



# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

**COMPREHENSIVE EXAMINATION 2023-24**

**ENGLISH H.S.C. PART-II (PRE. ENGINEERING & MEDICAL)**

According to the syllabus of the Board of Intermediate Education, Karachi



Time allowed: 20 Minutes

**SECTION 'A'**

Max. Marks: 20

**(MULTIPLE CHOICE QUESTIONS)**

- NOTE:**
- This section consists of 20 part questions and all are to be answered. Each question carries 1 mark.
  - The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.
  - Use only blue / black ballpoint pen or pointer on OMR sheet.
  - Avoid using pencil / white-o pen on OMR sheet.

**Q. 1: Choose the correct answer for each from the given options:**

- "I saw her singing at her work." Here 'I' means:**  
(A) Coleridge (B) Milton (C) Pope (D) Wordsworth
- The line "This is not too late to seek a newer world" has been extracted from:**  
(A) Endymion (B) The Solitary Reaper (C) Ulysses (D) An Essay on Man
- The Prisoner of Zenda in the novel is:**  
(A) Col. Sapt (B) Rudolf Elphberg (C) Rudolf Rassendyll (D) Black Michael
- Marshal Strakencz was:**  
(A) Commander in Chief (B) Chancellor (C) captain (D) none of these
- Pakistan is a new state; or to be more exact, a new:**  
(A) Power (B) Country (C) Republic (D) Democracy
- Asia contains half of the population of the world and very distinct civilizations which are at least:**  
(A) Two (B) Five (C) Three (D) Four
- The most dangerous and daring of the Michael's six is:**  
(A) Fritz (B) Rupert of Hentzau (C) Johann (D) Bersonin
- Sounding furrows means:**  
(A) Noiseless waves (B) Speedy waves (C) High waves (D) Noisy waves
- According to Bertrand Russell, Europe was sunk in:**  
(A) Communism (B) Capitalism (C) Barbarism (D) Socialism
- An upright man's only wealth is:**  
(A) His well spent age (B) his success in this world (C) his property (D) his loss
- The most important condition of survival in the modern world is:**  
(A) socialism (B) communism (C) industrialism (D) imperialism
- The dead body of Hans was brought back to the cottage by the:**  
(A) Doctor (B) Miller (C) Goat herds (D) Relatives
- When Samson was brought to entertain the Philistines, he was patient but:**  
(A) Angry (B) Happy (C) Furious (D) Undaunted
- Einstein believes that every man should be respected as an individual and no man be:**  
(A) Criticized (B) Idolized (C) Demoralized (D) Symbolized
- The secret of the strength of Samson had been revealed by:**  
(A) Sister in law (B) wife (C) mother in law (D) friend
- A "Ballad" is a:**  
(A) Song (B) dance (C) drama (D) dialogue
- To win the bet, Mrs. Oakentubb drove her car at the speed of:**  
(A) Twenty miles an hour (B) Thirty miles an hour  
(C) Thirty Five miles an hour (D) Fifty miles an hour
- The old and new portions of Zenda were connected by a:**  
(A) moat (B) drawbridge (C) Jacob's ladder (D) aimless life
- Einstein considered 'property, outward success and Luxury' as a thing which is:**  
(A) Contemptible (B) Strange (C) Fantastic (D) Fascinating
- Ghulam Ali Allana said in his poem, 'The Lost Star' after deviating from the commandments of God, he is another man of the race of the:**  
(A) Damned (B) blessed (C) beloved (D) heroes

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Time allowed: 2 hour 40 Minutes

### SECTION 'B' (SHORT-ANSWER QUESTIONS)

Max. Marks: 80

#### GENERAL INSTRUCTION:

**Section 'B':** Attempt any **ten part** questions from this section, selecting at least two part questions from each sub section. Answer should not exceed six sentences. All questions carry equal marks. **(40 Marks)**

**Section 'C':** It consists of 4 Descriptive questions. Answer all the questions. **(40 Marks)**

**Q. 2: (40 Marks)**

#### SUB SECTION I – (INTERMEDIATE ENGLISH BOOK II)

- What motives has the man for murdering Mrs. Oakentubb? OR Why does the author consider it useless to resist industrialization
- Why did the citizens of Columbus not care to talk about the events of the 12 March 1913? OR What reason did Liaquat Ali Kahn give to justify the demand for Pakistan?
- Act III of Silver Box, is a powerful and bitter play which criticize English Court. Comment OR Why was Hans unable to look after his garden?
- What is Albert Einstein's attitude to war? OR What are the political ideals of Einstein?

#### SUB SECTION II- (SELECTION FROM ENGLISH VERSES – PART II)

- Can you explain the meaning of the poem "Say Not the Struggle Naught Avaieth" and its overall message? OR What things of beauty did Keats find the most inspiring?
- What is the central idea of the poem 'The man of life upright'? OR How does William Wordsworth compare the song of the maiden to the song of two birds?
- How the hero of the play 'Samson' is made captive'? OR Why does the poet think that loveliness of beauty increases with time?
- Describe 'Made weak by time and fate but strong in will.....' OR Give the description of the fourth and fifth stages as described by William Shakespeare?

#### SUB SECTION III – (SELECTION FROM NOVEL-THE PRISONER OF ZENDA)

- Describe the summer house incident in the novel, 'The Prisoner of Zenda'. OR Why did Madam de Mauban not want Michael ascend the throne?
- Who are The Six? And what role do they play in the novel? OR Describe morganatic marriage.
- How will you describe THE LAST PAINFUL MEETING between Flavia and Rudolf Rassendyll? OR Heaven does not always make the right men kings? Who said it and why?
- What was the plan behind arranging ball? By whom was it proposed?

#### SUB SECTION IV – (GRAMMAR)

- xiii. Use the given homophones in your own words. (Any two)**  
(a) Accept : except (b) Serial: Cereal (c) Wear: Where (d) Beat: Beet (e) Counsel: Council
- xiv. Use any two Phrasal verbs in your sentence.**  
To Take off  
To Call off  
To Look into  
To bring up  
To Look down upon
- xv. Match any four of the following words of column 'A' the meaning in column 'B'**

No.	Column A	Column B
1	Sans	Island
2	Bogey	Dark covering
3	Hebrides	Without
4	Sad	Hateful
5	Abominable	melancholy
6	Pall	fearful

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## SECTION 'C'

### (DETAILED-ANSWER QUESTIONS)

Note: Attempt all the question from this section. All the question carry equal marks.

(40 Marks)

**Q. 3: Convert the following sentences into indirect speech.**

(10)

- He said to her, "Can you help me with this assignment?"
- The notice in the shopping mall says, "Beware of pickpockets."
- He said to me, "I will not attend the party tomorrow as I am not feeling well."
- The spectators said, "How fantastic the skipper plays!"
- She said to me, "When will you return my book?"

**Q. 4: Write down an essay on any one of the given topics below:**

(10)

- An interesting Match of PSL 9, 2024
- Use and abuse of social Media
- Gaza Conflict
- Rising Inflation in Pakistan

**Q. 5: Read the given passage and answer the questions that follow:**

(10)

It is the height of the selfishness of men, who fully appreciate in their own case the advantage of a good education to deny these advantages to women. There is no valid argument by which the exclusion of women from the privileges of education can be defended. It is argued that women have their domestic duties to perform and that if they were educated, they would bury themselves in their books, and have little time for attending to the management of their household. On the contrary, education involves knowledge of the means by which health may be improved, and which enable a mother to consult such modern books that will tell her how to rear up her children into healthy men and women and skillfully help them when a disease attacks her house hold.

- Identify the title of the text and the writer. (2)
- What argument do men put forward to justify their stand? (1)
- What is the attitude of the author regarding the education of women? (1)
- Give the meanings of underlined words. (3)
- Identify the parts of speech of the following words: (3)  
\* Consult      \* Privileges      \* Such

**Q.6 : Write character sketch of "Black Michael" OR "Rudolf Rassandyll"**

(10)

**OR Give critical appreciation of the poem "Line from Endymion".**

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کل نشانات: ۱۰۰

اردو لازمی (سال دوم) آزمائشی امتحان ۲۰۲۳-۲۰۲۳ء

کل وقت: ۳ گھنٹے

حصہ ”الف“ (کثیر الانتخابی سوالات)

- نوٹ: (i) اس حصہ میں ۲۰ جزوی سوالات ہیں۔ تمام سوالات کو جوابات مطلوب ہیں اور ہر سوال کا نشان ایک ہے۔  
(ii) اس حصہ کے درست جوابات کو OMR شیٹ پر دیئے گئے (A) (B) (C) (D) bubbles (1) کو پر کرنا ہے جو جوابات کی کاپی کے ساتھ مہیا کی گئی ہے۔  
(iii) سیاہ یا نیلے بال پوائنٹ پین یا پوائنٹنگ OMR شیٹ کو بھرنے کے لئے استعمال کیجئے۔  
(iv) white-o pen اور پینسل کا استعمال OMR شیٹ پر ممنوع ہے۔
- سوال نمبر ۱: درست جواب کا انتخاب کر کے اپنی جوابی کاپی میں لکھیے:

(۲۰)

