</p> <p>QR code</p>	<p>Ms Chitra Pandey in Conversation with NORCET 9 Topper AIR 75 SUCHETA</p> <p>QR code</p>
<p>Dr Ranjan Patel in Conversation with NORCET 9 Topper AIR 101 ANKUR</p> <p>QR code</p>	<p>Ms Chitra Pandey in Conversation with NORCET 9 Topper AIR 124 ANSHIKA THAKUR</p> <p>QR code</p>	<p>Ms Chitra Pandey in Conversation with NORCET 9 Topper AIR 161 ANNU</p> <p>QR code</p>	<p>Mr Sachin Goswami in Conversation with NORCET 9 Topper AIR 223 OWAIIS AHMAD BHAT</p> <p>QR code</p>
<p>Mr Sachin Goswami in Conversation with NORCET 9 Topper AIR 350 TRISROTA DATTA</p> <p>QR code</p>	<p>Ms Sabina in Conversation with NORCET 9 Topper AIR 395 SANJANA</p> <p>QR code</p>	<p>Ms Chitra Pandey in Conversation with NORCET 9 Topper AIR 542 SURANJANA MAJI</p> <p>QR code</p>	<p>Mr Muthukumaran in Conversation with NORCET 9 Topper AIR 571 PRIYANKA M</p> <p>QR code</p>
<p>Ms Priyadarshini in Conversation with NORCET 9 Topper AIR 604 DHARMARAJ S</p> <p>QR code</p>	<p>Mr Sachin Goswami in Conversation with NORCET 9 Topper AIR 863 KHUSBU MEHTA</p> <p>QR code</p>	<p>Dr Shefali Tyagi in Conversation with NORCET 9 Topper AIR 952 CHITI</p> <p>QR code</p>	<p>Mr Sachin Goswami in Conversation with NORCET 9 Topper AIR 959 KANIKA</p> <p>QR code</p>

Success stories of NORCET 8.0

<p>Dr Rohan Khandelwal in Conversation with NORCET 8 Topper AIR 19 REKHA KUMARI</p> <p>QR code</p>	<p>Dr Anand Bhatia in Conversation with NORCET 8 Topper AIR 27 RASHMI YADAV</p> <p>QR code</p>	<p>Dr Anand Bhatia in Conversation with NORCET 8 Topper AIR 36 PRACHI</p> <p>QR code</p>	<p>Dr Shefali Tyagi in Conversation with NORCET 8 Topper AIR 26 ANUSHREE SHILL</p> <p>QR code</p>
<p>Dr Anand Bhatia in Conversation with NORCET 8 Topper AIR 27 RASHMI YADAV</p> <p>QR code</p>	<p>Dr Deepak Marwah in Conversation with NORCET 8 Topper AIR 35 ANAMIKA</p> <p>QR code</p>	<p>Dr Deepak Marwah in Conversation with NORCET 8 Topper AIR 40 SHREYA</p> <p>QR code</p>	<p>Dr Anand Bhatia in Conversation with NORCET 8 Topper AIR 41 Deblina Bhattacharya</p> <p>QR code</p>
<p>Ms Sabina Ali in Conversation with NORCET 8 Topper AIR 70 SHALINI VERMA</p> <p>QR code</p>	<p>Dr Shrikant Verma in Conversation with NORCET 8 Topper AIR 84 KIRPA PAPPACHAN</p> <p>QR code</p>	<p>Dr Ankit Goyal in Conversation with NORCET 8 Topper AIR 91 TASADUK HUSSAIN</p> <p>QR code</p>	<p>Dr Ranjan Patel in Conversation with NORCET 8 Topper AIR 96 SACHIN</p> <p>QR code</p>
<p>Dr Anand Bhatia in Conversation with NORCET 8 Topper AIR 98 NANCY</p> <p>QR code</p>	<p>Ms Sabina Ali in Conversation with NORCET 8 Topper AIR 108 SHREYA OJHA</p> <p>QR code</p>	<p>Ms Chitra Pandey in Conversation with NORCET 8 Topper AIR 309 AMAN KUMAR</p> <p>QR code</p>	<p>Dr Anand Bhatia in Conversation with NORCET 8 Topper AIR 11 Vishnu Dhakar</p> <p>QR code</p>

NNL ONE

ALL INDIA RANKS IN OPEN CATEGORY
1000+ SELECTIONS IN AIIMS NORCET 9.0 (2025)



7500+ SELECTIONS FOR FIVE CONSECUTIVE YEARS (2025-2020)

OUR STAR PERFORMERS NNL ACADEMY 9.0 & 8.0



TOP ACHIEVERS OF AIIMS NORCET 8.0 - 1.0



SCAN THE QR CODE
AND DOWNLOAD THE APP

FOR SALES AND INQUIRIES

+91-9053791655

Visit Us: www.nnlone.com

Follow us:

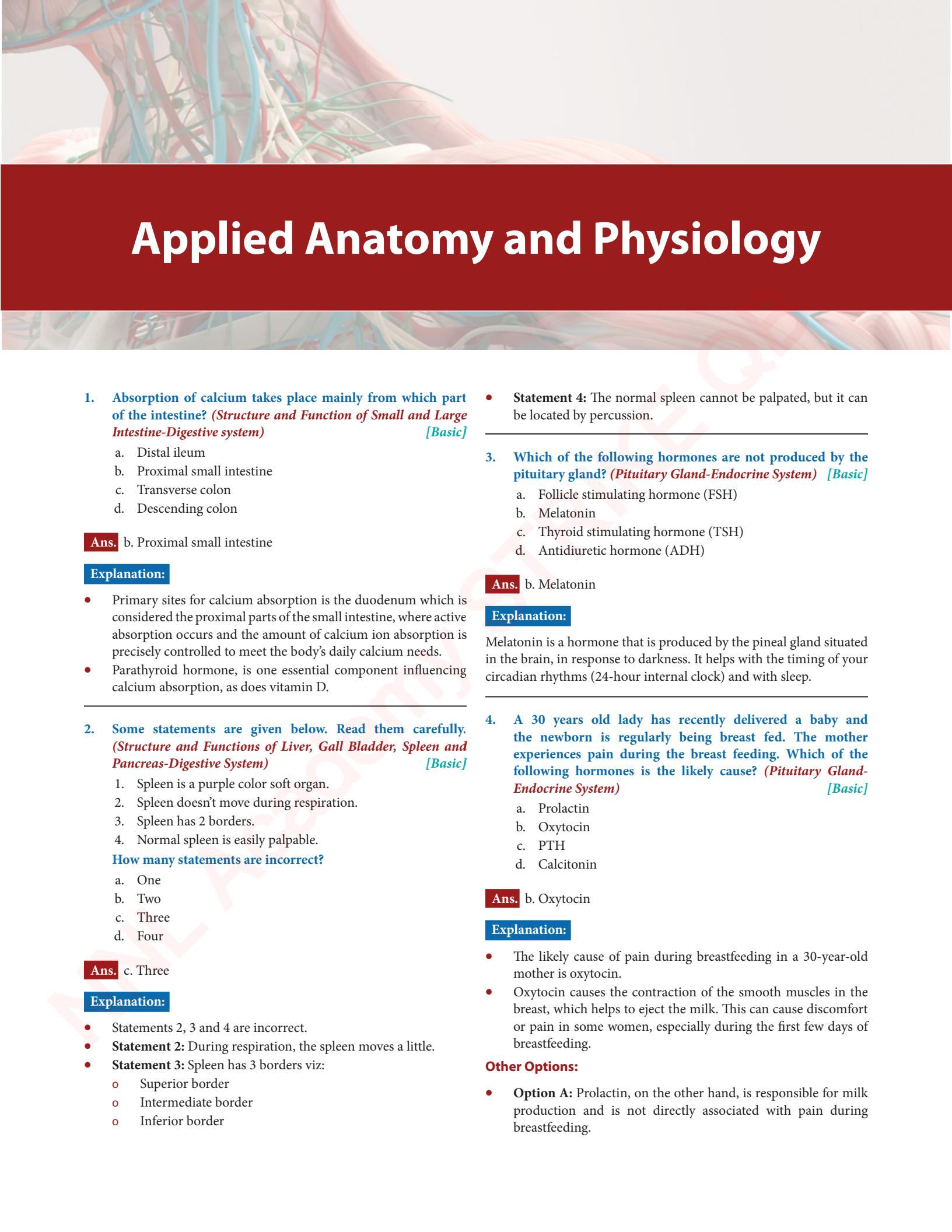
ALL INDIA OPEN CATEGORY RANKS FOR 5 CONSECUTIVE YEARS (2020-25)

32
1,200
STUDENTS
IN TOP
100 RANKS

350
1,600
STUDENTS
IN TOP
500 RANKS

STUDENTS
IN TOP
1000 RANKS

ADMISSION OPEN
FOR NORCET 10 & 11



Applied Anatomy and Physiology

1. Absorption of calcium takes place mainly from which part of the intestine? (Structure and Function of Small and Large Intestine-Digestive system) [Basic]

- a. Distal ileum
- b. Proximal small intestine
- c. Transverse colon
- d. Descending colon

Ans. b. Proximal small intestine

Explanation:

- Primary sites for calcium absorption is the duodenum which is considered the proximal parts of the small intestine, where active absorption occurs and the amount of calcium ion absorption is precisely controlled to meet the body's daily calcium needs.
- Parathyroid hormone, is one essential component influencing calcium absorption, as does vitamin D.

2. Some statements are given below. Read them carefully. (Structure and Functions of Liver, Gall Bladder, Spleen and Pancreas-Digestive System) [Basic]

- 1. Spleen is a purple color soft organ.
- 2. Spleen doesn't move during respiration.
- 3. Spleen has 2 borders.
- 4. Normal spleen is easily palpable.

How many statements are incorrect?

- a. One
- b. Two
- c. Three
- d. Four

Ans. c. Three

Explanation:

- Statements 2, 3 and 4 are incorrect.
- **Statement 2:** During respiration, the spleen moves a little.
- **Statement 3:** Spleen has 3 borders viz:
 - o Superior border
 - o Intermediate border
 - o Inferior border

• Statement 4: The normal spleen cannot be palpated, but it can be located by percussion.

3. Which of the following hormones are not produced by the pituitary gland? (Pituitary Gland-Endocrine System) [Basic]

- a. Follicle stimulating hormone (FSH)
- b. Melatonin
- c. Thyroid stimulating hormone (TSH)
- d. Antidiuretic hormone (ADH)

Ans. b. Melatonin

Explanation:

Melatonin is a hormone that is produced by the pineal gland situated in the brain, in response to darkness. It helps with the timing of your circadian rhythms (24-hour internal clock) and with sleep.

4. A 30 years old lady has recently delivered a baby and the newborn is regularly being breast fed. The mother experiences pain during the breast feeding. Which of the following hormones is the likely cause? (Pituitary Gland-Endocrine System) [Basic]

- a. Prolactin
- b. Oxytocin
- c. PTH
- d. Calcitonin

Ans. b. Oxytocin

Explanation:

- The likely cause of pain during breastfeeding in a 30-year-old mother is oxytocin.
- Oxytocin causes the contraction of the smooth muscles in the breast, which helps to eject the milk. This can cause discomfort or pain in some women, especially during the first few days of breastfeeding.

Other Options:

- **Option A:** Prolactin, on the other hand, is responsible for milk production and is not directly associated with pain during breastfeeding.

- Option C and D: PTH and calcitonin are hormones involved in calcium regulation and have no role in breastfeeding.

5. Which of the following is the lining epithelium of the trachea? (Structure and Function of Respiratory Organs-Respiratory System) [Basic]

- Simple squamous epithelium
- Transitional epithelium
- Stratified squamous epithelium
- Pseudostratified ciliated columnar

Ans. d. Pseudostratified ciliated columnar

Explanation:

- The trachea is lined by pseudostratified ciliated columnar epithelium.

Incorrect Options:

- Option A-Simple squamous epithelium:** Simple squamous epithelium is present in:
 - Mesothelium lining ventral body cavities
 - Endothelial lining of the ventral heart and blood vessels
 - Portion of kidney tubules (thin sections of nephron; Henle loops)
 - The inner lining of the cornea
 - Alveoli of lungs
- Option B-Transitional epithelium:** Transitional epithelium is found in the urinary bladder.
- Option C-Stratified squamous epithelium:** Skin and esophagus are lined by stratified squamous epithelium.

Learning Objective:

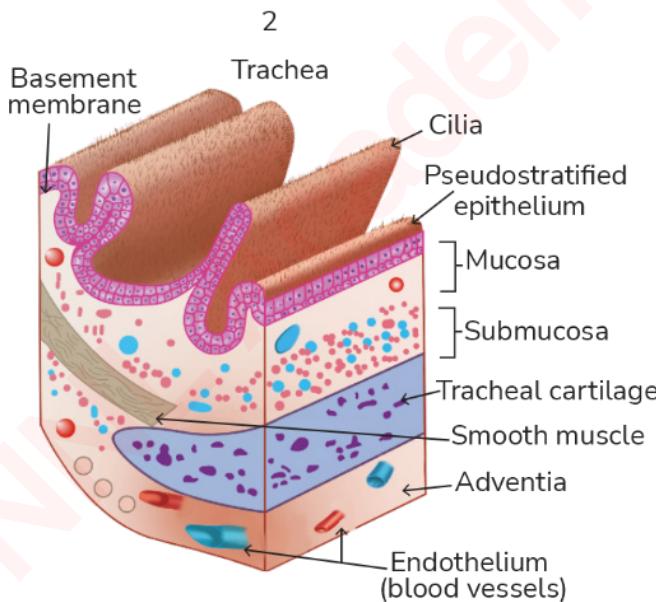


Figure: Trachea

- Layers of the trachea: Mucosa, submucosa, smooth muscle and outermost connective tissue adventitia.

- It has pseudostratified ciliated columnar epithelium.
- Hyaline cartilage extends to the trachea, bronchus and maybe the larynx but not the bronchioles.

6. Which hormone increases during periods of stress, starvation and deep sleep? (Other Hormones-Endocrine System) [Basic]

- Growth hormone
- Glucocorticoids
- Cortisol
- Prolactin

Ans. a. Growth Hormone

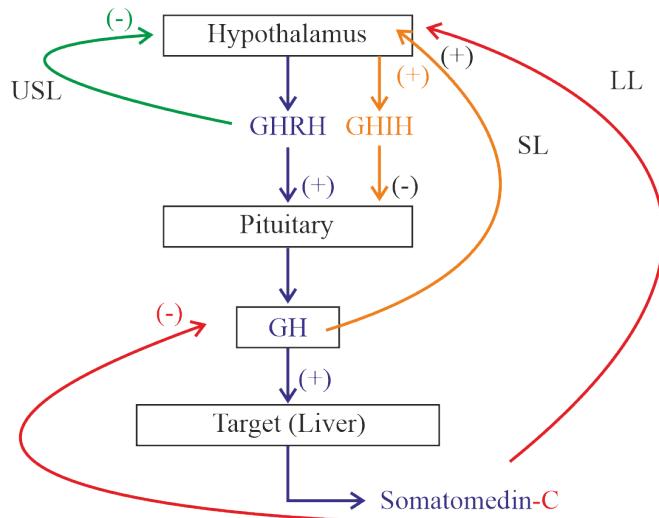
Explanation:

GH is known to increase significantly during deep sleep (particularly in non-rapid eye movement or NREM sleep) and also plays a role in stress and starvation responses. It is crucial for post-natal growth and has its peak production during adolescence. It is stimulated by exercise and certain sleep stages.

Incorrect Options:

- Option B-Glucocorticoids:** These are hormones that are indeed elevated during stress and starvation but are not specifically associated with increased levels during deep sleep. They primarily include cortisol and are involved in the body's response to stress.
- Option C-Cortisol:** This hormone increases during periods of stress and starvation but does not have a significant increase during deep sleep. It is a type of glucocorticoid and is more associated with the stress response rather than growth or sleep-related processes.
- Option D-Prolactin:** This hormone primarily increases during pregnancy and breastfeeding. It is not notably increased by stress, starvation or deep sleep. In fact, prolactin levels can be affected by REM sleep, rather than being elevated during deep sleep.

Learning Objective:



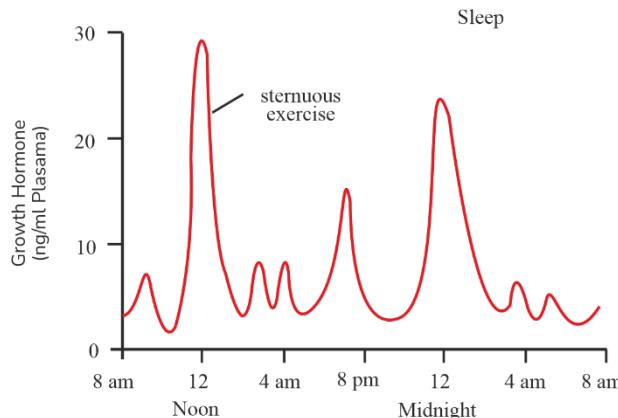


Figure: Feedback control for growth hormone

- In the figure, the first peak of growth hormone is seen during exercise. The second peak is seen at midnight during sleep.
- GH is released in a pulsatile fashion.

7. Which of the following regulates body temperature? (Hypothalamus-Endocrine system) [Basic]

a. Hypothalamus b. Basal ganglia
c. Thalamus d. Limbic System

Ans. a. Hypothalamus

Explanation:

The hypothalamus plays a central role in regulating body temperature through a complex mechanism involving:

- Sensing temperature changes via thermoreceptors in the skin, deep tissue, spinal cord and hypothalamus.
- Integrating areas are:**
 - Anterior hypothalamus (preoptic area), response to heat.
 - Posterior hypothalamus, response to cold.
- Initiating effector responses, such as:**
 - Activation of sudomotor sympathetic nerves to promote sweating, which helps dissipate heat through evaporative cooling.
 - Activation of skin sympathetic nerves to induce cutaneous vasodilation, leading to increased blood flow to the skin's surface and heat loss through radiation and convection.
- The combined effect of the cooling or warming mechanisms allows the body temperature to return to the normal range (around 98.6°F/37°C). Once the body temperature stabilizes, the activity of thermoreceptors decreases and the hypothalamus reduces its signaling accordingly.

Incorrect Options:

- Option B-Basal ganglia:** The basal ganglia are primarily involved in the control of voluntary movements, motor coordination and procedural learning, rather than temperature regulation.
- Option C-Thalamus:** The thalamus serves as a relay center for sensory information, transmitting signals to different regions of the brain. While it plays a role in processing sensory inputs related to temperature, it does not directly regulate body temperature.

- Option D-Limbic system:** The limbic system is involved in emotions, memory and behavior. While certain components of the limbic system, such as the amygdala and hypothalamus (which is part of the limbic system), may influence physiological responses to emotions and stressors that can affect body temperature, the limbic system itself does not directly regulate body temperature.

Learning Objective:

- The hypothalamus controls body temperature by integrating signals from thermoreceptors, comparing actual temperature to the set point and initiating appropriate responses to maintain homeostasis.
- When body temperature rises, the hypothalamus triggers cooling mechanisms, such as sweating and cutaneous vasodilation, to dissipate heat and return to normothermia. Failure to dissipate heat can lead to hyperthermia or heat stroke, disrupting homeostasis and causing symptoms like tachycardia, anhidrosis and confusion.

8. Which bone is most likely to be fractured in an injury to the anatomical snuff box? (Bones-Musculoskeletal System) [Moderate]

a. Scaphoid b. Lunar
c. Cuboid d. Trapezius

Ans. a. Scaphoid

Explanation:

- The anatomical snuff box is a triangular depression located on the radial aspect of the dorsum (back) of the hand. It is formed by the tendons of the extensor pollicis longus and extensor pollicis brevis muscles. Fractures within the anatomical snuff box are commonly associated with falls onto an outstretched hand, particularly with the wrist extended. The most fractured bone in this region is the scaphoid bone, also known as the navicular bone.

Incorrect Options:

- Option B-Lunar (lunate) bone:** The lunate bone, found in the wrist joint, rarely fractures in injuries to the anatomical snuff box and isn't usually part of its formation.
- Option C-Cuboid bone:** The cuboid bone is one of the tarsal bones located in the foot. It is not related to the anatomical snuff box or the wrist region.
- Option D-Trapezius:** The trapezius is a large muscle located in the upper back and neck area. It is not a bone and is not related to the anatomical snuff box or wrist injuries.

Learning Objective:

- Fractures within the anatomical snuff box are commonly associated with falls onto an outstretched hand, particularly with the extended wrist.
- The most fractured bone in this region is the scaphoid bone, also known as the navicular bone.
- Scaphoid bone lines the floor of the Anatomical snuffbox and if there is a fracture of Scaphoid, there will be tenderness at the Anatomical snuffbox.

Nursing Foundations

1. The nurse is caring for a client with fever admitted in the medical unit. On assessment, the client is restless with a temperature of 102.2° F. Which of the following should be the priority action by the nurse? (Body Temperature Assessment and Alterations-Vital Signs) [Basic]

- a. Assess the oxygen saturation
- b. Restrict fluid intake
- c. Increase client activity
- d. Increase client's metabolic rate

Ans. a. Assess the oxygen saturation

Explanation:

- Fever is the elevation of an individual's core body temperature above a point regulated by hypothalamus. A body temperature of 102.2-degree F is considered high-grade fever. During the fever, cellular metabolism and oxygen consumption increases. Therefore, the nurse should consider observing the client's oxygen saturation level. **Hence, option a. is correct.**
- The client is also at risk of developing dehydration, therefore, fluid intake should not be restricted. **Hence, option b. is incorrect.**
- Increasing activity would increase the metabolic rate which further leads to increase in oxygen demand. **Hence, options c. and d. are incorrect.**

2. The nurse receives the admission of an agitated and confused client in the medical unit. The client has a history of seizures and requires routine temperature assessment. The nurse's best option would be to take his temperature by which of the following route? (Body Temperature Assessment and Alterations-Vital Signs) [Moderate]

- a. Orally
- b. Tympanically
- c. Rectally
- d. By the axillary method

Ans. b. Tympanically

Explanation:

- In this case, the best method to obtain body temperature would be tympanic route as it is easily accessible, requires minimal

patient repositioning, and can be used without disturbing the patient. **Hence, option b. is correct.**

- Obtaining temperature orally requires patient cooperation and is not recommended for clients with a history of seizures. **Hence, option a. is incorrect.**
- Obtaining rectal temperature also requires positioning of the client and may increase the client's agitation. **Hence, option c. is also incorrect.**
- Obtaining temperature by axilla require positioning of the client and attention by the nurse. **Hence, option d. is also incorrect.**

3. On assessment, the nurse gets the apical pulse of a patient 80/min and radial pulse 65/min. Identify the pulse deficit? (Body Temperature Assessment and Alterations-Vital Signs) [Moderate]

- a. 10
- b. 15
- c. 25
- d. 35

Ans. b. 15

Explanation:

A pulse deficit is calculated by the following formula:

$$\text{Pulse deficit} = \text{Apical pulse rate} - \text{Radial pulse rate}$$

Now, putting the given values into the formula:

$$\text{Apical pulse rate} = 80$$

$$\text{Radial pulse rate} = 65$$

$$\text{Pulse deficit} = 80 \text{ beats/min.} - 65 \text{ beats/min.}$$

$$= 15 \text{ beats/min.}$$

Hence, option b is correct.

4. Core body temperature can be measured using all of the following methods; except: (Body Temperature Assessment and Alterations-Vital Signs) [Moderate]

- a. Oral
- b. Rectal
- c. Temporal artery
- d. Urinary bladder

Ans. d. Urinary bladder

Explanation:

- Core body temperature refers to the internal temperature of the body, which is typically measured in areas close to the body's core, where temperature remains relatively stable. Common methods for measuring core body temperature include oral, rectal, and temporal artery measurements.
- Oral:** Measurement of temperature using a thermometer placed under the tongue is a commonly used method for assessing core body temperature. However, it's important to ensure that the patient hasn't recently eaten or drunk anything hot or cold, as it may affect the reading.
- Rectal:** Rectal temperature measurement involves inserting a thermometer into the rectum to assess core body temperature. This method is considered one of the most accurate ways to measure core temperature, especially in infants and young children.
- Temporal artery:** Temporal artery temperature measurement involves using a thermometer to scan the temporal artery on the forehead. It provides a non-invasive and relatively quick way to estimate core body temperature and is often used in clinical settings.
- Urinary bladder:** The urinary bladder is not typically used as a site for measuring core body temperature. While the temperature of urine can provide information about the body's internal temperature, it is not a direct measurement of core temperature. Core body temperature is best assessed using methods that directly measure temperature in areas close to the body's core, such as the oral, rectal, or temporal artery methods.