۱. سبق ”خوش طبعی“ ان کی تحریر ہے۔  
(A) علامہ شبلی نعمانی (B) سر سید احمد خان (C) سید سلیمان ندوی (D) محمد حسین آزاد
۲. علامہ شبلی نعمانی کا شامل نصاب سبق ہے۔  
(A) عالم گیر کا انصاف (B) چار ماہ دار (C) نئے دور کی لڑکی (D) زمین
۳. اردو کے پہلے فلسفی مورخ ہیں۔  
(A) سر سید احمد خان (B) سید سلیمان ندوی (C) محمد حسین آزاد (D) علامہ شبلی نعمانی
۴. سبق ”لاہور میں ادیبوں کی کالونی“ ان کی تحریر ہے۔  
(A) منیر احمد (B) محمد حسین آزاد (C) مرزا قلیچ بیگ (D) ڈپٹی نذیر احمد
۵. ”ادب آموزوں کے نام“ کا ماخذ ہے۔  
(A) تاج دار (B) حرف و حکایت (C) خطبات احمدیہ (D) دوسرا کنارا
۶. تلاشِ بسیار کے باوجود ہاتھ نہ آسکا۔  
(A) طوطا (B) دوست (C) ابن الوقت (D) البم
۷. اردو شعراء میں انہیں ”خدائے سخن“ کہا جاتا ہے۔  
(A) میر تقی میر (B) مرزا غالب (C) فیض احمد فیض (D) مومن خان مومن
۸. انہیں ”پہلا صوفی شاعر“ کہا جاتا ہے۔  
(A) میر تقی میر (B) فیض احمد فیض (C) میر درد (D) مرزا غالب
۹. حنیف جالندھری کی طویل نظم کا نام ہے۔  
(A) مسدس مد و جزر اسلام (B) شاہنامہ اسلام (C) شان و شوکت اسلام (D) روزنامہ اسلام
۱۰. علامہ اقبال کا پہلا مجموعہ کلام ہے۔  
(A) ار مغان حجاز (B) بال جبریل (C) بانگ درا (D) پیام مشرق
۱۱. ”نظم دو بہرے شناساؤں کی ملاقات“ اس مجموعے سے ماخوذ ہے۔  
(A) فنا بھی ایک سراب (B) دن اور رات (C) مافی الضمیر (D) پیام فیض

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۱۲. شبیر حسن خان کا قلمی نام ہے۔  
(A) مومن خان مومن  
(B) فیض احمد فیض  
(C) مختار کریمی  
(D) جوش ملیح آبادی
۱۳. شاید اور گمان اس شاعر کا مجموعہ کلام ہے:  
(A) میر درد  
(B) نظیر اکبر آبادی  
(C) جوش ملیح آبادی  
(D) جون ایلیا
۱۴. میر تقی میر کے کتنے "نشر" مشہور ہیں:  
(A) اکہتر  
(B) بہتر  
(C) تہتر  
(D) چوہتر
۱۵. "یادیں بھی اب خواب ہوئیں" ان کی تصنیف ہے:  
(A) اعجاز رحمانی  
(B) ناصر کاظمی  
(C) فاطمہ حسن  
(D) جگر مراد آبادی
۱۶. "اشہب زمانہ" میں صنعت پائی جاتی ہے:  
(A) تشبیہ  
(B) تلمیح  
(C) استعارہ  
(D) مبالغہ
۱۷. "نجم الدولہ، نظام جنگ اور دبیر الملک" ان کے خطابات ہیں:  
(A) میر تقی میر  
(B) مرزا غالب  
(C) علامہ اقبال  
(D) میر درد
۱۸. اردو کا پہلا فلسفی شاعر انہیں کہا جاتا ہے:  
(A) میر درد  
(B) مرزا غالب  
(C) میر تقی میر  
(D) علامہ اقبال
۱۹. خجستہ کو داستان سنائی:  
(A) کبوتر نے  
(B) توتے نے  
(C) مینانے  
(D) کوئے نے
۲۰. "ترکِ محبت" ہے:  
(A) مرکبِ اضافی  
(B) مرکبِ عطفی  
(C) مرکبِ توصیفی  
(D) مرکبِ اشاری

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کل نشانات: ۴۰

حصہ ”ب“ (مختصر جواب کے سوالات)

(۱۰)

سوال نمبر ۲: دیئے گئے اشعار میں سے کسی دو اشعار کی تشریح شاعر کے حوالے اور مختصر تعارف کے ساتھ تحریر کیجئے۔

زمین غزل ملک سی ہو گئی  
یہ قطعہ تصرف میں بالکل کیا  
تم میرے پاس ہوتے ہو گویا  
جب کوئی دوسرا نہیں ہوتا  
حضرت ناصح گر آئیں گے، دیدہ و دل فرس راہ  
کوئی مجھ کو یہ تو سمجھا دو کہ سمجھائیں گے کیا؟  
میں ترک رہ و رسم جنوں کر ہی چکا تھا  
کیوں آگئی ایسے میں تری لغزش پا یاد؟  
کیا مجھ کو داغوں نے سروچراغوں  
کبھو تو نے آکر تماشا نہ دیکھا

(۱۰)

سوال نمبر ۳: دیئے گئے اقتباسات میں سے کسی ایک کی تشریح مصنف کے حوالے اور مختصر تعارف کے ساتھ تحریر کیجئے۔

- (۱) اگر دولت مند ہو تو مکے کے تاجر اور بحرین کے خزینہ دار کی تقلید کرو۔ اگر غریب ہو تو شعب ابی طالب کے قیدی اور مدینے کے مہمان کی کیفیت سنو۔ اگر بادشاہ ہو تو سلطان عرب کا حال پڑھو اگر رعایا ہو تو قریش کے محکوم کو ایک نظر دیکھو، اگر فاتح ہو تو بدر و حنین کے سپہ سالار نگاہ دوڑاؤ۔ اگر تم نے شکست کھائی ہے تو معرکہ احد سے عبرت حاصل کرو۔
- (۲) ایسا کم بخت ہے کہ جو ہاتھ اسے رزق دیتا ہے، اسی کو کاٹ کھاتا ہے اور دوست دشمن دونوں کی برابر خاک اڑاتا ہے۔ سب اس کا یہ ہے کہ انسانیت سے خارج ہے۔

- (۳) ہر اچھے آدمی کے گرد ایک ہالہ ہوتا ہے، اس کے نزدیک جائیں تو دل خود بہ خود منور ہو جاتا ہے۔ آج میں روشنی کے اس حلقے میں پہلی بار داخل ہوا، اپنے اندھیرے چھٹتے ہوئے محسوس ہوئے۔ یہ خوشی کے ساتھ تعجب کی بات بھی تھی۔

(۱۰)

سوال نمبر ۴: درج ذیل میں سے کسی ایک نظم کا مرکزی خیال شاعر کے مختصر تعارف کے ساتھ تحریر کیجئے۔

☆ حضرت فاطمہ الزہرا کی رخصتی ☆ چاند اور تارے ☆ بدلی کا چاند

-یا-

دیئے گئے بند کی تشریح شاعر اور نظم کے حوالے کے ساتھ تحریر کیجئے۔

پدر کے گھر سے رخصت ہو کے زہرا اپنے گھر آئیں  
توکل کے خزانے دولت مہرو وفا لائیں  
جہیز اُن کو ملا جو کچھ شہنشاہ دو عالم سے  
ملا ہے درس ہم کو سادگی کا فخر آدم سے

متاعِ دنیوی جو حصہ زہرا میں آئی تھی  
کھجوری کھر درے سے بان کی اک چارپائی تھی

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(۱۰)

سوال نمبر ۵: درج ذیل میں سے کسی ایک سبق کا خلاصہ اور مصنف کا مختصر تعارف تحریر کیجئے۔

☆ سویرے جو کل آنکھ میری کھلی

☆ لاہور میں ادیبوں کی کالونی

☆ سحر ہونے تک

-یا-

مندرجہ ذیل مشقی سوالات میں سے کسی پانچ کے مختصر جوابات تحریر کیجئے:

۱. حضرت فاطمہ کی زندگی سے ہمیں کیا سبق ملتا ہے؟
۲. عدی بن حاتم نے کیسے اسلام قبول کیا؟ واقعہ بیان کیجئے۔
۳. اچھے حکمران کے لیے منصف ہونا کیوں ضروری ہے؟
۴. اورنگ زیب عالم گیر کا سب سے بڑا کارنامہ بیان کیجئے؟
۵. زینت کے لیے بختاور نے کس کس گھر سے رشتہ آنے کا خیال ظاہر کیا؟
۶. سیٹیاں تو آنگن کی چڑیاں ہوتی ہیں، اس مثل میں زینت کے لیے کیا اشارہ ہے؟
۷. جو لوگ دوستوں کی بات نہیں مانتے، ان کا انجام کیا ہوتا ہے؟
۸. خدا کی محبت اور پیار کا مستحق بننے کے لئے ہر مذہب نے کیا تدبیر بتائی ہے؟

کل نشانات: ۴۰

حصہ ”ج“ (بیانیہ جواب کے سوالات)

(۲۰)

سوال نمبر ۶: مندرجہ ذیل میں سے کسی ایک شاعر کے کلام کی خصوصیات تحریر کیجئے:

☆ میر تقی میر ~ ☆ میر درد ~ ☆ مرزا اسد اللہ خان غالب ~

(۲۰)

سوال نمبر ۷: مندرجہ ذیل میں سے کسی ایک نثر نگار کے طرزِ تحریر کی خصوصیات تحریر کیجئے۔

☆ سید سلیمان ندوی ☆ علامہ شبلی نعمانی ☆ رشید احمد صدیقی

-یا-

مندرجہ ذیل میں سے کسی ایک عنوان پر مضمون لکھیے۔

☆ امن عالم اور احترامِ انسانیت

☆ حصولِ رزقِ حلال عینِ عبادت ہے

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-234

### PAKISTAN STUDIES PAPER-HSC PART-II (SCIENCE GROUP)

According to the syllabus of the Board of Intermediate Education, Karachi



Total Time: 2 Hours

Time: 10 Minutes

Total Marks: 50

Marks: 10

#### SECTION 'A'

#### (MULTIPLE CHOICE QUESTIONS)

- NOTE:**
- This section consists of 10 part questions and all are to be answered. Each question carries 1 mark.
  - The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.
  - Use only blue / black ballpoint pen or pointer on OMR sheet.
  - Avoid using pencil / white-o pen on OMR sheet.

**Q. 1: Choose the correct answer for each from the given options:**

- The chairman of boundary line commission was:**  
(A) Lord Mountbatten (B) Lord Wavell (C) Radcliff (D) Stafford Cripps
- The second name of Godwin Austins is**  
(A) K-2 (B) Mount Everest (C) Nanga Parbat (D) Koh-e-Suffaid
- Indus Basin Treaty was signed in:**  
(A) 1920 (B) 1940 (C) 1960 (D) 1970
- Mosque Wazir Khan is at:**  
(A) Lahore (B) Peshawar (C) Quetta (D) Karachi
- The common boundary between Pakistan and Afghanistan is called;**  
(A) Border Line (B) Safe Line (C) Control Line (D) Durand Line
- The constitutional name of Pakistan is:**  
(A) Islamic State (B) Democratic State (C) Peoples Republic (D) Islamic Republic of Pakistan
- The total area of Pakistan is:**  
(A) 796096 sq.km. (B) 796097 sq. km. (C) 796098 sq.km. (D) 796099 sq.km
- The headquarters of UNO is situated in:**  
(A) United Kingdom (B) Washington (C) New York (D) Toronto
- Sachal Sarmast was a famous poet of language**  
(A) Punjabi (B) Sindhi (C) Balochi (D) Pushto
- The second World War broke out in:**  
(A) 1936 (B) 1937 (C) 1938 (D) 1939

Time: 1 Hour 50 minutes

#### SECTION 'B'

(40 Marks)

#### (SHORT-ANSWER QUESTIONS)

**Note: Attempt any five (05) part questions from this section.**

(20)

- What is meant by Two Nation Theory?
- Describe the Aligarh Movement.
- Describe any **four** points from Fourteen Points of Quaid-e-Azam Muhammad Ali Jinnah.
- Describe the Lucknow pact 1916.
- Describe the importance of The Indus Basin Treaty.  
**OR** Describe the aims and objectives of Muslim League.
- Describe the term Foreign Policy and basic goals of Pakistan's Foreign policy.
- Describe salient features of Pakistan's Culture.  
**OR** Describe the Islamic Provisions in 1973 Constitution.
- Differentiate between Rural and Urban Society.
- Describe the regional languages of Pakistan. (Any 1).  
**OR** Describe the natural resources of Pakistan. (Any 2)..

#### SECTION 'C'

#### (DETAILED-ANSWER QUESTIONS)

**Note: Attempt any Two (02) question from this section.**

(20)

- Describe the initial problems faced by Pakistan after establishment.  
**OR** Describe the role of Urdu for National integration.
- Describe the geo-political importance of the location of Pakistan  
**OR** Describe the important political events from 1940- 1947
- Describe the basic principles of Foreign policy of Pakistan  
**OR** Define aims and objectives of establishment of Pakistan

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-234

PAKISTAN STUDIES PAPER-HSC PART-II (SCIENCE GROUP)

According to the syllabus of the Board of Intermediate Education, Karachi



کل نشانات: ۵۰

وقت: ۲ گھنٹے

کل نشانات: ۱۰

### حصہ "الف" (کثیر الامتخانی سوالات)

وقت: ۱۰ منٹ

- نوٹ: (i) اس حصہ میں ۱۰ جزوی سوالات ہیں۔ تمام سوالات کو جوابات مطلوب ہیں اور ہر سوال کا نشان ایک ہے۔  
(ii) اس حصہ کے درست جوابات کو OMR شیٹ پر دیئے گئے bubbles (A) (B) (C) (D) کو پر کرنا ہے جو جوابات کی کاپی کے ساتھ مہیا کی گئی ہے۔  
(iii) سیاہ یا نیلے بال پوائنٹ پین یا پوائنٹنگ OMR شیٹ کو بھرنے کے لئے استعمال کیجیے۔  
(iv) white-o pen اور پینسل کا استعمال OMR شیٹ پر ممنوع ہے۔  
سوال نمبر (۱): مندرجہ ذیل میں سے ہر ایک کیلئے درست جواب منتخب کیجئے۔

۱. حد بندی کمیشن کے سربراہ کا نام ہے۔ (A) لارڈ ماؤنٹ بیٹن (B) لارڈ ڈیول (C) ریڈ کلف (D) سر اسٹورڈ کرپس
۲. گاڈون اسٹن کا دوسرا نام ہے۔ (A) کے۔ ٹو (B) ماؤنٹ ایورسٹ (C) نائنگا پربت (D) کوہ سفید
۳. سندھ طاس معاہدہ اس سن میں ہوا۔ (A) ۱۹۲۰ (B) ۱۹۳۰ (C) ۱۹۶۰ (D) ۱۹۷۰
۴. مسجد وزیر خان یہاں واقع ہے۔ (A) لاہور (B) پشاور (C) کوئٹہ (D) کراچی
۵. پاکستان اور افغانستان کی مشترکہ سرحد کہلاتی ہے۔ (A) بارڈر لائن (B) محفوظ لائن (C) کنٹرول لائن (D) ڈیورنڈ لائن
۶. پاکستان کا آئینی نام ہے۔ (A) اسلامی ریاست (B) اسلامی جمہوریہ پاکستان (C) فلاحی ریاست (D) عوامی جمہوریہ
۷. پاکستان کا کل رقبہ مربع کلومیٹر میں یہ ہے۔ (A) ۷۹۶۰۹۶ (B) ۷۹۶۰۹۷ (C) ۷۹۶۰۹۸ (D) ۷۹۶۰۹۹
۸. اقوام متحدہ کا صدر دفتر یہاں واقع ہے۔ (A) ریاست ہائے متحدہ (B) واشنگٹن (C) نیویارک (D) ٹورنٹو
۹. سچل سرمست اس زبان کے مشہور شاعر ہیں۔ (A) پنجابی (B) سندھی (C) بلوچی (D) پشتو
۱۰. دوسری جنگ عظیم اس سن میں شروع ہوئی۔ (A) ۱۹۳۶ (B) ۱۹۳۷ (C) ۱۹۳۸ (D) ۱۹۳۹

کل نشانات: ۳۰

وقت: ۱ گھنٹہ ۵۰ منٹ

### حصہ 'ب' (مختصر جواب کے سوالات)

(۲۰)

نوٹ: مندرجہ ذیل میں سے کسی پانچ جزوی سوالات کے جوابات تحریر کیجئے۔

- سوال نمبر ۲: دو قومی نظریے سے کیا مراد ہے۔
- سوال نمبر ۳: تحریک خلافت سے کیا مراد ہے۔
- سوال نمبر ۴: قائد اعظم محمد علی جناح کے ۱۴ نکات میں سے کوئی چار نکات تحریر کیجئے۔
- سوال نمبر ۵: معاہدہ لکھنؤ سے کیا مراد ہے تحریر کیجئے۔
- سوال نمبر ۶: سندھ طاس معاہدے کی اہمیت تحریر کیجئے یا مسلم لیگ کے اغراض و مقاصد تحریر کیجئے
- سوال نمبر ۷: خارجہ پالیسی سے کیا مراد ہے؟ پاکستان کی خارجہ پالیسی کے بنیادی اہداف بیان کریں۔
- سوال نمبر ۸: پاکستانی ثقافت کے نمایاں خدو خال تحریر کیجئے۔ یا ۱۹۷۳ کے آئین کی اسلامی دفعات تحریر کیجئے۔
- سوال نمبر ۹: شہری اور دیہی زندگی کا فرق بیان کیجئے۔
- سوال نمبر ۱۰: پاکستان کی کوئی ایک علاقائی زبان بیان کیجئے۔ یا پاکستان کے کوئی دو قدرتی معدنیات تحریر کیجئے۔

### حصہ 'ج' (تفصیلی جواب کے سوالات)

(۲۰)

نوٹ: اس حصہ سے کسی دو سوالوں کے جوابات تحریر کیجئے۔

- سوال نمبر ۱۱: پاکستان بننے کے بعد کے ابتدائی مسائل تحریر کیجئے۔ یا قومی یکجہتی میں اردو زبان کا کردار تحریر کیجئے۔
- سوال نمبر ۱۲: پاکستان کے جغرافیائی محل وقوع کی اہمیت بیان کیجئے۔ یا ۱۹۴۰ سے ۱۹۴۷ تک کے اہم سیاسی واقعات تحریر کیجئے۔
- سوال نمبر ۱۳: پاکستان کی خارجہ پالیسی کے بنیادی اصول تحریر کیجئے۔ یا پاکستان کی تشکیل کے اغراض و مقاصد تحریر کیجئے۔

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### PHYSICS PAPER-H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)

According to the syllabus of the Intermediate Board of Education, Karachi



Time allowed: 20 Minutes

#### SECTION 'A'

Max. Marks: 17

#### (MULTIPLE CHOICE QUESTIONS)

- NOTE:**
- This section consists of 17 part questions and all are to be answered. Each question carries 1 mark.
  - The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.
  - Use only blue / black ballpoint pen or pointer on OMR sheet.
  - Avoid using pencil / white-o pen on OMR sheet.

**Q. 1: Choose the correct answer for each from the given options:**

**i. A thermostat is a device which is used:**

- (A) To keep the heat flow constant (B) To isolate the system from surroundings  
(C) In all heating appliances (D) To keep the temperature constant

**ii. If the quantity of charge on each of two bodies is doubled the coulomb's force becomes**

- (A) Sixteen times (B) Twice (C) Four times (D) Half

**iii. An AVO meter is used to measure**

- (A) Voltage (B) Current (C) Resistance (D) All of three

**iv. A wire of length L and resistance R is cut into four equal pieces. Resistance of each piece would be.**

- (A) R (B) R/4 (C) 2R (D) 4R

**v. In the nuclear reaction  ${}_7\text{N}^{14} + {}_2\text{He}^4 \longrightarrow {}_8\text{O}^{17} + \text{_____}$  the missing particle is:**

- (A) Proton (B) Neutron (C) Electron (D)  $\alpha$  - particle

**vi. The experiment evidence of Einstein's mass energy equation is:**

- (A) Photoelectric effect (B) Elastic Collision  
(C) Pair production and annihilation of matter (D) Radioactive emission

**vii. Approximate efficiency of a heat engine operating between the temperatures  $47^\circ\text{C}$  to  $127^\circ\text{C}$**

- (A) 23% (B) 50% (C) 20% (D) 75%

**viii. The process of separation of  ${}_{92}\text{U}^{235}$  from natural uranium is called \_\_\_\_\_.**

- (A) Enrichment (B) Separation (C) Annihilation (D) Fusion

**ix. In treating a localized cancerous tumor a narrow beam of:**

- (A) Alpha rays from Cobalt (B) Beta rays from Cobalt  
(C) Gamma rays from Cobalt (D) Laser from Cobalt