5. A nurse is assessing a patient's pain using the Numeric Pain Rating Scale (NPRS). The patient rates his/her pain as 7 out of 10. How should the nurse interpret this pain score? (Pain Assessment and Management-Comfort, Rest, Sleep, and Pain) [Basic]

- The patient has minimal discomfort and does not require intervention.
- The patient is experiencing moderate pain and may benefit from pain management.
- The patient has severe pain and needs immediate pain relief.
- The patient's pain level is mild and does not need any further assessment.

Ans. c. The patient has severe pain and needs immediate pain relief.

Explanation:

- The patient has severe pain and needs immediate pain relief:** On the Numeric Pain Rating Scale, a score of 7 out of 10 indicates severe pain. This level of pain is significant and usually requires prompt intervention for pain management to improve the patient's comfort and quality of life.
- The patient has minimal discomfort and does not require intervention:** A pain score of 7 out of 10 is considered severe, not minimal. Immediate intervention is typically needed for severe pain.
- The patient is experiencing moderate pain and may benefit from pain management:** A score of 7 is higher than moderate

pain and indicates severe pain, which often requires more immediate and effective pain management strategies.

- The patient's pain level is mild and does not need any further assessment:** A score of 7 out of 10 is not mild; it indicates severe pain. This requires thorough assessment and appropriate intervention.

6. Which of the following situation best justifies obtaining temperature via rectal route? (Body Temperature Assessment and Alterations-Vital Signs) [Basic]

- A patient with an arm immobilized in a cast
- A patient suffering from external hemorrhoids
- c. A patient having nasal packing**
- A patient receiving nutrition via gastrostomy feeding tubes

Ans. c. A patient having nasal packing

Explanation:

- Obtaining body temperature via rectal route would be appropriate in cases where oral or nasal routes are contraindicated or not possible to assess temperature orally. In the given case, a patient with nasal packing would be an appropriate answer as nasal packing obstructs the nasal passage making oral assessment unreliable and uncomfortable. The rectal method is considered the reliable one for assessing core body temperature when other measures are not feasible. **Hence, option c. is correct.**
- The condition described in option a. does not affect the ability to take an oral or tympanic temperature.
- The patient suffering from external hemorrhoids is an inappropriate choice for rectal temperature due to the potential for increased discomfort and irritation.
- The patient receiving nutrition via gastrostomy feeding tubes does not affect the ability to take an oral or tympanic temperature.

7. A nurse is checking the clinical progress sheet of his patient in order to identify any new treatment to be added by the attending doctor after his morning clinical rounds. The nurse noticed that the doctor has mentioned the patient's pulse as 3+ grade. Select the most appropriate statement which best describes about this patient's pulse? (Pulse Assessment and Alterations-Vital Signs) [Moderate]

- Absent pulse
- Weak, barely palpable, easily obliterate
- Strong and bounding pulse
- d. Full pulse, increased**

Ans. d. Full pulse, increased

Explanation:

- The amplitude – strength of the pulse is assessed on the basis of grading scale.
 - 4+¼: Strong and bounding
 - 3+¼: Full pulse, increased
 - 2+¼: Normal, easily palpable
 - 1+¼: Weak, barely palpable
 - 0 ¼: Absent, not palpable

Applied Biochemistry and Nutrition

1. Which of the following is the earliest sign of riboflavin (Vitamin B2) deficiency? (Vitamin Deficiency Disorders-Nutritional Deficiency Disorders) [Moderate]

- a. Cheilosis
- b. Glossitis
- c. Seborrheic dermatitis
- d. Proliferation of the bulbar conjunctival capillaries

Ans. d. Proliferation of the bulbar conjunctival capillaries

Explanation:

- The proliferation of bulbar conjunctival capillaries, which refers to the visible dilation of blood vessels in the eyes, is often the earliest clinical sign of riboflavin deficiency.
- This sign appears before more obvious symptoms like cheilosis or glossitis develop.

Table: Riboflavin deficiency

Symptom	Feature	Image
Cheilosis	<ul style="list-style-type: none"> • Cracks and inflammation at the corners of the mouth (Option A ruled out). 	
Glossitis	<ul style="list-style-type: none"> • Inflammation and changes in the appearance of the tongue. • It becomes smooth and glossy. • It may appear purplish red (Option B ruled out). 	

Contd...

Symptom	Feature	Image
Seborrheic dermatitis	<p>Skin condition with scaly patches, redness and dandruff (Option C ruled out).</p>	
Proliferation of bulbar conjunctival capillaries	<p>Earliest sign. It is the visible dilation of blood vessels in the eyes.</p>	

2. A patient present to the OPD with complaints of lower limb weakness. He was diagnosed with neurolathyrism. Which of the following vitamin supplementation may prove useful in reversing this condition? (Vitamin Deficiency Disorders-Nutritional Deficiency Disorders) [Moderate]

- a. Vitamin E
- b. Vitamin B1
- c. Vitamin B6
- d. Vitamin C

Ans. d. Vitamin C

Explanation:

- A patient presenting with lower limb weakness and diagnosed with neurolathyrism may benefit from vitamin C supplementation to help reverse the condition.

- Lathyrism is a paralyzing disease of humans and animals. It is due to the consumption of khesari dal or *Lathyrus sativus*. When the husk is removed, it looks similar to a red gram or Bengal gram. It is mostly consumed by poor agricultural laborers because it is relatively cheap. Lathyrism is more prevalent in parts of Madhya Pradesh, Uttar Pradesh, Odisha and Bihar. The Prevention of Food Adulteration Act in India has banned *Lathyrus sativus* in all forms (whole/split/flour).
- In humans, it is referred to as neurolathyrism because it affects the nervous system. It is characterized by gradually developing spastic paralysis of the lower limbs. Beta-oxalyl amino alanine (BOAA) is the toxic compound causing this disease. It is water-soluble and can be removed by the following methods:
 - Soaking pulses in hot water and discarding the water.
 - Overnight soaking in lime water, followed by boiling.
 - Parboiling for large-scale detoxification.
- In the case of neurolathyrism, administration of vitamin C at doses of 500–1000 mg may help reverse the damage.

Table: Food adulteration diseases

Food	Adulterant	Toxin	Disease
Dal	Khesari dal (<i>Lathyrus sativus</i>)	BOAA*	Lathyrism
Oil	Argemone mexicana (oil)	Sanguinarine	Epidemic dropsy
Millet	Crotalaria seeds (Jhunjhunia)	Pyrrrolizidine alkaloids (Hepatotoxic)	Endemic ascites
Bajra, wheat	Claviceps purpurea	Clavine alkaloids	Ergotism

* BOAA-Beta Oxalyl Amino Alanine

3. Which vitamins are least likely to accumulate in the body's adipose tissue due to its solubility characteristics? (Vitamins-Functions, Dietary Sources and Requirements of Vitamins)

[Basic]

- Retinol
- Ergocalciferol
- Tocopherol
- Pantothenic acid

Ans. d. Pantothenic acid

Explanation:

- Pantothenic acid is a water-soluble vitamin (B5) and is not stored in significant amounts in adipose tissue. Water-soluble vitamins are generally excreted in the urine and do not accumulate in the body.

Vitamin	Sources
Vitamin-A	Milk, butter, cream, cheese, egg yolk, Beta carotene, carrots, papaya
Vitamin-D	Fish liver oil, fish, egg yolk, milk
Vitamin-E	Vegetable oil, wheat germ oil, sunflower oil, safflower oil, cottonseed oil

Contd...

Vitamin	Sources
Vitamin-K	<ul style="list-style-type: none"> Phylloquinone (Vitamin K1) Menaquinone (Vitamin K2) Menadione (Vitamin K3, a synthetic form)

4. Which of the following vitamin deficiencies is most likely to result in anemia? (Vitamin Deficiency Disorders-Nutritional Deficiency Disorders)

[Basic]

- Vitamin B1
- Vitamin B6
- Vitamin E
- Vitamin B9
- Vitamin B5
- a. 2, 3, 4
- b. 1, 2, 4
- c. 1, 3, 4
- d. 2, 4, 5

Ans. a. 2, 3, 4

Explanation:

- Amongst the given options, anemia is most likely to be seen in deficiencies of vitamin B6, vitamin E and vitamin B9.
- Vitamin B6** deficiency can result in sideroblastic anemia as vitamin B6 acts as a cofactor for the enzyme Aminolevulinate synthase which is involved in Heme synthesis.
- Vitamin E** acts as a lipid-soluble antioxidant in cell membranes. In vitamin E deficiency, the erythrocyte membranes are abnormally fragile as a result of lipid peroxidation, leading to hemolytic anemia.
- Vitamin B9 (Folate) deficiency** or vitamin B12 deficiency which leads to functional folate deficiency affects cells that are dividing rapidly because they have a large requirement for thymidine for DNA synthesis. Clinically, this affects the bone marrow, leading to megaloblastic anemia.

5. Which of the following is not a commonly associated symptom with vitamin E deficiency? (Vitamin Deficiency Disorders-Nutritional Deficiency Disorders)

[Moderate]

- Spinocerebellar ataxia
- Megaloblastic anemia
- Peripheral neuropathy
- Hemolytic anemia

Ans. b. Megaloblastic anemia

Explanation:

- Megaloblastic anemia is caused due to deficiency of **vitamin B9 (folic acid)** and **B12 (cobalamin)**

Vitamin E Deficiency:

- Rare but seen in severe fat malabsorption, cystic fibrosis and some forms of chronic liver disease, as these conditions are unable to absorb or transport vitamin E.
- Premature infants are born with inadequate vitamin E reserves.
- Symptoms:**
 - Hemolytic anemia: Due to lipid peroxidation and fragile erythrocyte membranes. (**Option D is ruled out**).

Applied Microbiology

1. Which of the following items is sterilized by using the equipment shown in the given diagram? (*Types of Disinfection and Sterilization-Disinfection and Sterilization*) [Basic]

2. Which among the following methods is appropriate to sterilize the culture media as shown in the given below figure? (*Culture and Media Preparation-General Characteristics of Microbes*) [Moderate]



- a. Media with sugars
- b. Dental instrument
- c. Culture media
- d. Test tubes

Ans. d. Test tubes

Explanation:

- The given image shows a hot air oven.
- The mechanism of sterilization is dry heat by means of conduction of hot air.
- Holding period – 160°C/2 hours (most common).
- It is mainly used to sterilize glassware, forceps, scissors, scalpels, glass syringes, swabs, liquid paraffin, dusting powder, fats and grease.

Other Options:

- Culture media and instruments are sterilized by autoclaving.
- Media with sugars are sterilized by the Tyndallization method.



- a. Autoclaving
- b. Pasteurization
- c. Hot air oven
- d. Inspissation

Ans. d. Inspissation

Explanation:

- The given image is Lowenstein Jensen media which is used as a selective media for *Mycobacterium tuberculosis*. All culture media are sterilized by autoclaving.

Media that should not be autoclaved are as follows:

- Egg containing media-e.g.: LJ media, Dorset egg media – sterilized by inspissation.
- Serum and sugars containing media-E.g.: Loeffler's serum slope – sterilized by Tyndallization.

Other Options:

- **Autoclaving:** Mechanism is steam under pressure. Holding period is usually **15 minutes** in 121°C – 15 lb/inch² pressure. **The most effective method to kill spores.** It is used for sterilization of culture media, clothes, aprons, gloves, surgical trays and instruments except sharps.
- **Hot air oven** is used to sterilize glassware, forceps, scissors, scalpels, glass syringes, swabs, liquid paraffin, dusting powder, fats and grease.

Pasteurisation-Method for Sterilization of Milk

- Flash method – 72°C for 20 seconds followed by rapid cooling to 13°C or lower.
- Holder method – 63°C for 30 minutes.