**x. When the PN junction is forward biased, the width of the depletion region**

- (A) Increases (B) Decreases (C) Remains the same (D) None of these

**xi. Which of the following are not electromagnetic waves**

- (A) Light waves (B) X-rays (C) Heat waves (D) Sound waves

**xii. The electric flux through a closed surface depends on the \_\_\_\_.**

- (A) Magnitude of the charge enclosed by the surface (B) Position of the charge enclosed by the surface  
(C) The shape of the surface (D) None of the above

**xiii. The function of concave pole pieces and soft iron cylinder in a galvanometer is to:**

- (A) Increase sensitivity (B) Make scale non-linear  
(C) Make the magnetic field radial and strong (D) Produce damping

**xiv. The electric potential is zero \_\_\_\_.**

- (A) Midway between equal charges of the same sign (B) Midway between any two charges of the opposite sign  
(C) Inside a conductor (D) None of these

**xv. An accelerating charge produced:**

- (A) Electric field only (B) Magnetic field only  
(C) Electromagnetic waves only (D) All of these

**xvi. Real gas molecules do not strictly obey gas laws at:**

- (A) High pressure and low temperature (B) Low pressure and high temperature  
(C) High pressure and high temperature (D) Low pressure and low temperature

**xvii. Linear and angular momentum of electron of hydrogen atom is linked by:**

- (A) Plank's Constant (B) Quantum number of state  
(C) Energy of state (D) Orbital radius

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### PHYSICS PAPER-H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)

According to the syllabus of the Intermediate Board of Education, Karachi



Time allowed: 2 hour 40 Minutes

SECTION 'B'

Max. Marks: 68

### (SHORT-ANSWER QUESTIONS)

$K = 9 \times 10^9 \text{ Nm}^2/\text{C}^2$	$e = 1.6 \times 10^{-19} \text{ C}$	$R_H = 1.097 \times 10^7 \text{ m}^{-1}$	$\epsilon_0 = 8.85 \times 10^{-12} \text{ C}^2/\text{N.m}^2$
$\mu_0 = 4\pi \times 10^{-7} \text{ Web/Amp.m}$	$me = 9.11 \times 10^{-31} \text{ kg}$	$G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$	$h = 6.625 \times 10^{-23} \text{ J.s}$

### GENERAL INSTRUCTION:

**Section 'B':** It consists of 14 Short answer questions of which 09 questions are to be answered.

**Section 'C':** It consists of 3 Descriptive answer questions of which 2 questions are to be answered.

The use of scientific calculator is allowed. All notations are used in their usual meaning. Draw diagram where necessary.

**NOTE:** Attempt any NINE questions. All questions carry equal marks. Draw diagram where necessary. (36 Marks)

**Q. No. 02:**

i. Give scientific reason of any **ONE** of the following:

- (a) A thermometer is placed in direct sunlight. Will it read the temperature of the air or for the sun or of something else?
- (b) An air capacitor is charged to a certain potential difference. It is then immersed in oil. What happens to its  
(a) charge (b) potential and capacitance?
- (c) Why does the resistance of a conductor rise with the rise in temperature?

ii. State Boyle's Law & Charles's Law. Derive General Gas Equation

**OR** Explain Uncertainty Principle. Derive a relation for it and also explain the process of pair production briefly?

**OR** Define rectification and explain the process of full wave rectification

iii. The inner and outer diameter of toroid are 22cm and 26cm. if the current of 5amp is passed which produces 0.025T flux density inside the core, find the approximate length of wire wound on toroid ( $\mu_0 = 4\pi \times 10^{-7} \text{ Wb/Am}$ )

**OR** A certain solenoid 0.5m long iron and 40cm<sup>2</sup> area of cross section has 1000 turns per unit length. What is its self-induction?

iv. Prove the following relation.(any one)

(i)  $\beta = 3\alpha$

(ii)  $\Delta V = \vec{E} \cdot \vec{\Delta r}$

**OR** Prove mathematically that radius of the circular path for a charge in magnetic field is  $r = \frac{mv \sin \theta}{qB}$

v. Extract an expression for the force acting on a current-carrying conductor held in a UNIFORM MAGNETIC FIELD.

**OR** Give the two postulates of Special Theory of Relativity and discuss any two of results obtained

vi. Sodium surface is shined with the light of wavelength  $3 \times 10^{-7} \text{ m}$ . If the work function of sodium is 2.46 eV, find the kinetic energy of the photoelectron. ( $c = 3 \times 10^8 \text{ m/s}$ ,  $h = 6.63 \times 10^{-34} \text{ J.s}$ )

**OR** The resistance of tungsten wire used in the filament of 60 watt is 240Ω when the bulb is hot at temperature of 2020°C. What resistance would you estimate when the bulb is at 20°C? (temperature coefficient of tungsten is  $0.0046^\circ\text{C}^{-1}$ )

vii. A small sphere of weight  $5 \times 10^{-3} \text{ N}$  is suspended by silk thread which attached to a point on large insulating plane when charge of  $6 \times 10^{-8} \text{ C}$  is placed on the ball, thread makes an angle of 30° with vertical find the charge density on the plane.

**OR** A proton of mass  $1.67 \times 10^{-27} \text{ kg}$  and charge  $1.6 \times 10^{-19} \text{ C}$  is accelerated by potential difference of  $6 \times 10^5 \text{ volts}$ , it then enters in to the uniform magnetic field of 0.2T in a direction making angle of 45° find the radius of the path described by proton.

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### PHYSICS PAPER-H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)

According to the syllabus of the Intermediate Board of Education, Karachi



- viii. A step down transformer at the end of transmission line reduces voltage from 1100V to 220V. The power output is 9.0KW and the overall efficiency of transformer is 90%. The primary winding has 400turns how many turns does the secondary winding have? What is the power input? What is the current in each of the coil?
- OR What will be the De Broglie's wave length associated with  $m = 1 \times 10^{-2} \text{kg}$  moving with velocity of  $10^3 \text{ m/s}$ ?
- ix. Calculate the density of hydrogen gas considering it to be an ideal gas when the root mean square velocity of hydrogen gas molecule is 1840m/s at S.T.P.
- OR A Carnot engine whose low temperature reservoir is 200K has a efficiency of 50% it is desired to increase this to 75% by how many degrees should the temperature of low temperature reservoir be decreases if the high temperature reservoir remains at constant temperature?
- x. Define half-life. State the Law of Radioactive Decay and also derive the equation for half life.
- OR Define fission reaction and explain the process of fission chain reaction.
- xi. Pair annihilation occurred due to a head-on-collision of an electron and a positron having a same kinetic energy producing pair of photons each having energy of 2.5 MeV. What were their kinetic energies before collision? (Given:  $m_0c^2 = 0.511 \text{ MeV}$ ).
- OR Given  $m_0c^2 = 0.511 \text{ MeV}$ . Find the total energy E and the kinetic energy of an electron moving with a speed of  $v = 0.85c$
- xii. In the hydrogen atom an electron experienced a transition from state whose binding energy is -0.85eV to another state whose excitation energy is 10.2eV. Find the quantum number of these two states and calculate the wavelength of emitted radiation.
- OR The half-life of  $^{104}\text{Po}^{210}$  is 120 days. By what percent does its activity decreases per month?
- xiii. Two capacitors of  $2 \mu\text{F}$  and  $8 \mu\text{F}$  capacitance are connected in series and a potential difference of 200V is applied. Find the charge and the potential difference for each capacitor
- OR A capacitor of  $100 \mu\text{F}$  is charged by potential difference of 50volts. Its plates are then connected in parallel combination to another capacitor and it is found that potential between its plates falls to 35volts, find the capacitance of the second capacitor?
- xiv. A galvanometer of resistance  $50 \Omega$  gives full scale deflection with current of 10mA. A shunt of  $0.05 \Omega$  is connected in parallel to convert it into Ammeter, find the range of Ammeter.
- OR A maximum 50mA current can be allowed to flow through a 19.8 ohm coil of a galvanometer. The galvanometer is to be used to measure 5A maximum current. Calculate the length of copper wire to be used as a shunt, the diameter of the wire is 4 mm. (The specific resistance of copper ( $\rho$ ) is  $1.6 \times 10^{-8} \Omega\text{-m}$ ).

### SECTION 'C'

#### (DETAILED-ANSWER QUESTIONS)

Note: Attempt any two questions. All questions carry equal marks. Draw diagram where necessary. Marks: 32

Q. No. 03:

- (a) Derive the relation for the pressure of an ideal gas in terms of its density and mean square velocity.
- OR What is a Carnot engine? Describe its working cycle. Prove that the efficiency of a Carnot engine is less than 100 % above absolute temperature of the sink?
- (b) State the law which governs the potential difference across the conductor and the current passing through it. How is the resistance of the conductor related to its dimensions? Derive the formula for the parallel combination of resistance?
- OR Determine the method for ratio charge to mass ( $e/m$ ) of an electron. Derive relevant mathematical expressions?

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**PHYSICS PAPER-H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)**

According to the syllabus of the Intermediate Board of Education, Karachi



## Q. No. 04:

(a) State Gauss's Law. Write down its application to find out electric field intensity of charged sphere at a point outside the charged surface.

**OR** State and explain the law which governs the determination of magnetic field of different geometrical shaped conductors? How it can be apply to determine the flux density of uniform length cylindrical shape conductor.

(b) State Faraday's Law of Electromagnetic Induction. Define and explain mutual Induction and derive an expression for the mutual Inductance along with its unit.

**OR** Upon colliding with a stationary electron, a high energy photon transfers some of its energy and gets scattered. Explain this phenomenon and derive a relation for the shift in the wavelength of the scattered photon.

**OR** Prove that the difference of two molar specific heats of a gas is equal to the universal gas constant

## Q. No. 05:

(a) State the basic postulates of Bohr's Atomic Theory of Hydrogen Atom. Derive an Expression for the radius of the nth orbit of Hydrogen Atom. Hence, evaluate that the radii are in the ratio of 1:4:9:16....

**OR** Explain the working of the Moving Coil Galvanometer and prove that the amount of current flowing is directly proportional to the angle of twist of the suspension.

(b) Draw a labelled diagram of A.C. Generator and give its construction and working and derive the expression for A.C. voltage produced?

**OR** Discuss the construction, working of any one of the following:

(i) Wilson Cloud Chamber

(ii) Ruby Laser

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# ANEES HUSSAIN COACHING CLASSES

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## COMPREHENSIVE EXAMINATION 2023-24 CHEMISTRY H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)

According to the syllabus of the Board of Intermediate Education, Karachi



Time allowed: 20 Minutes

### SECTION 'A'

Max. Marks: 17

#### (MULTIPLE CHOICE QUESTIONS)

- NOTE:** i) This section consists of 17 part questions and all are to be answered. Each question carries 1 mark.  
ii) The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.  
iii) Use only blue / black ballpoint pen or pointer on OMR sheet.  
iv) Avoid using pencil / white-o pen on OMR sheet.

**Q. 1: Choose the correct answer for each from the given options:**

- i. A is the element of III-A while B belongs to V-A group. When A reacts with B they form  
(A) AB (B) AB<sub>2</sub> (C) A<sub>3</sub>B<sub>2</sub> (D) A<sub>2</sub>B<sub>3</sub>
- ii. Li has many similarities to its diagonal neighbour in Be family. The elements is?  
(A) K (B) Mg (C) Ca (D) Na
- iii. The co-ordination number of cobalt in Na<sub>4</sub>[Co(C<sub>2</sub>O<sub>4</sub>)<sub>3</sub>]  
(A) 3 (B) 4 (C) 6 (D) 7
- iv. An example of bidentate ligand among the following is  
(A) OH<sup>-</sup> (B) C<sub>2</sub>O<sub>4</sub><sup>-2</sup> (C) Cl<sup>-</sup> (D) CN<sup>-</sup>
- v. The functional group present in cresol is:  
(A) Phenolic, -OH (B) Carboxylic, -COOH (C) Alcoholic, -OH (D) Aldehydic, -CHO
- vi. The formula of Caproic acid is:  
(A) CH<sub>3</sub>.(CH<sub>2</sub>)<sub>2</sub>.COOH (C) CH<sub>3</sub>.CH<sub>2</sub>.COOH  
(B) CH<sub>3</sub>.(CH<sub>2</sub>)<sub>3</sub>.COOH (D) CH<sub>3</sub>.(CH<sub>2</sub>)<sub>4</sub>.COOH
- vii. The number of five membered and six membered rings in C<sub>60</sub>bucky ball are respectively  
(A) 12 & 12 (B) 40 & 20 (C) 12 & 20 (D) 5 & 15
- viii. The general formula of alcohol is  
(A) C<sub>n</sub>H<sub>2n</sub> (B) C<sub>n</sub>H<sub>2n+1</sub>OH (C) C<sub>n</sub>H<sub>2n-1</sub>OH (D) C<sub>n</sub>H<sub>2n+2</sub>
- ix. The chlorination of methane (CH<sub>4</sub>) is an example of:  
(A) Addition reaction (B) Substitution reaction  
(C) Elimination reaction (D) Oxidation reaction
- x. Ozonide on heating with zinc dust produce  
(A) Alcohol (B) Alkene (C) Aldehyde (D) Ether
- xi. Grignard's reagent reacts with ketone to give:  
(A) 1<sup>o</sup> -alcohol (B) 2<sup>o</sup> -alcohol (C) 3<sup>o</sup> -alcohol (D) Phenol
- xii. Which of the following is anaesthetic agent  
(A) Phenol (B) Ethyl alcohol (C) Diethyl ether (D) Acetone
- xiii. Alkyl amine when reacts with nitrous acid in the presence of hydrochloric acid, yields  
(A) Alcohol (B) Diazonium salt (C) Aldehyde (D) Ketone
- xiv. Clemmensen reduction is the conversion of aldehydes and ketones into  
(A) Alkanes (B) Alkenes (C) Alkyl halides (D) Alcohols
- xv. Which of the following gives silver test with Tollen's reagent?  
(A) HCHO (B) C<sub>2</sub>H<sub>5</sub>OH (C) CH<sub>3</sub>-O-CH<sub>3</sub> (D) CH<sub>3</sub>COOH
- xvi. This is animal starch:  
(A) Glycogen (B) Amylose (C) Cellulose (D) Amino acid
- xvii. The region of sphere which extend from 11 km to 50 km from our Earth is known as  
(A) Troposphere (B) Stratosphere (C) Mesosphere (D) Thermosphere

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# ANEES HUSSAIN COACHING CLASSES

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## COMPREHENSIVE EXAMINATION 2023-24 CHEMISTRY H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)

According to the syllabus of the Board of Intermediate Education, Karachi



Time allowed: 2 hours 40 Minutes

SECTION 'B'

Max. Marks: 68

### (SHORT-ANSWER QUESTIONS)

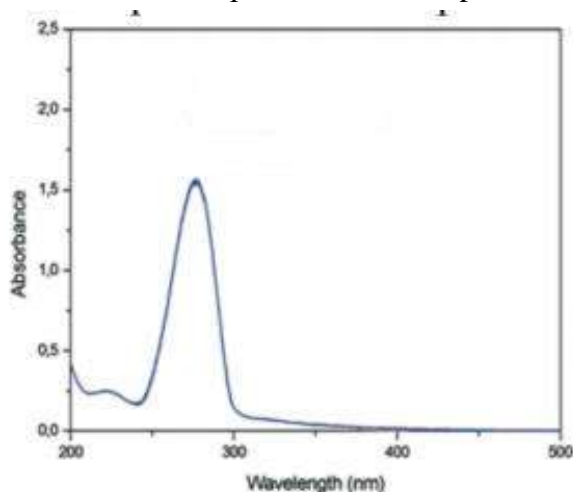
**NOTE:** Answer any **Nine** part questions. Select **Four** part questions from **Inorganic – General Chemistry** and **Five** part questions from **Organic Chemistry**. All questions carry equal marks.

Q. No. 2

(36 marks)

### INORGANIC – GENERAL CHEMISTRY

- i. What is meant by a diagonal relationship? Mention three pairs of representative elements that show diagonal relationship.
- OR** Give reasons for any four of the following:
- \* Ionization energy decreases from top to bottom in s-block elements?
  - \* Electronegativity decreases regularly from top to bottom in s-block elements?
  - \* Acidity of hydrogen halides increase from HF to HI?
  - \* Why  $\text{Cu}^{+2}$  ion is blue but  $\text{Zn}^{+2}$  is colourless?
  - \* Multidentate ligands are known as chelating agents.
- ii. Explain the following properties of transition elements. (any two)
- \* Catalytic property
  - \* Paramagnetic property
  - \* Variable oxidation state
  - \* Colour formation
- iii. Explain various types of ligands with examples.
- iv. Write down the IUPAC names of the following complexes.
- \*  $\text{Na}_2[\text{Pt}(\text{OH})_4]$
  - \*  $\text{K}_2[\text{Fe}(\text{CN})_5\text{NO}]$
  - \*  $[\text{Zn}(\text{NH}_3)_4]^{+2}$
  - \*  $[\text{Ni}(\text{SCN})_4]^{-2}$
- v. How can you define Cosmetics? Describe four cosmetics which are commonly used.
- OR** What are Pesticides? Write the name of three types of pesticides along with their specific use.
- vi. What is a catalytic converter? What are the main pollution targeted by catalytic converter?
- vii. Explain  $\lambda_{\text{max}}$  with the help of U.V-visible spectrum of ethanol



Spectrum of ethanol

### “ORGANIC CHEMISTRY”

- viii. Describe homologous series of organic compounds? Write three main properties of homologous series.
- OR** How is coal produced under the earth crust? Write the name of four types of coal and mention the %age of carbon content in them.

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## COMPREHENSIVE EXAMINATION 2023-24 CHEMISTRY H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)

According to the syllabus of the Board of Intermediate Education, Karachi



- ix. Draw the orbital structures of the following (any two):  
(i) Ethyne (ii) Methyl chloride (iii) Benzene (iv) Formaldehyde  
**OR** Give the equations and write the name of final product in the following process.  
\* Ethene is burnt in air in the presence of per acetic acid.  
\* 1, 2-dibromoethane is heated with alcoholic KOH  
\* Ethene is heated at high temperature  
\* Ethyne is treated with  $H_2O$  in the presence of  $H_2SO_4/HgSO_4$
- x. Write the IUPAC name of the following organic compounds.  
\*  $CH_2=CH-C\equiv C-CH=CH_2$  \*  $(CH_3)_2CBrCHO$   
\*  $CH_3-CH_2-OC(CH_3)_2C_2H_5$  \*  $CH_3-CH=CH-CH_2-COOH$
- xi. Give the mechanism of following Electrophilic substitution reaction of benzene.  
(a) Acylation (b) Nitration  
**OR** What is meant by stereo isomerism? Define optical isomerism
- xii. What are organometallic compound? Write the equation of its reaction with  
\*  $CH_3CHO$  \*  $CO_2$  \*  $CH_3NH_2$   
**OR** Define Lipids and explain the following chemical behavior of fat and oil.  
\* Saponification \* Rancidity
- xiii. Write the equations for the following possible conversions.  
(i) Ethyl alcohol to diethyl ether (ii) Phenol to benzoquinone  
(iii) Ethyl bromide to ethanol (iv) 2°- alcohol to carboxylic acid  
**OR** What is ozonolysis of alkenes and what are the main types of products that can be obtained from this reaction?
- xiv. Describe how aldehydes are distinguished from ketones by the following laboratory test.  
(i) Tollen's reagents (ii) Fehling solution  
**OR** Name four derivative of carboxylic acid and write the equations of their preparation.

### SECTION 'C'

#### (DETAILED-ANSWER QUESTIONS)

(32 marks)

**Note:** Attempt any **Two** questions — **One** question from **Inorganic - General Chemistry** and the other from **Organic Chemistry**. Both questions carry equal marks.