3. Which of the following stains is known as Acid-fast stain? (Bacteria-Pathogenic Organisms) [Basic]

- Albert stain
- Ziehl Neelsen stain
- Pasteur's stain
- Lister stain

Ans. b. Ziehl Neelsen stain

Explanation:

- Acid-fast bacteria, also known as acid-fast bacilli or simply AFB, are a group of bacteria sharing the characteristic of acid fastness.
- The *Ziehl-Neelsen (ZN) stain*, also known as the Acid-fast stain, is used in microscopic detection of *M. tuberculosis*. It was originally developed independently by Ziehl and Neelsen, who improved on the early work of Koch, Rindfleisch and Ehrlich.
- The reagents used in the staining are Ziehl-Neelsen carbol fuchsin, acid alcohol and methylene blue. Acid-fast bacteria become bright red after staining.
- The cell wall of *Mycobacterium* species typically contain mycolic acid, a waxy substance that makes it impervious to stain by aqueous staining solutions. These bacteria cannot be stained by simple stains or even by Gram staining. **Thus, option b. is correct.**
- *Albert staining technique* is used to detect the presence of metachromatic granulated bodies of *Corynebacterium diphtheriae*.
- Other options are distractors.

4. Which of the following methods is used to sterilize a glass petri dish? (Types of Disinfection and Sterilization-Disinfection and Sterilization) [Basic]

- Autoclaving at 121°C for 30–60 minutes
- Hot air oven at 160°C for 120 minutes
- Autoclaving at 134°C for 3 minutes
- Hot air oven at 121°C for 30–60 minutes

Ans. b. Hot air oven at 160°C for 120 minutes

Explanation:

- The method used to sterilize a glass petri dish is a hot air oven at 160°C for 120 minutes.
- Hot air oven uses dry heat for the sterilization of materials that may be damaged by moist heat or that are impenetrable to moist heat.
- This method involves heating the petri dish at a high temperature in a dry oven, which leads to the oxidation of the cell constituents.
- **The most commonly used cycles are:**
 - 170°C for 60 minutes,
 - 160°C for 120 minutes,
 - 180°C for 30 minutes.
- **Materials sterilized are:**
 - Glassware
 - Cotton swabs
 - Gel, oil, wax and dusting powder
 - Greasy paraffin wax
 - Metallic instruments

Incorrect Options:

Options A, C and D are incorrect. Refer to Option B for an explanation.

Learning Objective:

Sterilization of Glassware:

- When the glassware is exposed to dry heat, growth is inhibited due to oxidation of biomolecules.
- Duration of sterilization is temperature dependent: at higher temperatures, sterilization is achieved faster.
- The most commonly used cycles are:
 - 170°C for 60 minutes
 - 160°C for 120 minutes
 - 180°C for 30 minutes

5. Which of the following is specifically found in gram-negative bacteria? (Morphology of Bacteria-General Characteristics of Microbes) [Moderate]

- Lipoproteins
- Peptidoglycan
- Lipopolysaccharides
- Teichoic acid

Ans. c. Lipopolysaccharide

Explanation:

- Gram-negative bacteria have a distinctive cell wall structure that includes an outer membrane, a thin peptidoglycan layer and an inner plasma membrane.
- Lipopolysaccharides serve as an endotoxin and is responsible for the toxic effects associated with gram-negative bacterial infections.

Pharmacology

1. The nurse is caring for an adult with myasthenia gravis who has been prescribed neostigmine. Which medication should the nurse have readily available because the patient is taking neostigmine? (Drugs used for Treatment of Poisoning, Miscellaneous) [Moderate]

- a. Atropine
- b. Vitamin K
- c. Protamine sulfate
- d. Calcium gluconate

Ans. a. Atropine

Explanation:

- **Option a) Atropine—Correct Answer:** Neostigmine is a cholinergic medication that increases the availability of acetylcholine, which can cause excessive cholinergic effects. Atropine is an anticholinergic medication that serves as the antidote for neostigmine in case of overdose or excessive cholinergic effects.
- **Option b) Vitamin K—Incorrect:** Vitamin K is used to reverse the effects of warfarin (Coumadin), an anticoagulant and is not related to the treatment of neostigmine or myasthenia gravis.
- **Option c) Protamine sulfate—Incorrect:** Protamine sulfate is the antidote for heparin, a blood thinner and does not have any effect in counteracting the actions of neostigmine.
- **Option d) Calcium gluconate—Incorrect:** Calcium gluconate is used to treat calcium channel blocker overdose or magnesium sulfate toxicity, but it is not related to the management of neostigmine administration.

Summary: Atropine is the appropriate medication to have available when a patient is taking neostigmine, as it can counteract excessive cholinergic effects. Other options like vitamin K, protamine sulfate and calcium gluconate are used for different purposes unrelated to neostigmine toxicity.

2. Which medication should the nurse have on hand for a client receiving heparin therapy? (Drugs used for Treatment of Poisoning, Miscellaneous) [Moderate]

- a. Vitamin K
- b. Caffeine
- c. Calcium gluconate
- d. Protamine sulfate

Ans. d. Protamine sulfate

Explanation:

- **Option a) Vitamin K:** Vitamin K is used to counteract the effects of warfarin (Coumadin), a medication that reduces blood clotting by inhibiting vitamin K-dependent clotting factors. It is not effective for reversing the anticoagulant effects of heparin.
- **Option b) Caffeine:** Caffeine is a central nervous system stimulant that enhances alertness and increases heart rate. It is not an antidote for any anticoagulant medications, including heparin.
- **Option c) Calcium gluconate:** Calcium gluconate is used to reverse the effects of magnesium sulfate toxicity, often in cases of severe preeclampsia or eclampsia. It has no role in reversing heparin's anticoagulant effects.
- **Option d) Protamine sulfate:** Protamine sulfate is the specific antidote for heparin overdose or excessive anticoagulation. It works by binding to heparin, neutralizing its anticoagulant effects.

3. Activated charcoal is a: (Drugs used for Treatment of Poisoning, Miscellaneous) [Basic]

- a. Chemical antidote
- b. Mechanical antidote
- c. Chelating agent
- d. Demulcent

Ans. b. Mechanical antidote

Explanation:

- Activated charcoal acts as a mechanical **antidote**.
- **Mechanical antidotes:** They neutralize poisons by mechanical action or prevention of their absorption.
 - **Activated charcoal:** It acts mechanically by adsorbing and retaining organic and mineral poisons within its pores and thus delays the absorption from the stomach.
 - **Demulcents:** Substances that coat the gastric mucous membrane and thus do not permit the poisons to cause any damage, e.g. milk, starch, egg-white, mineral oil, milk of magnesia, aluminum hydroxide gel, etc.
 - **Bulky food** is the mechanical antidote to glass powder, wherein it acts by imprisoning its particles within its meshes.

- Chemical antidotes:** They neutralize poison by forming harmless or insoluble compounds or by oxidation when it is brought in contact with them.
 - Common salt decomposes silver nitrate, forming the insoluble silver chloride.
 - Potassium permanganate has oxidizing properties. 1:5000 solution is used in opium poisoning.
- Chelating agents** (metal complexing agents) are used in the treatment of heavy metal poisoning. The metal-agent complex is more water-soluble than the metal itself, resulting in higher renal excretion of the complex.

4. Which of the following is used as antidote for nicotine overdose? (Drugs used for Treatment of Poisoning, Miscellaneous) [Moderate]

- Amyl nitrite
- Atropine
- Naloxone
- Bupropion

Ans. b. Atropine

Explanation:

- Nicotine overdose leads to excessive stimulation of **nicotinic and muscarinic receptors** in the autonomic nervous system.
- Atropine is a **muscarinic receptor antagonist**, which helps counteract symptoms like bradycardia, excessive salivation and bronchorrhea caused by cholinergic overactivity.
- Option a. Amyl nitrite:** Used in **cyanide poisoning**, not nicotine.
- Option c. Naloxone:** Antidote for **opioid overdose**, has no effect on nicotine.
- Option d. Bupropion:** An antidepressant and smoking cessation aid, but **not used as an antidote** in acute nicotine poisoning.

5. A 40-year-old woman in labor presents with high blood pressure, swelling and protein in her urine. She is started on magnesium sulfate. Which medication should the nurse ensure is readily available at the bedside? (Drugs used for Treatment of Poisoning, Miscellaneous) [Moderate]

- Calcium gluconate
- Naloxone
- Phenytoin
- Glucose

Ans. a. Calcium gluconate

Explanation:

- Option a) Calcium gluconate:** Calcium gluconate is the antidote for magnesium sulfate toxicity. It is essential to have on hand because magnesium toxicity can cause severe respiratory depression, which calcium gluconate can counteract effectively.
- Option b) Naloxone:** Naloxone is a medication used to reverse the effects of opioid overdose, particularly respiratory depression. It is not effective against magnesium sulfate toxicity.

- Option c) Phenytoin:** Phenytoin is an anticonvulsant used to manage seizures, but it is not the preferred medication for women with preeclampsia and does not act as an antidote to magnesium sulfate.
- Option d) Glucose:** Glucose is administered to treat low blood sugar (hypoglycemia). It has no role in reversing magnesium sulfate's effects.

6. Which of the following drugs can be used as an antidote for fibrinolytic therapy? (Drugs used for Treatment of Poisoning, Miscellaneous) [Moderate]

- Protamine
- Streptokinase
- Heparin
- ϵ -Aminocaproic acid

Ans. d. ϵ -Aminocaproic acid

Explanation:

- ϵ -Aminocaproic acid can be used as an antidote for **fibrinolytic therapy**.
- It is a lysine analog that binds competitively to plasminogen, blocking plasminogen from binding to fibrin and the subsequent conversion to plasmin. This activity subsequently results in the **inhibition of fibrinolysis**.
- It should not be given unless hemorrhage is life-threatening because it inhibits intrinsic fibrinolytic activity and **can precipitate DIC**. Fresh frozen plasma and cryoprecipitate may also be used to replenish fibrin and clotting factors.

7. A 30-year-old drowsy male was brought to the casualty. His pulse was 130/min, respiratory rate-30/min. His lab reports findings are ABG-metabolic acidosis, Total serum calcium-6.8 mg/dL Blood Urea-100 mg/dL, Creatinine-3.4 mg/dL, Urine analysis-Calcium oxalate crystals. He showed improvement on nasogastric aspiration and administration of sodium bicarbonate, calcium gluconate and fomepizole. What substance did he most likely consume? (Drugs used for Treatment of Poisoning, Miscellaneous) [Moderate]

- Formaldehyde
- Ethylene glycol
- Paraldehyde
- Methyl alcohol

Ans. b. Ethylene glycol

Explanation:

- The given scenario point towards **ethylene glycol poisoning**.
- Ethylene glycol** is converted to **glyoxaldehyde** by alcohol dehydrogenase. Glyoxaldehyde causes **kidney damage**.
- Methanol is converted to **formaldehyde** by alcohol dehydrogenase. Formaldehyde causes **retinal damage** like blurring of vision/loss of vision.
- The principles of **treatment** for both these conditions are the same. It predominantly involves using **fomepizole** or ethanol to inhibit the metabolic conversion of these relatively non-toxic alcohols to their toxic metabolites.

Pathology and Genetics

1. Match the following diseases with their respective mode of inheritance. (Pattern of Inheritance-Introduction to Genetics) [Moderate]

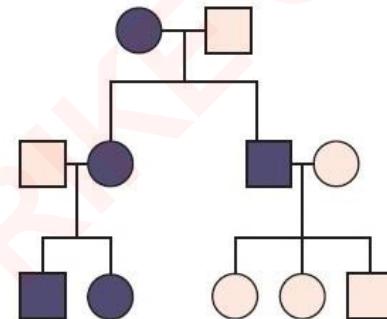
Column-A	Column-B
1) Cystic fibrosis	A. Mitochondrial inheritance
2) Duchenne muscular dystrophy	B. Autosomal recessive
3) Optic neuritis	C. Autosomal recessive
4) Marfan syndrome	D. X-linked recessive
a. 1-D, 2-C, 3-B, 4-A	
b. 1-B, 2-D, 3-A, 4-C	
c. 1-B, 2-C, 3-A, 4-D	
d. 1-D, 2-C, 3-B, 4-A	

Ans. b. 1-B, 2-D, 3-A, 4-C

Explanation:

Mitochondrial Inheritance:

- Mother transmits disorder (maternal inheritance) to all her children but females may show signs of disease.
- Variable expression in a population or even within a family is due to heteroplasmy.
- **Heteroplasmy:** Phenomenon where cells have variable proportion of normal and mutant mtDNA in their organelle is known as heteroplasmy.



□ = unaffected male; ■ = affected male; ○ = unaffected female; ● = affected female.