#### (INORGANIC – GENERAL CHEMISTRY)

- Q3 (a)** With the help of a flow sheet diagram describe the manufacture of  $H_2SO_4$  by contact process. Show with the help of equation that  
\*  $H_2SO_4$  is a dehydrating agent \*  $H_2SO_4$  is an oxidizing agent  
**OR** Explain with the help of a diagram of Castner Kellner cell, how caustic soda is obtained by the electrolysis of aqueous sodium chloride? Write equation  
\*  $NaOH$  reacts with  $FeCl_3$  \*  $NaOH$  reacts with zinc
- (b)** Write the balance chemical equations for the following processes.  
\* Reaction of Sodium with water.  
\* Phosphorus is put into water  
\* Bleaching powder is treated with hydrochloric acid  
\* Chlorine gas is pass through hot aqueous solution of caustic soda  
\* Copper is treated with concentration nitric acid  
\* A piece of chromium is put into dilute hydrochloric acid  
\* Reaction between  $KMnO_4$  and  $FeSO_4$  (write ionic equation)  
\* Reaction between  $K_2Cr_2O_7$  and  $FeSO_4$  (write ionic equation)

NORTH NAZIMABAD CAMPUS I	NORTH NAZIMABAD CAMPUS II	GULSHAN	NORTH KARACHI	BAHADURABAD	GULISTAN-E-JOHAR
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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24 CHEMISTRY H.S.C. PART-II (PRE-ENGINEERING & MEDICAL)

According to the syllabus of the Board of Intermediate Education, Karachi



- Q.4 (a)** Discuss the group trend of atomic radii, ionization energy and electronegativity of alkali metals.  
**OR** Describe various steps involve in the extraction of 99.99% pure copper from its chalcopyrite ore.  
**(b)** What is acid rain? Explain the primary causes of acid rain and its environmental impacts.

### (ORGANIC CHEMISTRY)

- Q5 (a)** What is meant by orientation of benzene? Explain orthopara and meta directing group. Write the equation for the preparation of m-nitrobenzoic acid and m-nitro toluene from benzene.

- (b)** Draw the structure of the following organic molecules:

- |                            |  |
|----------------------------|--|
| (i) Ethyl neo-pentyl ether | (v) 1-Bromo-3-methyl hexane-2-one              |
| (ii) Resorcinol            | (vi) $\alpha$ , $\beta$ -dimethyl butyric acid |
| (iii) Picric acid          | (vii) Butyraldehyde                            |
| (iv) Isopropylbutanoate    | (viii) 3-Chlorobenzamide                       |

- Q6 (a)** What is meant by nucleophile? Give the mechanism of

\*  $S_N1$  reaction between 2-bromo -2-methyl propane and NaOH

\*  $S_N2$  reactions between chloroethane and NaCN

**OR** What are Carbohydrates? Classify them on the basis of structure and give their biological significance.

- (b)** Write the equation for the following reactions.

\* Dehydration of ethyl alcohol at  $170^\circ\text{C}$  in conc.  $\text{H}_2\text{SO}_4$

\* Reaction of ethylene glycol with periodic acid.

\* Reduction of acetic acid with  $\text{LiAlH}_4$ .

\* Oxidation of  $1^\circ$ -alcohol with PCC.

\* Hydration of propyne with  $\text{H}_2\text{SO}_4/\text{HgSO}_4$ .

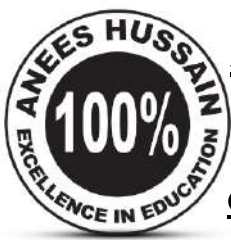
\* Reaction of phenol with  $\text{H}_2\text{SO}_4$  at  $20^\circ\text{C}$ .

\* Reduction of acetaldehyde with  $\text{Zn(Hg)}$  amalgam

\* Reaction of acetic acid with ammonia

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

**COMPREHENSIVE EXAMINATION 2023-2024**

**COMPUTER STUDIES PAPER-HSC PART-II (SCIENCE GROUP)**

According to the syllabus of the Intermediate Board of Education, Karachi



TIME: 15 MINUTES

**SECTION 'A'**  
**(MULTIPLE CHOICE QUESTIONS)**

MAX. MARKS: 15

- NOTE:**
- This section consists of 15 part questions and all are to be answered. Each question carries 1 mark.
  - The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.
  - Use only blue / black ballpoint pen or pointer on OMR sheet.
  - Avoid using pencil / white-o pen on OMR sheet.

**Q. 1: Choose the correct answer for each from the given options:**

- Which view do you use to enter data into a table?**  
(A) datasheet view (B) table design view (C) database location view (D) database design view
- It is like an outline or summery form of the program:**  
(A) Flowchart (B) psuodocode (C) algorithm (D) coding
- Which of the following symbol is used to show operation of data ?**  
(A) Diamond (B) rectangle (C) terminal (D) circle
- What does BCPL stand for?**  
(A) Basic Cobol Programming Language (B) Basic Combined Protocol language  
(C) Basic Combined Programming language (D) Basic Combined Procedure Language
- Which of the following is a valid declaration of integer data ?**  
(A) integer a; (B) INT a; (C) int a; (D) int a;
- Which of the following is not a reserved word of C language?**  
(A) Auto (B) for (C) float (D) none of these
- Customers, cars and parts are examples of:**  
(A) Entities (B) attributes (C) cardinals (D) relationship
- Preprocessor directives are commands for:**  
(A) Microprocessor (B) language processor (C) c preprocessor (D) loader
- void occupy how many bytes in memory :**  
(A) Zero (B) one (C) two (D) four
- Function prototypes for built-in functions are specified in:**  
(A) source file (B) object files (C) header files (D) image files
- The set of statement in curly braces in a loop is known as :**  
(A) Title of the loop (B) header of the loop (C) center of the loop (D) body of the loop
- The logical NOT operator denoted by “ ! “ is a :**  
(A) Ternary operator (B) unary operator (C) binary operator (D) bitwise operator
- a + = b is equivalent to:**  
(A) b+a (B) a= +b (C) b = b + a (D) a = a + b
- Which of the following is used to describe the characteristics of an object?**  
(A) Attribute (B) relationship (C) cardinality (D) modality
- The output of the compiler is called:**  
(A) Library code (B) linked code (C) object code (D) source code

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

**COMPREHENSIVE EXAMINATION 2023-2024**

**COMPUTER STUDIES PAPER-HSC PART-II (SCIENCE GROUP)**

According to the syllabus of the Intermediate Board of Education, Karachi



TIME: 2 HOURS 45 MINUTES

**SECTION 'B'**

MAX. MARKS: 60

**(SHORT-ANSWER QUESTIONS)**

Note: Attempt any Ten (10) part questions from this Section, All questions carry equal marks.

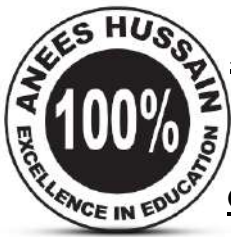
Marks: 30

Q. 2:

- i. What is foreign key? Where do we use it?  
**OR** Write a program to swap any two input values.
- ii. What is the main difference between while and do...while loop?
- iii. In which condition is one to many relationship used?
- iv. What is the output of the following program segment?  
for (int a=1;a<10;a++)  
{  
for(int b=a;b<10;b++)  
{  
printf(“%d”, b);  
}  
printf(“\n”);  
}
- v. Write the full form of the following:  
\* SQL                    \* DML                    \* DDL
- vi. Write a program in C language to input your age in years and convert it into minutes and hours.
- vii. Define the following:  
Entity                    \* attribute                    \* record                    \* table
- viii. What do you know about top down design in programming language?  
**OR** Write any four characteristics of a Primary key.
- ix. Difference between constant and variable.  
**OR** Write any four rules of naming identifiers.
- x. Rewrite the following program:  
PRINTF(“%D”,x):                    \* for(a==1;a<10;a--)                    \* If (a < b) then Printf(“/n”);                    \* Write(a);
- xi. Evaluate the following x and y in each step if x=2 :  
y = x++  
y=++x;  
y=x--  
y--x;
- xii. Convert the following with the help of library functions:  
\*  $\left(\sqrt{\frac{a^2+abc}{bxc}}\right)$                     \*  $2as = vf^2 - vi^2$                     \*  $x = y \times \frac{1}{2} + (a \times b)^3$
- xiii. Difference between increment and decrement operators.  
**OR** Draw a flowchart to find out the less number by giving any three numbers.
- xiv. Write a program of the following output:  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
**OR** Define the following:  
\* Switch statement                    \* break                    \* continue
- xv. Write the following code into while loop statement and show the output:  
for(int a=1, a<=5; a++)  
for(b=1;b<=a: b++)  
printf(“%d”, a \* b);  
**OR** Write a program to print the odd numbers from 51 to 100 by using do...while loop.

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

**COMPREHENSIVE EXAMINATION 2023-2024**

**COMPUTER STUDIES PAPER-HSC PART-II (SCIENCE GROUP)**

According to the syllabus of the Intermediate Board of Education, Karachi

**SECTION 'C'**

**(DETAILED-ANSWER QUESTIONS)**



**Note: Attempt any three questions. All questions carry equal marks.**

**Marks: 30**

- Q3.** Describe different database models with the help of diagram and examples.
- Q4.** Define control structure. Also describe different types of control structures used in C language in detail.
- Q5.** Define function. Why do we use it also explain any five input and output functions.
- Q6.** Define array with its different types with the help of examples.
- Q7.** Describe different data types used in C language with its memory size, range and keywords..

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## COMPREHENSIVE EXAMINATION 2023-24

### MATHEMATICS PAPER-HSC PART-II (PRE-ENGINEERING)

According to the syllabus of the Board of Intermediate Education, Karachi

Time: 20 Minutes

#### SECTION 'A' (MULTIPLE CHOICE QUESTIONS)

Max. Marks: 20

- NOTE:**
- This section consists of 20 part questions and all are to be answered. Each question carries 1 mark.
  - The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.
  - Use only blue / black ballpoint pen or pointer on OMR sheet.
  - Avoid using pencil / white-o pen on OMR sheet.