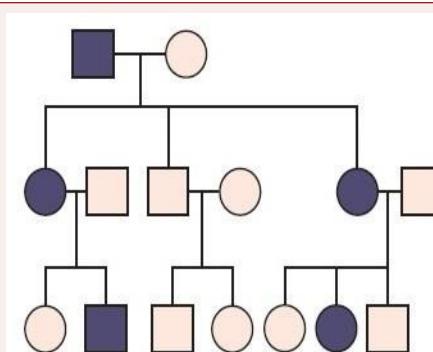
Figure: Mitochondrial inheritance pedigree

Examples:

- Most common mitochondrial inheritance is **MELAS syndrome** (mitochondrial encephalopathy, lactic acidosis and stroke like syndrome).
- Leber hereditary optic neuropathy.
- Neurogenic weakness, ataxia and retinitis pigmentosa (NARP).
- Leigh's syndrome.
- Chronic progressive external ophthalmoplegia (CPEO).
- Kearns-Sayre syndrome

X Linked Dominant

- Rare pattern of inheritance.
- Affected male will transmit it **100% to their daughters** and none to their sons.
- Affected (diseased) female will transmit the 50% of disease to their sons and daughters.
- **Examples:**
 - "Red rose for all children"
 - Red: X-linked hypophosphatemic rickets
 - Rose: Rett syndrome
 - For: Fragile X syndrome (XR > XD)
 - All: Alport syndrome
 - Children: Charcot-Marie-Tooth Disease



Adult Health (Medical Surgical) Nursing

ADULT HEALTH (MEDICAL) NURSING

1. A 50-year-old HIV patient presented with a painful lesion, as shown in the image. What is the most likely diagnosis? (HIV & AIDS-Immunological problems) [Moderate]



- a. Basal cell carcinoma
- b. Kaposi sarcoma
- c. Malignant melanoma
- d. Squamous cell carcinoma

Ans. b. Kaposi sarcoma

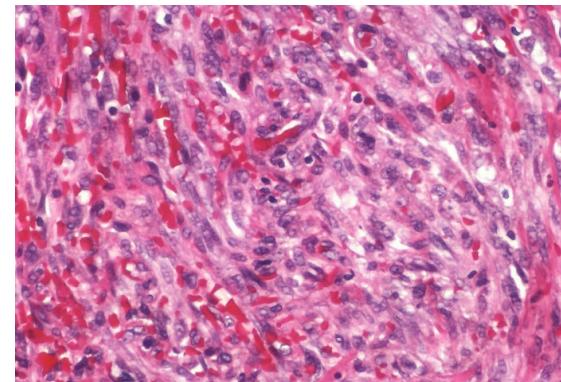
Explanation:

- The above image showing a **violaceous growth on the hard palate** in an HIV patient is diagnostic of **Kaposi sarcoma**.
- **Kaposi sarcoma (KS)** is a vascular neoplasm caused by **human herpesvirus 8 (HHV8)** and is **very common** in patients suffering from acquired immunodeficiency syndrome (AIDS). KS is considered to be an AIDS-defining disease.
- AIDS-associated KS is an **AIDS-defining** illness and is the **most common malignancy** associated with HIV infection. Involvement of the **oral cavity** is most common in AIDS-related KS, but it can be seen in other variants also. Oral KS (OKS) most often involves the **hard and soft palate, gingiva and dorsal tongue** with plaques or tumors. The color of the lesions may range from **non-pigmented to brownish-red or violaceous**.

Other forms of KS include

- **Classic Kaposi sarcoma:** It has the following three clinical stages patches, plaques and nodules.
- **Endemic African KS**
- **Transplant-associated KS** is **more common** after **solid organ transplant** patients receive immunosuppression as compared to the marrow or stem-cell transplant patients.

The given images show coalescent red-purple macules and plaques of the skin and the histologic appearance of Kaposi sarcoma, demonstrating sheets of proliferating spindle cells:



There is no definitive cure but KS is **highly radiosensitive** and achieves complete response in most cases. In **AIDS-associated KS**, instituting highly active **antiretroviral therapy (HAART)** often (but not always) results in **regression of KS**. In localized cutaneous KS, excision and cryotherapy can be used. Intralesional administration of vinblastine, interferon- α 2b and imiquimod is also effective.

Other Options:

- **Option a:** **Basal cell carcinoma (BCC)** most commonly tends to occur in **sun-exposed areas** of the face like the **nose, eyelid and other parts of the face**. BCC can vary from red, flesh-colored or white macules or papules, to nodules and ulcerated lesions. The

nodular variant is the most common subtype characterized by raised, pearly pink papules with telangiectasias and occasionally a depressed tumor center with raised borders giving the classic “**rodent ulcer**” appearance. The image below shows a case of basal cell carcinoma.



- Option c: **Malignant melanoma** primarily arises from melanocytes at the epidermal-dermal junction but may also originate from mucosal surfaces of the **oropharynx, nasopharynx, eyes, proximal esophagus, anorectal and female genitalia**. Lentigo maligna, superficial spreading, acral lentiginous and nodular are the variants of malignant melanoma. It includes **pigmented lesion** that has enlarged, ulcerated or bled. Amelanotic lesions appear as raised pink, purple or flesh-colored skin papules. The diagnostic clue for melanoma is the **ABCDE** criteria. It comprises of
 - Asymmetry
 - Border irregularity
 - Color variegation
 - Diameter of more than 6 mm
 - Evolution or change
- The image below shows a case of malignant melanoma.



- Option d: **Squamous cell carcinoma (SCC)** is the second most common skin cancer. UV radiation exposure is the primary risk factor for SCC. Classically appears as a **scaly or ulcerated papule or plaque** that can bleed with minimal trauma, but the **pain is rare**. It can exhibit in situ (confined to the epidermis) or invasive subtypes. Wide surgical excision including subcutaneous fat is the treatment of choice for SCC.

Classification of Vascular Tumors and Tumor-like Conditions

Benign Neoplasms, Developmental and Acquired Conditions

- Hemangioma**
 - Capillary hemangioma
 - Cavernous hemangioma
- Pyogenic granuloma**
- Lymphangioma**
 - Simple/capillary lymphangioma
 - Cavernous lymphangioma (cystic hygroma)
- Glomus tumor**
- Vascular ectasias**
 - Nevus flammeus
 - Spider telangiectasia (arterial spider)
 - Hereditary hemorrhagic telangiectasia (Osler-Weber-Rendu disease)
- Reactive vascular proliferation**
 - Bacillary angiomatosis

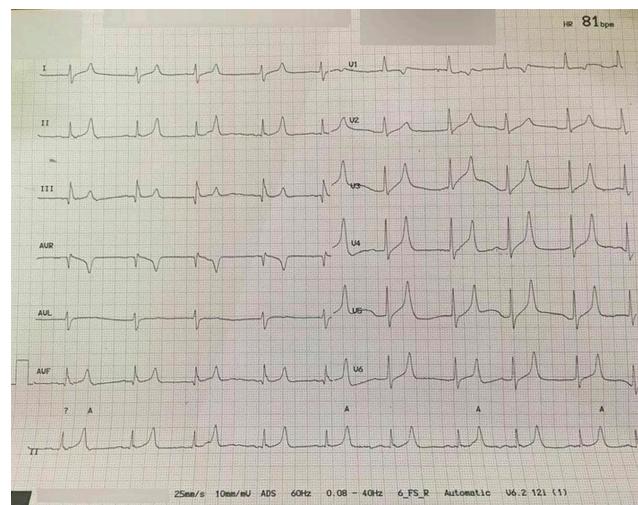
Intermediate-grade Neoplasms

- Kaposi sarcoma
- Hemangioendothelioma

Malignant Neoplasm

- Angiosarcoma
- Hemangiopericytoma

2. A patient who is a known case of hypertension on multiple anti-hypertensive medications came to OPD. His ECG finding is given below. Which of the following drugs is responsible for the ECG finding? [Coronary Artery Diseases (CAD), Hypertension-Cardiovascular Diseases] [Moderate]



- Prazosin
- Metoprolol
- Hydrochlorothiazide
- Spironolactone

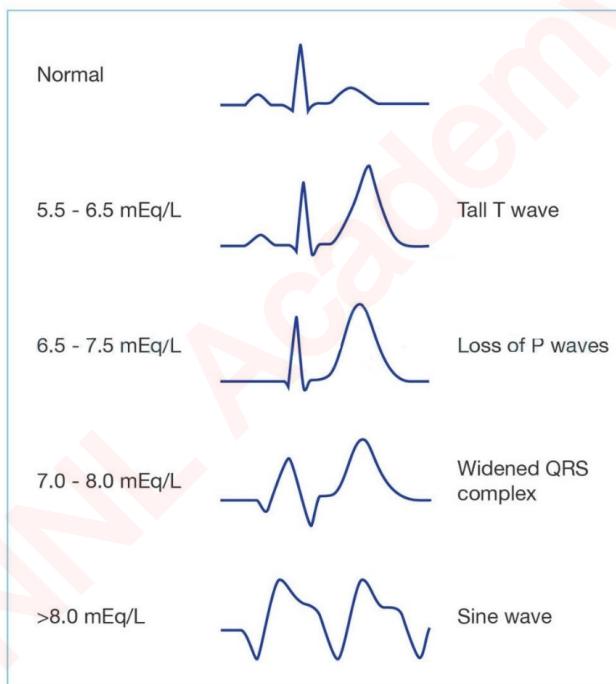
Ans. d. Spironolactone

Explanation:

- Based on the ECG findings (**tall T waves**), the most likely diagnosis is **hyperkalemia** and among the given drugs, **spironolactone** is the drug that is most likely to cause hyperkalemia.
- Spironolactone** is a potassium-sparing diuretic. It is a **competitive inhibitor** of the **mineralocorticoid receptor** in the **late distal tubule** and **collecting duct** of the kidneys. It causes a decrease in sodium reabsorption and potassium excretion in the distal tubule. As a result, spironolactone **promotes sodium diuresis** but **maintains body potassium levels**.
- Hyperkalemia is defined as a serum potassium level of more than **5.5 mEq/L**.
- Hyperkalemia can cause drastic conduction changes. It can be diagnosed by a sequence of changes affecting the **ST-T segments** and **QRS complex**. ST-T segment changes reflect a change in **repolarization** while QRS complex changes reflect a change in **depolarization**.
- The ECG changes that can be seen in hyperkalemia depend on the extent of hyperkalemia.

Serum potassium level	ECG change
5.5–6.5 mEq/L	Tall, peaked T waves with 'tent' or 'pinched' shape
6.5–7.5 mEq/L	Loss of P waves
7.0–8.0 mEq/L	Widened QRS complex
>8.0 mEq/L	Sine wave

Sequential ECG changes seen in hyperkalemia



Drugs that cause Hyperkalemia Include

- Angiotensin-converting enzyme inhibitors
- Angiotensin receptor blockers eg. Losartan
- Mineralocorticoid receptor blockers like spironolactone, eplerenone, drospirenone
- Epithelial sodium channel (ENaC) blockers like amiloride and triamterene
- Others: Trimethoprim, pentamidine, nafamostat

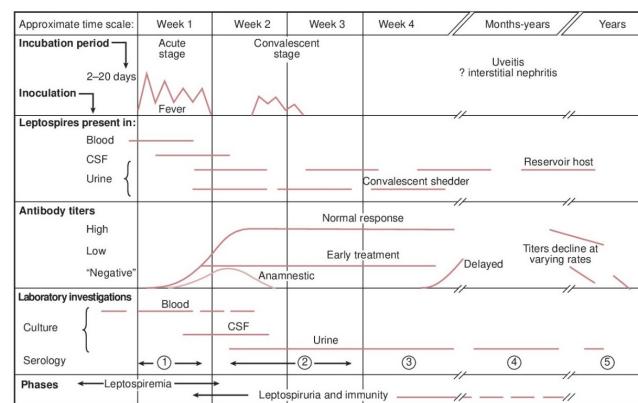
Treatment of hyperkalemia involves the following:

- Administer intravenous **calcium gluconate**, which raises the threshold and reduces excitability. It is cardioprotective
- Administer **regular insulin with dextrose**. The insulin will reduce the serum potassium concentration by causing an intracellular shift. The dextrose will counteract the hypoglycemic effects of insulin.
- Salbutamol nebulization** will also shift potassium inside the cell.
- Remove potassium with calcium-based resins, diuretics or hemodialysis.

Other Options:

- Option a:** The major potential side effect of **prazosin** is **postural hypotension** and **syncope**.
- Option b:** **Metoprolol** is a cardioselective beta blocker. **Cardioselective beta blockers** are less likely to cause hyperkalemia as an adverse effect. The risk of metoprolol-induced hyperkalemia is increased if the patient is also diabetic.
- Option c:** **Hydrochlorothiazide** increase the renal excretion of potassium and thus cause **hypokalemia** if the dietary intake of potassium is less.

3. Following is a graphic representation of a patient admitted to the medicine ward with fever. What could be the possible diagnosis? (*Communicable Diseases-Nursing Management of Patients with Communicable Diseases*) [Moderate]



a. Cerebral malaria b. Brucellosis
 c. Leptospirosis d. Typhoid

Ans. c. Leptospirosis

Child Health Nursing (Pediatrics)

1. At what age a child is able to do the following activity, as given in the image? (Growth and Development Assessment-Healthy Child) [Basic]



- a. 1 year
- b. 2 years
- c. 3 years
- d. 5 years

Ans. d. 5 years

Explanation:

- In the given image the child is tying shoelaces which is done by 5 years of age.

Other Options:

- Some other dressing milestones are:
 - **Option: A:** 1 year-Pull of mittens, caps and socks.
 - **Option: B:** 2 years-Put on shoes or socks and can undress completely.
 - **Option: C:** 3 years-Dress and undress.

2. At what age does a child show the following feature? (Growth and Development Assessment-Healthy Child) [Basic]



- a. 2 months
- b. 3 months
- c. 6 months
- d. 9 months

Ans. c. 6 months

Explanation:

- In the given image the child smiles in the mirror/mirror play.
- Child smiles at himself in the mirror at 6 months.

Other Options:

- **Option (a):** At 2 months-Social smile.
- **Option (b):** At 3 months-Recognize mother.
- **Option (d):** At 9 months-Waves bye-bye.

3. Which neural tube abnormality features incomplete fusion of the occipital area along with retroflexion of the neck and trunk as depicted in the image? (Congenital Disorders-Neurological Disorders) [Moderate]



- a. Anencephaly
- b. Craniorachischisis
- c. Iniencephaly
- d. Encephalocele

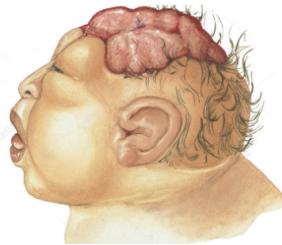
Ans. c. Iniencephaly

Explanation:

- **Iniencephaly:** Retroflexion (backward bending) of the head on the cervical spine, spina bifida of the cervical vertebrae and a deficiency in the occipital bone are three features shared by uncommon types of neural tube disorders.
- While there are a few unusual cases of live births, the most common outcome is stillbirth, which is always followed quickly by death.

Other Options:

- **Anencephaly:** Total or partial absence of the brain calvarium.



- **Encephalocele:** Brain and meninges herniating as a result of calvaria deficiencies.



- **Craniorachischisis:** A very serious or dangerous NTD called craniorachischisis is defined by a contiguous bone defect of the spine together with anencephaly, which is the absence of the brain and cranial vault without skin protection.



4. In which of the given condition do you see this type of sign? (Communicable Diseases in Children-Other infections and Communicable Diseases in Children) [Moderate]



- a. Late congenital syphilis
- b. Early congenital syphilis
- c. Tertiary syphilis
- d. Acquired syphilis

Ans. b. Early congenital syphilis

Explanation:

- The above given images are showing continued rhinitis and there are vesiculo-bullous lesions over the body especially over the palm and soles. This strongly suggests **early congenital syphilis**.

Triad of Early Congenital Syphilis:

- Snuffles-continuous rhinitis
- Hepatosplenomegaly
- Syphilitic pemphigus-vesiculo-bullous lesions. Dermatological manifestation.

Other Options:

- **Option (a): In late congenital syphilis**-There are Hutchinson triads in which first is Hutchinson teeth, second is interstitial keratitis and third is sensorineural hearing loss. And other features are saddle nose and periostitis (Olympian brow, saber tibia etc). Investigation of choice is the VDRL titre.
- **Option (c):** There are three types of tertiary syphilis cardiovascular, neurosyphilis and gummatous syphilis. In gummatous syphilis there is gumma which breaks out to foramen ulcer.
 - In cardiovascular syphilis there is aortic regurgitation and cardiovascular manifestations.
 - In neurosyphilis there are personality changes, delusions, tabes dorsalis, lancinating pain, hallucinations, Argyll Robertson pupils and others.
- **Option (d): Acquired syphilis** mode of acquisition-Blood transfusion and sexual transmission. Two types of acquired syphilis:

Early Acquired:

- Primary
- Secondary
- Early latent

Late Syphilis:

- Late latent
- Tertiary syphilis

Mental Health Nursing

1. Term "id" and "superego" were coined by: (Theories-Principles and Concept of Mental Health Nursing) [Basic]

- a. Freud
- b. Skinner
- c. Erik Erikson
- d. Bleuler

Ans. a. Freud

Explanation:

- **Sigmund Freud's structural theory of mind** divides mental apparatus into the following:
 - **Id (new born)** is a reservoir for basic **survival instincts, aggression and survival drives**. It is based on the **pleasure principle** (immediate gratification). It is entirely unconscious.
 - **Ego (Reality Principle)** is the executive part of the mind that maintains the **balance between id and superego**. It is based on exposure to reality and utilizes influences from the external world to modify the id. It is conscious except for unconscious defence mechanism.
 - **Superego (Idealism Principle)** establishes and maintains a moral conscience in an individual by constantly comparing a person's thoughts and feelings to expected standard of behaviour.

2. According to Erikson the major conflict in the first year of life is between: (Theories-Principles and Concept of Mental Health Nursing) [Basic]

a. Trust Vs Mistrust

Page 1 of 1

- Trust Vs Mistrust is the major psychological conflict seen in the first year of life. In this stage, the child must learn to trust others during the first year of life (the sense of Trust Vs Mistrust) or they will have trouble forming close relationship as adults.

Stage and age	Goal	
Stage-1	Infancy Birth-18 months	Trust Vs Mistrust
Stage-2	Toddler 18 months-3 years	Autonomy Vs Shame and Doubt
Stage-3	Pre-school 3-6 years	Initiative Vs Guilt
Stage-6	Young adulthood 18-35 years	Intimacy vs Isolation

3. Freud's Model of Development which compromise id, ego and superego is called: (*Theories-Principles and Concept of Mental Health Nursing*) [Basic]

- a. Genetic model
- b. Unconscious model
- c. Constrictive model
- d. Structural model

Ans. d. Structural model

Explanation:

- Freud developed the psychoanalytic theory of personality development, which argued that personality is formed through conflicts among three fundamental structures of the human mind.
- **Sigmund Freud's structural theory of mind** divides mental apparatus into the following:
 - **Id (new born)** is a reservoir for basic **survival instincts, aggression and survival drives**. It is based on the **pleasure principle** (immediate gratification). It is entirely unconscious.
 - **Ego (reality principle)** is the executive part of the mind that maintains the **balance between id and superego**. It is based on exposure to reality and utilizes influences from the external world to modify the id. It is conscious except for unconscious defence mechanism.
 - **Superego (idealism principle)** establishes and maintains a moral conscience in an individual by constantly comparing a person's thoughts and feelings to expected standard of behaviour.

4. Emotional release and discharge after consciously reliving a painful experience that has been repressed is known as: (Defense Mechanisms-Principles and Concept of Mental Health Nursing) [Basic]

- a. Catharsis
- b. Abreaction
- c. Venting out
- d. Guided relaxation

Ans. b. Abreaction

Explanation:

- **Abreaction** is a psychoanalytical term for reliving an experience to release it emotionally. It is a specific type of catharsis done by becoming conscious of repressed traumatic events.
- **Catharsis** is general term for the process of releasing strong or repressed emotions. It can be done through various mediums, like expressing emotions through art. When the unconscious repressed memories are consciously recalled and relived, this technique is specifically called abreaction.

5. The defence mechanism in phobia is: (Defense Mechanisms-Principles and Concept of Mental Health Nursing) [Basic]

- a. Displacement
- b. Dissociation
- c. Distortion
- d. Conversion

Ans. a. Displacement

Explanation:

- Displacement is the defence mechanism in phobias.

Table: Defence mechanisms that operate in various disease

OCD	Reaction formation, Undoing
Phobia	Displacement
Neurosis	Repression
Grief	Denial
Borderline personality	Splitting
Schizophrenia	Projection
Enuresis	Regression

6. 'Interpretation of Dreams' by Sigmund Freud's includes all the following mechanism except: (Theories-Principles and Concept of Mental Health Nursing) [Basic]

- a. Condensation
- b. Displacement
- c. Repression
- d. Symbolism

Ans. c. Repression

Explanation:

- Repression is not mechanism through which dreams manifest. It is the better due to which the thoughts and events stored in our unconscious mind do not come out to our conscious mind and awareness.
- According to 'Interpretation of Dreams' written by Sigmund Freud, dreams represent unconscious wishes or thoughts which are not accepted by the conscious mind. They manifest through the following mechanism:

- o **Symbolism:** Representation of highly charged ideas or objects through innocent images that are in some way connected.
- o **Displacement:** Transfer of mental energy from one object to a substitute or symbolic representation of the object.
- o **Condensation:** Mechanism by which multiple unconscious wishes combine into single image or when one unconscious wish gets distributed into multiple images.
- o **Projection:** Attributing one's own unacknowledged feeling to others.
- o **Secondary elaborations:** Process by which the ego organizes illogical, bizarre and absurd images into a more coherent form in dreams.

7. There is a complex that is named after a legendary Greek who unknowingly killed his father and married his mother. This complex develops in children in which stage of the psychosexual development? (Theories-Principles and Concept of Mental Health Nursing) [Basic]

- a. Oral
- b. Anal
- c. Phallic
- d. Genital

Ans. c. Phallic

Explanation:

- The above complex develops in the phallic stage of psychosexual development and the complex is called Oedipus complex (named after the legendary Greek hero 'Oedipus').
- The phallic phase has 2 complexes **Oedipus complex** in a male child and **Electra complex** in a female child.
- The **Oedipus complex** consists of a **desire for sexual involvement with the mother** and a sense of rivalry with the father. The male child is also scared that if the father finds out, he will castrate him, this is called **castration anxiety**.
- The opposite is true **Electra complex** which is the **desire for sexual involvement with the father** and a sense of rivalry with the mother. The girl child becomes aware of the fact that she does not have a penis, this is called **penis envy** and she holds her mother responsible for it. The stage gets resolved when the female child starts identifying with mother.
- The organ of principal interest in children of both the sexes is the penis.

8. According to Erik Erikson's stages of psychosocial development, in the age group of 13-21 years, which of the following crisis is seen? (Theories-Principles and Concept of Mental Health Nursing) [Basic]

- a. Intimacy vs isolation
- b. Identity vs role confusion
- c. Industry vs inferiority
- d. Initiative vs guilt

Ans. b. Identity vs role confusion

Community Health Nursing

1. Every pregnant woman receives a free antenatal check-up on the 9th of each month, along with free medicines and delivery services, including cesarean sections, under the JSSK program. What does JSSK stand for? (National Programs-Reproductive, Maternal, Newborn, Child and Adolescent Health) [Basic]

2. The given below image corresponds to which health program and disease? (National Health Programs-Communicable Diseases and National Health Programs) [Basic]



- a. Janani Shishu Swasthya Karyakram
- b. Janani Shishu Suraksha Kendra
- c. Janani Shishu Suraksha Karyakram
- d. Janani Shishu Swasthya Kendra

Ans. c. Janani Shishu Suraksha Karyakram

Explanation:

JSSK stands for Janani Shishu Suraksha Karyakram. It is an initiative by the Indian government aimed at reducing maternal and infant mortality.

The **provisions** of JSSK include:

- Free transport
- Free treatment
- Free drugs and consumables
- Free diagnostics and diet
- Free and cashless delivery
- Free C-Section
- Free provision of blood

Note: Previously under JSSK, the free entitlements were provided only for sick newborns till 30 days after birth. Now it is expanded to cover infants also.