Q . 1: Choose the correct answer for each from the given options:

- The value of k for which the function  $f(x) = \begin{cases} \frac{x}{\tan 3x} & x \neq 0 \\ k & x = 0 \end{cases}$  is continuous is:  
(A) 0 (B) 3 (C)  $\frac{1}{2}$  (D)  $\frac{1}{3}$
- If  $f(x) = x + 3$  and  $g(x) = x^2$  then  $g \circ f(x)$  at  $x = 1$  is:  
(A) 15 (B) 0 (C) 16 (D) 17
- The domain of the vector function  $\vec{r}(t) = t^2\hat{i} + \frac{1}{t}\hat{j} + (t + 3)\hat{k}$  is:  
(A)  $\{t|t \in IR\}$  (B)  $\{t|t \in IR \wedge t \leq 3\}$  (C)  $\{t|t \in IR \wedge t \neq 0\}$  (D)  $\{t|t \in IR \wedge t \leq 0\}$
- In maple to evaluate an expressin we use the command:  
(A) > eval of (Pi, 5) (B) > eval (C) > restart (D) None of these
- To draw a graph of a function  $f(x)$  from  $x = a$  to  $x = b$  we use the command:  
(A) > Draw (f (x), x = a..b) (B) > plot (f (x), x = a..b)  
(C) > curve (f (x), x = a..b) (D) > sketch (f (x), x = a..b)
- If  $y = \tan^{-1} \frac{1 - \cos 2x}{1 + \cos 2x}$  then  $\frac{dy}{dx} =$  \_\_\_\_\_:  
(A) 1 (B) -1 (C) 2 (D)  $\frac{1}{2}$
- $\frac{d}{dx} (5)^{\sin x} =$  \_\_\_\_\_:  
(A)  $(5)^{\sin x} \cdot \cos x$  (B)  $(5)^{\sin x} \ln 5 \tan x$  (C)  $(5)^{\cos x} \ln 5$  (D)  $(5)^{\sin x} \ln 5 \cos x$
- $\frac{d}{dx} (\sinh^{-1} x + \cosh^{-1} x)$  is:  
(A)  $\cosh^{-1} x - \sinh^{-1} x$  (B)  $\frac{1}{\sqrt{1+x^2}} - \frac{1}{\sqrt{1-x^2}}$  (C)  $\frac{1}{\sqrt{x^2+1}} + \frac{1}{\sqrt{x^2-1}}$  (D)  $\frac{1}{\sqrt{x^2-1}} - \frac{1}{\sqrt{1+x^2}}$
- $\int \ln(e^x \cdot e^{\sin x}) dx = ?$   
(A)  $\frac{1}{e^{x+\sin x}} + c$  (B)  $\ln \sin x + c$  (C)  $\frac{x^2}{2} - \cos x + c$  (D)  $x \ln \sin x + c$
- $\int \frac{e^{\tan x}}{\cos^2 x} dx =$  \_\_\_\_\_:  
(A)  $\frac{\sin^2 x}{2} + c$  (B)  $e^{\tan x} + c$  (C)  $\frac{\tan^2 x}{2} + c$  (D)  $\ln(\sec x + \tan x) + c$
- Equation of vertical line passing through (-8, 5) is:  
(A)  $y = 5$  (B)  $x - 8 = 0$  (C)  $x + 8 = 0$  (D)  $y = 8$
- The distance of the point (7, 11) from y-axis is:  
(A)  $\sqrt{153}$  unit (B)  $\sqrt{163}$  unit (C) 7 unit (D) 11 unit
- The circle  $x^2 + y^2 + 20x - 8y + 16 = 0$ :  
(A) Touches x-axis (B) touches y-axis (C) cuts y-axis (D) passes through origin
- The value of k for which the line  $2x + 3y + k = 0$  is normal to the circle  $x^2 + y^2 + 2x + 9 = 0$  is:  
(A) -2 (B) 2 (C) 3 (D) -3
- The ecentricity of Hyperbola  $\frac{x^2}{9} - \frac{y^2}{9} = 1$  is:  
(A) 1.5 (B) 0 (C)  $\frac{1}{2}$  (D)  $\sqrt{2}$
- The value of k for which the line  $y = k$  is tangent to the ellipse  $\frac{x^2}{25} + \frac{y^2}{9} = 1$  is:  
(A)  $\pm 5$  (B)  $\pm \frac{7}{5}$  (C)  $\pm 3$  (D)  $\pm 4$

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### MATHEMATICS PAPER-HSC PART-II (PRE-ENGINEERING)

According to the syllabus of the Board of Intermediate Education, Karachi



- xvii. The order and degree of differential equation  $\frac{dy}{dx} = \sqrt[3]{\left(\frac{d^2y}{dx^2} + 1\right)^2}$  is:  
(A) Order = 3                      (B) Order = 2                      (C) Order = 2                      (D) Order = 6  
Degree = 4                      Degree = 3                      Degree = 2                      Degree =  $\frac{3}{2}$
- xviii. The function  $f(x, y) = \sqrt{x^8 - 3x^2y^6}$  is a homogenous function of degree.  
(A) 3                      (B) 2                      (C) 1                      (D) 4
- xix. In Simpson one third method the number of subinterval is the multiple of:  
(A) 4                      (B) 1                      (C) 2                      (D) 3
- xx. The general solution of differential equation  $\frac{dy}{dx} + y^2 = 0$  is:  
(A)  $y = ce^x$                       (B)  $y = \frac{1}{x+c}$                       (C)  $y = \frac{x^3}{3} + c$                       (D)  $y = -\frac{x^3}{3} + c$

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### MATHEMATICS PAPER-HSC PART-II (PRE-ENGINEERING)

According to the syllabus of the Board of Intermediate Education, Karachi



Time: 2 Hours 40 Minutes

Max. Marks: 80

#### SECTION 'B' (SHORT-ANSWER QUESTIONS)

Note: Attempt any Ten (10) questions from this section.

Marks 40

Q.2:

i) Evaluate any one of the following:

a)  $\lim_{x \rightarrow e} \frac{\ln x - 1}{x - e}$

b)  $\lim_{x \rightarrow 0} \frac{3e^{-5x} - 5e^{-2x} + 2}{x}$

c)  $\lim_{x \rightarrow \frac{\pi}{4}} \frac{\sqrt{2} - \cos x - \sin x}{(4x - \pi)^2}$

d)  $\lim_{x \rightarrow 0} \frac{1 - \cos mx}{1 - \cos nx}$

ii) If  $f(x) = \begin{cases} \frac{\sqrt{2x+5} - \sqrt{x+7}}{x-2}, & x \neq 2 \\ k, & x = 2 \end{cases}$ , find the value of k so that f is continuous at x = 2.

OR find the values of m and n so that given function (f) is continuous at x = 3

$$f(x) = \begin{cases} mx & \text{If } x < 3 \\ n & \text{If } x = 3 \\ -2x + 9 & \text{If } x > 3 \end{cases}$$

iii) If  $y = \sqrt{\sin x} + \sqrt{\sin x} + \sqrt{\sin x} + \dots$  show that  $(2y - 1)y' = \cos x$

OR If  $y = \tan(\tan^{-1} x)$  show that  $(1 + x^2) \frac{dy}{dx} - a(1 + y^2) = 0$

iv) Find  $\frac{dy}{dx}$  of any one:

a)  $y = (\tan^{-1} x)^{\sin x + \cos x}$

b)  $\ln[\cos h^{-1} x] + \sinh^{-1} y = c$

OR Differentiate by using 1<sup>st</sup> principal method (any one):

a)  $f(x) = (2x + 1)^{\frac{1}{3}}$

b)  $f(x) = \sec \sqrt{x}$

v) At what point on the curve  $x^2 + y^2 - 2x - 4y + 1 = 0$ , the tangent is parallel to x-axis?

OR Find  $\frac{d^2y}{dx^2}$  if  $x = -5t^3 - 7$  and  $y = 3t^2 + 16$

vi) A particle moves along the curve  $x = 2t^2$  and  $y = 4t$ . Find the component of velocity and acceleration at  $t = 2$  in the direction of  $2\hat{i} + \hat{j}$ .

OR A particle moves along the curve whose parametric equations are  $x = t^3 + 2t, y = 3e^{-2t}, z = 2\sin 5t$  where x, y and z show variations of the distance covered by the particle in cm with time in seconds. Find the magnitude of the acceleration of the particle at  $t = 0$ .

vii) Evaluate any one integral:

a)  $\int \frac{\tan x}{\ln(\cos x)} dx$

b)  $\int \cos 3x \cos 5x dx$

c)  $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin^2 x \cos^2 x dx$

d)  $\int_0^4 \frac{dx}{(\sqrt{2+x} + \sqrt{x})}$

viii) Find the area above the x-axis under the curve between the given ordinates:

$y = \cos^4 x \quad x = 0, x = \frac{\pi}{2}$

OR  $\frac{x^2}{4} + \frac{y^2}{9} = 1 \quad x = -1, x = 1$

ix) If a point P (k, 7) divides the line segment joining A(8, 9) and B(1, 2) in the ratio m:n then find ratio m:n also find k.

OR A(2, 7) and B(-4, -8) are coordinates of the line segment AB. There are two points that trisect the segment AB. Find the points of trisections.

x) Find the equation of perpendicular bisector of the segment joining (-1, 2) and (9, 12).

OR For what value of k will the three lines  $y = 3x - 1, 2y = x + 3$  and  $3y = kx + 4$  be concurrent?

OR Find the equation of the line which passes through (5, 6) and the y-intercept is twice that of the x-intercept.

xi) Find the equation of the circle passing through (-3, -4) and is concentric with the circle whose equation is  $x^2 + y^2 - 6x + 8y - 24 = 0$

OR Prove that the two circles  $x^2 + y^2 + 2gx + c = 0$  and  $x^2 + y^2 + 2fy + c = 0$  touch each other if  $\frac{1}{f^2} + \frac{1}{g^2} = \frac{1}{c}$ .