- a. AROHI for HIV
- b. AMITHA for polio
- c. SAPANA for leprosy
- d. GAURI for cataract

Ans. c. SAPANA for leprosy

Explanation:

- The given image is of SAPANA for leprosy. Sapana refers to a local school-going girl who helps to spread awareness in the community.
- The other **developments** under NLEP are:
 - **Mycobacterium Indicus Prani (MiP) vaccine** for multibacillary leprosy patients and their contacts (it is in a project mode).
 - **Nikusth:** A web-based system for the data management of leprosy cases.

Note: Meena is a nine-year-old girl, who is the symbol of UNICEF's Girl Empowerment Programme to impart important messages on gender, child rights, education, health and development in the South Asian region.

The given below posters depict the role played by **Sapna**:



3. The given below image belongs to which of the following programmes? (National Health Programs-Noncommunicable Diseases and National Health Programs) [Basic]



- a. Rashtriya Kishor Swasthya Karyakram
- b. National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke
- c. Ayushman Bharat-National Health Protection Mission
- d. Family Planning Campaign

Ans. b. National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke

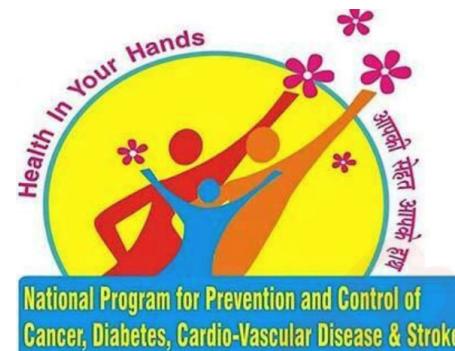
Explanation:

- The image shows the logo of the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD), which was earlier called the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS).
- NPCDCS was launched in 2010 in order to prevent and control major NCD (non-communicable diseases). It focuses on strengthening infrastructure, human resource development, health promotion, **early diagnosis, management and referral**.
- Under NPCDCS, NCD Clinics are being set up at **District** and **CHC** levels, to provide services for early diagnosis, treatment and follow-up for common NCD. NPCDCS has **specialized facilities** at the **district hospital** level. At the **subcentre** level under NPCDCS, **screening and referral** are done.
- The NPCDCS has **separate components** for **cancer** and other non-communicable diseases like **diabetes** and **stroke**. It has been implemented in over 100 districts in 21 states. For the **cancer component**, there is the **Tertiary Care Cancer Centers (TCCC)** scheme, which aims at setting up/strengthening **State Cancer Institutes (SCI)** and TCCCs all over the country, for providing **comprehensive cancer care** in the country.

Join the NNL Academy Today!

Join the NNL EduHub Jaipur Today!

Note: Non-alcoholic fatty liver disease (NAFLD) has been integrated with this programme in 2021.



Other Options:

- **Option-A:** Rashtriya Kishor Swasthya Karyakram



- **Option-C:** Ayushman Bharat-National Health Protection Mission



- **Option-D:** Family Planning Campaign



Forensic Nursing

1. Evidences include which of the following? (Evidence Documentation-Evidence Preservation-Role of Nurses) [Basic]

- i. Dirt
- ii. Semen
- iii. Saliva
- iv. Hair
- a. i, ii, iii
- b. i, ii, iii, iv
- c. iii, iv
- d. i, iii, iv

Ans. b. i, ii, iii, iv

Explanation:

- Evidence is defined as something that gives proof or leads to a conclusion. There are various types of evidence such as:
 - **Testimonial evidence:** It is also known as direct evidence, which is a statement made in court by witnesses offered as proof, includes oral or written statements given to the police as well as testimony in court by people who witnessed an event.
 - **Physical evidence:** It is also known as real evidence, refers to any tangible object that demonstrates a crime has occurred and helps establish a connection between the victim and the perpetrator. For instance, glass fragments, clothing, footwear, hair, fibers, bullets, sharp objects, physical injuries and lab specimens.
 - **Physical evidence has further sub types:**
 - **Transient evidence:** An evidence that can be washed away, damaged, lost or destroyed either intentionally or by environmental factors.
 - **Trace evidence:** It is found in small but measurable amounts, such as strands of hair, fibers or skin cells.
 - **Conditional evidence:** It is produced by specific event or action such as high smoke related, fire body, crime scene vehicle, etc.
 - **Indirect evidence:** That have been concluded or consolidated without any direct observation.
 - **Circumstantial evidence:** A direct evidence from a witness who saw or heard about the incident/crime.

2. An evidence should be stored and packed to: (Evidence Collection and Preservation-Evidence Preservation-Role of Nurses) [Basic]

- a. Prevent loss
- b. Prevent contamination
- c. Increase damage
- d. Both a and b

Ans. d. Both a and b

Explanation:

- The evidence should be handled and stored in a way that prevents contamination or alteration. It involves the use of protective gear, such as gloves or masks and the use of appropriate packaging materials, such as paper bags, envelopes or glass containers.
- It is vital that the evidence is appropriately packed to avoid damage during transport and must be preferably sealed in tamper-evident/resistant bags or with tamper-evident tapes. **Thus, option d. is correct.**

3. The gradual decrease in body's temperature after death is known as: (Evidence Documentation-Evidence Preservation-Role of Nurses) [Basic]

- a. Stiff mortis
- b. Algor mortis
- c. Rigor mortis
- d. Livor mortis

Ans. b. Algor mortis

Explanation:

- The early post-mortem phase is most frequently estimated using the classical triad of post-mortem changes—rigor mortis, livor mortis and algor mortis.
- Algor mortis is the cooling (or decrease in body temperature) of the body after death, primarily due to the loss of homeostatic regulation by the hypothalamus, in conjunction with the loss of heat to the environment by conduction, convection and radiation. It is seen within 15 minutes after death and in this the Body core temperature (BCT) decreases. It is the most accurate method of estimating Time since death (TSD) in the early post-mortem phase. **Thus, option b. is correct.**

Midwifery/Obstetrics and Gynecology Nursing

1. What is the most common cause of the following presentation?
(Malpresentation-Abnormal Labor)

[Basic]



- a. Prematurity
- b. Hydrocephalus
- c. Placenta previa
- d. Polyhydramnios

Ans. a. Prematurity

Explanation:

- The presentation depicted in the image is **breech presentation**. The most common cause of this presentation is **prematurity**.
- The incidence of breech at term is 3%. At 28 weeks of pregnancy, 20% of women have a breech presentation. The fetus undergoes **spontaneous version** usually between 30-34 weeks thereby correcting its position by itself.
- Persistent breech occurs when this spontaneous version is prevented by any of the following causes:
 - Intrauterine death of the fetus
 - Anomalies such as trisomy 13, 18 and 21
 - Anomalies of uterus (septate/bicornuate)
 - Oligohydramnios and polyhydramnios
 - Twins

- Short cord
- Hydrocephalus
- Placenta previa
- Contracted pelvis

- **Recurrent/habitual breech** is when breech recurs in 3 or more pregnancies. It is usually due to **uterine anomalies** and **cornufundal attachment** of the placenta.

2. Identify the dermatological changes depicted in the given below figure? *(Physiological Changes During Pregnancy-Antenatal Care)*

[Basic]



- a. Linea nigra
- b. Striae gravidarum
- c. Chloasma
- d. Lochia

Ans. a. Linea nigra

Explanation:

- Linea nigra is called as pregnancy line.
- It is the dark line that develops across your belly during pregnancy.
- The linea nigra is the result of fluctuating hormones during pregnancy. One theory is that the hormones cause your body to produce larger amount of melanin (a compound responsible for giving pigment to your skin) and this extra pigmentation shows up as a dark pregnancy line on your stomach.



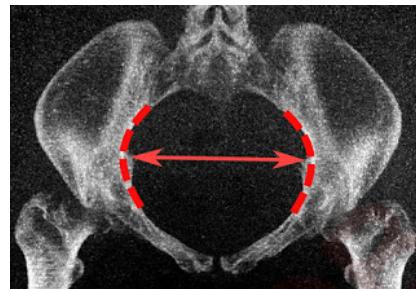
- **Striae gravidarum (stretch marks):**
 - Pregnancy stretch marks, also known as striae gravidarum, are a specific form of scarring of the skin on the abdominal area due to rapid expansion of the uterus as well as sudden weight gain during pregnancy.
 - It occurs in approximately 50% to 90% of pregnant women because of the separation of underlying connective tissue as the uterus enlarges within the abdominal cavity.
 - Dermal collagen is damaged and blood vessels dilate, resulting in the formation of reddish-purple early stretch marks.

- **Chloasma:**



- It is a common skin condition among pregnant women.
- It usually presents as dark, brownish patches of skin, mostly on the forehead, nose, upper lip and cheeks.
- It usually fades within a few months of delivery.
- **Lochia** is the vaginal discharge after giving birth, containing blood, mucus and uterine tissue. Lochia discharge typically continues for four to eight weeks after childbirth, a time known as the postpartum period or puerperium.

3. Identify the type of the pelvis demonstrated in the given image. (*Female Pelvis-Basics of Reproduction and Embryology*) [Basic]



- a. Anthropoid pelvis
- b. Android pelvis
- c. Gynaecoid pelvis
- d. Platypelloid pelvis

Ans. c. Gynaecoid pelvis

Explanation:

- The above image depicts the angle of the female pubic arch which is wide and round. Hence it is gynaecoid pelvis.
- Gynaecoid pelvis is the most common pattern of female pelvis. Transverse diameter of inlet is slightly bigger than AP diameter. No difficulty in engagement.

Other Options:

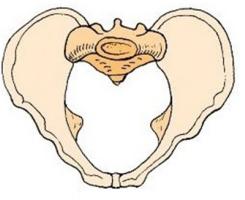
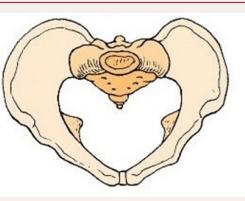
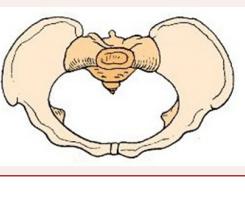
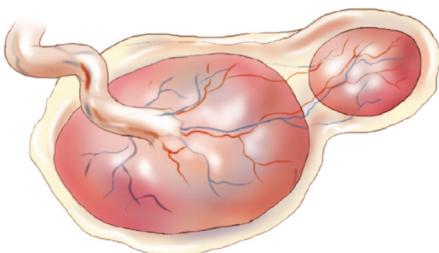
Anthropoid pelvis	
Android pelvis	
Platypelloid pelvis	

Table: Characteristic of each type of pelvis

Characteristic	Gynaecoid	Android	Anthropoid	Platypelloid
Intro	Female type M/C variety	Male type pelvis	Ape like pelvis	Flat pelvis least common variety
Relationship of transverse diameter to AP diameter of inlet	<ul style="list-style-type: none"> • Transverse oval • Transverse diameter of inlet is slightly bigger than AP diameter 	<ul style="list-style-type: none"> • Heart shape • Transverse diameter is >AP diameter 	<ul style="list-style-type: none"> • AP oval • Only pelvis with AP diameter >transverse diameter 	<ul style="list-style-type: none"> • Flat bowl like • Pelvis with transverse diameter>>(much more than AP diameter).

Characteristic	Gynaecoid	Android	Anthropoid	Platypelloid
Subpubic angle	90°	<90°		
Obstetric outcome	<ul style="list-style-type: none"> Normal female pelvis No difficulty in engagement M/C position of head LOT/ LOA 	<ul style="list-style-type: none"> Engagement is delayed Deep transverse arrest/ persistent occipito-posterior position common 	<ul style="list-style-type: none"> Diameter of engagement is AP diameter Direct occipito posterior position is M/C Non-rotation is common 	<ul style="list-style-type: none"> Head engages in transverse diameter with marked asynclitism Engaging diameter is super sub parietal diameter (18.5 cm) instead of usual biparietal diameter (9.5)
Type of delivery	Normal delivery	Difficult instrumental delivery	Face to pubes delivery	If head is able to negotiate the inlet by means of asynclitism ↓ Normal labor otherwise cesarean section

4. The placental abnormality shown in the image is: (Abnormalities of Placenta and Cord-Recognition and Management of Problems During Pregnancy) [Basic]



a. Normal placenta
b. Bilobata placenta
c. Battledore placenta
d. Succenturiate placenta

Ans. d. Succenturiate placenta

Explanation:

- When one or more accessory lobes are situated away from the main placenta, but the two portions connected by the membranes through which blood vessels run are called placenta Succenturiata.
- How does it develop?** Ans: When a part of chorionic leave is well developed (normally degenerate), it forms accessory lobes of placenta Succenturiata.
- How do you diagnose placenta Succenturiata?** Ans: A small lobe attached with the membranes through which blood vessels run from small lobes to the main placenta. In case of missing lobes there is a hole in the membranes with umbilical vessels running up to the margin of the hole.
- What is the clinical importance of the placenta Succenturiata?** Ans: There is chance of retained lobe of placenta which may cause PPH, infection and sub-involution.

Other Options:-

Table: Normal placenta

Placenta	Fetal surface	Maternal surface
	Smooth, glistening and is covered by the amnion which is reflected on the cord.	Dull greyish red in colour and is divided into 15-20 cotyledons.

Nursing Research and Statistics

1. Data are collected at one point in time is known as _____
(Data Collection Methods and Instruments-Data Collection)
[Basic]

- a. Experimental research
- b. Longitudinal research
- c. Time series research
- d. Cross sectional research

Ans. d. Cross sectional research

Explanation:

- **Option d.** Cross-sectional research involves collecting data at a single point in time to analyse and describe a population. These studies are used to measure the prevalence of health outcomes, understand determinants of health and describe features of a population. Such studies do not follow individuals up over time, usually inexpensive and easy to conduct. They are useful for establishing preliminary evidence in planning a future advanced study. **Hence, option d. is correct.**
- **Option a.** Experimental research is design under quantitative research in which experiments are conducted with a scientific approach using two sets of variables.
- **Option b.** Longitudinal research is a design that observes same variables over a long period of time. It is used to study how things change over time.
- **Option c.** Time series research design analyses a sequence of data points collected over an interval of time. The analysis records data points at consistent intervals over a set period of time.

2. Which of the following is an example of a primary source in a research study? *(Location and Sources of Review-Review of Literature)*
[Basic]

- a. A published commentary on the findings of another study
- b. A doctoral dissertation that critiques all research in the area of attention deficit disorder
- c. A textbook of medical-surgical nursing
- d. A journal article about a study that used large, previously unpublished databases generated by the United States census

Ans. d. A journal article about a study that used large, previously unpublished databases generated by the United States census

Explanation:

- **Option d.** This is a report of an original study; so, it is a primary source of the study. Primary sources provide raw information and first-hand evidence. Examples include interview transcripts, statistical data and works of art. A primary source gives direct access to the subject of the research.
- **Option a.** Secondary sources provide second-hand information and commentary from other researchers. Examples include journal articles, reviews and academic books. A secondary source describes, interprets or synthesizes primary sources.
- **Option b.** When citing a secondary source, it's usually not to analyse it directly. Instead, test its arguments against new evidence or use its ideas to help formulate a new one.
- **Option c.** A secondary source is anything that describes, interprets, evaluates or analyses information from primary sources. Common examples include encyclopaedias and textbooks that summarize information and ideas.

3. When the subject believes that he or she is receiving a real treatment and reports an improvement in his or her condition, is known as? *(Quantitative Research Design-Research Approaches & Designs)*
[Basic]

- a. Stimulus
- b. Placebo effect
- c. Control group
- d. Independent variable

Ans. b. Placebo effect

Explanation:

- Placebo effect is when a participant in a clinical trial shows improvement even though they are not being given an effective treatment. A placebo has **no therapeutic properties** and is often used in medical research and clinical trials to help scientists evaluate the effects of new medications/treatment.
- Other options are distractors.

4. The outcome of what is being measured is termed: *(Research Variables-Research Problem and Hypothesis)*
[Basic]

- a. The independent variable
- b. The dependant variable
- c. The predictor variable
- d. The hypothetical variable

Ans. b. The dependant variable

Nursing Education

1. Identify the teaching aid shown in the given image: (Types of Media-Still Visuals-Educational/Teaching Media) [Basic]



a. Epidiascope
b. Overhead projector
c. Slide projector
d. Film projector

Ans. b. Overhead projector

Explanation:

- The image shown above is a teaching aid known as the overhead projector. It is a visual aid, in particular a projected aid that helps in projecting the transparencies (which can be prepared in advance) through the source of light attached to it in form of an enlarged image. It helps in minimizing the time that the teacher takes to write on a board. Moreover, while presenting the transparencies, the teacher does not have to stand with her back towards the students that ensures better class control. A large group can be taught through it without boredom.

Type of visual aid	Description
• Epidiascope	Epidiascope is a projected aid which is a combination of episcope and diascope and it is used as a teaching aid to project transparent as well as opaque material. It projects films, film strips and slides.

Type of visual aid	Description
• Slide projector	A slide projector projects photographic slides and it is an opto-mechanical device. It projects the slides when light falls on them.
• Film projector	A film projector is used to project the film strips on the wall or the screen.

2. For a teacher teaching a class with large strength, which of the techniques is best? (Teaching Methods-Implementation) [Basic]

a. Debate, discussions, practical
b. Group work with a lecture
c. Lecture and class notes
d. Self-study and asking questions

Ans. c. Lecture and class notes



Nursing Management and Leadership

1. In ABC analysis, which of the items are frequently used and purchased in large quantities? (Material Resource Management-Staffing (Human Resource Management) [Basic])

- a. Vital items
- b. B items
- c. C items
- d. A items

Ans. c. C items

Explanation:

- ABC analysis system of inventory control describes about control of items where A items are those which need tight control and accurate records.
- B items are less tightly controlled and need good records.
- C items are the simplest control, which need minimal records.
- A items are of high cost, B items of intermediate cost whereas C items are low cost center.
- Class C or C items are correct answer which includes items those are frequently used and purchased in large quantities such as gloves, washers, clips, etc.

2. In which of the following methods, one nurse is assigned the responsibility for the care of each patient from admission to discharge? (Methods of Leadership Development-Leadership-Nursing Management) [Advance]

- a. Case method
- b. Primary nursing
- c. Functional method
- d. Team nursing

Ans. a. Case method

Explanation:

- **Option a.** In case method, one nurse is assigned the responsibility for the care of each patient from admission to discharge. It was the first type of delivery system used in nursing. It focuses on information and facts related to the patient and this knowledge is used in rendering nursing care. In these one or more patients are assigned to a nurse for a specific period of time.
- **Option b. Primary nursing** involves assigning one registered nurse for patient care over 24 hours period, 7 days a week right from admission to discharge.
- **Option c. Functional method** is basically a task method that involves providing patient care by which a nurse is assigned specific tasks for a large group of patients.

- **Option d.** In team nursing, a team of professionals, nursing auxiliaries and nursing aid is made. They all work together under a team leader to provide patient care from simple to complex.

3. A report of any event that is not consistent with the routine of hospital and is written only if any mishap or mistake occurs in patient care is called: (Documentation-Controlling) [Basic]

- a. Compliance report
- b. Hand-off report
- c. Incident report
- d. Clinical information report

Ans. c. Incident report

Explanation:

- **Option c. Incident report:** A report of any event that is not consistent with the routine operation of the hospital or standard patient care, typically documenting any mishaps or mistakes.

Rationale for Other Options:

- **Option a. Compliance report:** Generally, involves documenting adherence to laws, regulations and policies.
- **Option b. Hand-off report:** Refers to the communication of patient information from one healthcare provider to another during transitions in care.
- **Option d. Clinical information report:** Generally, involves the recording and sharing of clinical data and patient information, not specifically related to incidents or errors.

4. To make sure the medical-surgical unit has enough supplies, a nurse manager is doing an inventory analysis. Which inventory management strategy works best to guarantee that essential supplies, such as sterile dressings, are always available? (Projecting Requirement for Staff, Equipment and Supplies for-Hospital & Patient Care Units-Financial Management) [Moderate]

- a. Just-in-time (JIT) inventory management
- b. Analysis of ABC
- c. The last-in, first-out (LIFO) approach
- d. A system of periodic inventory

Ans. b. Analysis of ABC

Aptitude and Reasoning

1. A car travels 60 km in 1.5 hours. What is its average speed?

[Basic]

- a. 30 km/h
- b. 40 km/h
- c. 45 km/h
- d. 50 km/h

Ans. b. 40 km/h

Explanation:

If two objects move in **opposite directions**, their relative speed is the **sum** of their individual speeds.

$$\text{Relative speed} = 60 + 75 = 135 \text{ km/h}$$

$$\text{Time} = 2 \text{ hours}$$

$$\text{So, Distance} = \text{Relative speed} \times \text{Time} = 135 \times 2 = 270 \text{ km}$$

To find average speed, use the formula:

Speed = Distance/Time

Given:

- Distance = 60 km
- Time = 1.5 hours

$$\text{So, speed} = 60/1.5 = 40 \text{ km/h}$$

2. A train travels at 72 km/h. How much time will it take to cover 360 km?

[Basic]

- a. 4 hours
- b. 5 hours
- c. 6 hours
- d. 3 hours

Ans. b. 5 hours

4. If a person walks at 5 km/h, he is 10 minutes late. If he walks at 6 km/h, he reaches on time. What is the distance he has to walk?

[Basic]

- a. 5 km
- b. 4.5 km
- c. 6 km
- d. 3 km

Ans. a. 5 km

Explanation:

Let the required distance be **D km**.

$$\text{Time taken at 5 km/h} = D/5$$

$$\text{Time taken at 6 km/h} = D/6$$

$$\text{Difference} = 10 \text{ minutes} = 10/60 = 1/6 \text{ hour}$$

So,

$$D/5 - D/6 = 1/6$$

LCM of 5 and 6 is 30:

$$(6D - 5D)/30 = 1/6$$

$$\Rightarrow D/30 = 1/6$$

$$\Rightarrow D = 5 \text{ km}$$

5. A train 180 m long takes 18 seconds to pass a platform 120 m long. What is its speed?

[Basic]

- a. 20 km/h
- b. 60 km/h
- c. 72 km/h
- d. 90 km/h

Ans. b. 60 km/h

Explanation:

To pass a platform, total distance = **train length + platform length**

3. Two cars start from the same point. Car A travels at 60 km/h and Car B at 75 km/h. What is the distance between them after 2 hours if they are moving in opposite directions?

[Basic]

- a. 135 km
- b. 270 km
- c. 150 km
- d. 75 km

Ans. b. 270 km

NNL ONE

ALL INDIA RANKS IN OPEN CATEGORY

1000+ SELECTIONS IN AIIMS NORCET 9.0 (2025)

PUJA
BISWAS

AIR
2

RUCHITA
PATEL

AIR
3

DINESH

AIR
6

MAYUR
RANVA

AIR
9

HARSHAD
GURJAR

AIR
10

14
ANWESHA
MONDAL

18
KARSHAN
CHAUDHARY

20
SARFARAZ

23
DOMINIC
MAXIMILLION A

24
POULAMI
CHABRI

29
SAMEER
AHMAD DAR

31
SHANKAR
TAWAR

38
HILAL
AHMAD DAR

45
ADITI
KUNDU

52
SUNIL
NEHRA

61
MEENU
THAKUR

66
PRANAV
SAHU

68
DISHA
KHATUA

69
PRINCEY

83
MANU

86
RUCHIKA
COHIL

87
RUSOTI DAS

88
ANANYA
MANNA

98
TABASSUM

100
LANKESH

101
ANKUR
PANDEY

118
ARUNA

7500+ SELECTIONS FOR FIVE CONSECUTIVE YEARS (2025-2020)

OUR STAR PERFORMERS NNL ACADEMY 9.0 & 8.0



TOP ACHIEVERS OF AIIMS NORCET 8.0 -1.0



AND MANY MORE....



SCAN THE QR CODE
AND DOWNLOAD THE APP

FOR SALES AND INQUIRIES -

+91-9053791655

Visit Us: www.nnlone.com

Follow us:

ALL INDIA OPEN CATEGORY RANKS FOR 5 CONSECUTIVE YEARS (2020-25)

32
1,200

350
1,600

STUDENTS
IN TOP
10 RANKS

STUDENTS
IN TOP
50 RANKS

STUDENTS
IN TOP
100 RANKS

STUDENTS
IN TOP
500 RANKS

STUDENTS
IN TOP
1000 RANKS

ADMISSION OPEN
FOR NORCET 10 & 11