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### MATHEMATICS PAPER-HSC PART-II (PRE-ENGINEERING)

According to the syllabus of the Board of Intermediate Education, Karachi



- xii) Find  $f_x$  and  $f_y$  when  $f(x, y) = \frac{1}{2} \ln(x^2 + y^2)$  OR  $f(x, y) = e^x \cos y$
- xiii) Find the equation of the circle whose centre is at the focus and whose diameter is the latus rectum of the Parabola  $x^2 = 12y$ .  
 OR Find the equation of the Parabola whose vertex is at (2, 4) and focus is at (3, 4).  
 OR There is a Parabolic reflector of 12cm in diameter is used in a vehicle where should the light source be placed to produce parallel beam of light whereas the reflector is 8cm deep.
- xiv) Find the equation of ellipse with centre at origin and Foci at  $(\pm 5, 0)$  and minor axis is 12 unit long and along y-axis.  
 OR Find the condition when line  $y = \sqrt{5}x + c$  is tangent to the ellipse  $4x^2 + 9y^2 = 36$ .
- xv) Find the orthogonal trajectories of the hyperbola  $xy = c$  OR family of straight line  $y = mx$ .  
 OR Show that  $y = Ae^{2x} + Be^{3x}$  is the general solution of  $\frac{d^2y}{dx^2} - 5\frac{dy}{dx} + 6y = 0$ .

### SECTION 'C'

#### (DETAILED-ANSWER QUESTIONS)

Note: Attempt any five questions from this section including Q.3 which is compulsory.

Marks: 40

Q.3 Evaluate any two of the following:

- a)  $\int e^{ax} \sin bx \, dx$  OR  $\int \sec^3 x \tan x \ln(\sec x) \, dx$
- b)  $\int \frac{\sec^2 x \, dx}{(1+\tan x)(2+\tan x)}$  OR  $\int \frac{dx}{(x-3)(x^2+1)}$
- c)  $\int_0^{2\sqrt{3}} \frac{x^3 \, dx}{\sqrt{x^2+4}}$  OR  $\int \frac{dx}{(16-x^2)^{\frac{5}{2}}}$
- d)  $\int \cot^5 x \operatorname{Cosec}^{\frac{3}{2}} x \, dx$  OR  $\int \frac{e^{2x}}{e^x + e^{-x}} \, dx$

Q.4 Find the maximum and minimum values of a function  $f: \mathbb{R} \rightarrow \mathbb{R}$  where  $f(x) = x^3 - 9x^2 + 15x + 3$ .

OR  $f(x) = e^x \sin x$

OR Find the first four terms of the Taylor's series for the following function  $\ln x$  centered at  $a = 1$  OR  $\sin x$  Centered at  $a = \frac{\pi}{4}$

Q.5 Find the equation of a line through the intersection of the lines  $3x - 4y + 1 = 0$ ,  $5x + y - 1 = 0$  and cutting off equal intercepts from the axes?

OR The vertices P, Q and R of a triangle are (2, 1), (5, 2) and (3, 4) respectively. Find the coordinates of the Circum Centre and also the radius of the Circum Circle of the triangle?

Q.6 Find the equation of the Circle containing the points (1, 2), (2, 3) and having centre on the line  $x - y + 1 = 0$

OR Find the equation of the circle containing the points (1, -2), (3, -4) and touching x-axis.

OR Find the equation of tangents to  $x^2 + y^2 - 6x - 2y + 9 = 0$  through the origin find also their respective point of contact?

Q.7 Find the equation of the circle passing through the focus of parabola  $y^2 + 8x = 0$  and foci of ellipse  $25x^2 + 16y^2 = 400$ .

OR Find Centre, foci, eccentricity, vertices and equation of directrices of hyperbola  $25x^2 - 150x - 9y^2 + 72y + 306 = 0$

Q.8 If  $u = \tan^{-1} \left( \frac{x^3 + y^3}{x - y} \right)$  then prove that  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \sin 2u$ .

OR  $u = \sec^{-1} \left( \frac{x^3 - y^3}{x + y} \right)$  Show that  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 2 \cot u$ .

Q.9 Use Regula falsi method to find the root of  $x^3 - 2x - 5 = 0$  [2, 3] up to three iteration.

OR  $f(x) = 2 \cos x - x$  with initial guess  $x_0 = 0$  upto the 4 iterations.

OR Evaluate  $\int_0^1 e^x \, dx$  by Simpson's  $\frac{1}{3}$  rule with  $n = 6$

Q.10 Solve the differential equation: (Any One)

i)  $(2x + y + 1)dx + (2x + y - 1)dy = 0$

ii)  $(x + y)dy - (x - y)dx = 0$

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### BIOLOGY PAPER-HSC-II (SCIENCE PRE-MEDICAL GROUP)

According to the syllabus of the Board of Intermediate Education, Karachi



Time: 20 minutes

## ZOOLOGY (THEORY)

Max. Marks: 09

### SECTION 'A'

#### (MULTIPLE CHOICE QUESTIONS)

- NOTE:**
- This section consists of 18 part questions and all are to be answered. Each question carries ½ mark.
  - The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.
  - Use only blue / black ballpoint pen or pointer on OMR sheet.
  - Avoid using pencil / white-o pen on OMR sheet.

**Q. 1: Choose the most appropriate answer for each from the given options:**

- The end of the fertility in human female is called**  
(A) Menopause (B) Lactation (C) Ovulation (D) Gestation
- The total number of polar bodies in Oogenesis are**  
(A) 3 (B) 6 (C) 9 (D) 0
- Ventral roots of spinal cord contains axons of**  
(A) Motor neuron (B) Inter neuron (C) Sensory neuron (D) Neuroglial cells
- The cells of pancreas which are responsible for the production of Insulin**  
(A) Beta cells (B) Gamma cells (C) Alpha cells (D) Dry cells
- Which of the following is the correct order**  
(A) morula-cleavage-blastula (B) blastula-gastrula-morula  
(C) cleavage-morula-blastula (D) neurula-morula-blastula
- The coding sequence of gene are**  
(A) Codon (B) Exon (C) Intron (D) Anti-codon
- Which of the following can serve as a vector in rDNA technology**  
(A) Plasmid (B) Bacteria (C) Algae (D) Mosquito
- The renewable resource is**  
(A) Wildlife (B) Fossil fuel (C) Nuclear energy (D) Coal
- The part of brain involved in the long term memories**  
(A) Amygdala (B) Hippocampus (C) Hypothalamus (D) Thalamus
- The number of nephrons in one kidney of man is**  
(A) 4 billion (B) 20 million (C) 8 billion (D) 1 million
- The gas responsible for Ozone depletion is**  
(A) Oxygen (B) Nitrogen (C) Carbon dioxide (D) Chlorine
- Chromosomal defects refers to the \_\_\_\_\_**  
(A) Many genes (B) Abnormal number of chromosomes  
(C) Many genes with environmental factors (D) None
- Kidney stones or Calculi are 5% composed of**  
(A) Calcium (B) Potassium  
(C) Magnesium phosphate (D) Uric Acid
- The outer covering of bone is**  
(A) perimysium (B) Endostium (C) Periostium (D) Perichondrium
- Smooth muscle are found in**  
(A) Heart (B) Skeleton (C) Hollow structure (D) Nerve
- Hand with drawl by touching hot object is an example of**  
(A) Poly synaptic (B) Monosynaptic (C) Synaptic (D) Tetrasynaptic
- Thoracic region of vertebral column contain \_\_\_\_\_ bones**  
(A) 12 (B) 7 (C) 5 (D) 10
- Treponema palladium cause which of the following disease.**  
(A) Syphilis (B) Gonorrhea (C) Herpes (D) AIDS

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### BIOLOGY PAPER-HSC-II (SCIENCE PRE-MEDICAL GROUP)

According to the syllabus of the Board of Intermediate Education, Karachi



Time: 1 hour 40 minutes

## ZOOLOGY (THEORY)

Max. Marks: 36

### SECTION 'B'

#### (SHORT-ANSWER QUESTIONS)

Note: Attempt Nine (09) part questions in all. Select Five (05) from REASONING questions and four (04) from NON-REASONING questions. All questions carry equal marks. Marks: 18

Q. 2:

#### (a) Reasoning Questions

- i. What is hyperthermia? How body overcome this condition?  
OR Why depletion of ozone layer is harmful
- ii. Why Cortical Nephrons produce Dilute Urine?  
OR Why steroid hormones do not need secondary messenger?  
OR Why hormone secreted from adrenal medulla is called "Emergency Hormones"?
- iii. How arthropods increase the size of their body?
- iv. Why is cleavage in birds is meroblastic and discoidal?
- v. Why genetic counseling is important?  
OR Why do muscle show fatigue after heavy exercise?
- vi. Why muscles become fatigue after heavy exercise?  
OR Why Testes lie down in Scrotum?
- vii. Why identical twins are similar but fraternal twins are not.  
OR Why terrestrial animals cannot excrete ammonia?
- viii. How body gain heat in cold temperature?  
OR How Positive variations survive in environment?

#### (b) Non-Reasoning Questions

- ix. Write a short note on Kidney Stones.  
OR Write a note on Acid Rain OR Green house effect.
- x. Differentiate between Bones and Cartilage.  
OR Differentiate between tetanic and tetany.
- xi. Differentiate between Parasympathetic and Sympathetic nervous system.  
OR Describe Human Development in Trimesters.
- xii. Write a short note on Reflex action.  
OR Describe the Antagonistic muscles.
- xiii. Describe Test tube babies' technique (IVF)  
OR Describe Syphilis and Gonorrhoea.
- xiv. Write a short note on Receptors on the basis of Function.  
OR Draw neat and labeled diagram of Neuron and write down the names of different types of neurons
- xv. Define joints, Explain its types with an example of each.

### SECTION 'C'

#### (DETAILED-ANSWER QUESTIONS)

Note: Attempt any two questions. All questions carry equal marks. Draw neat and labeled diagrams where necessary. Marks: 18

- Q3. Define muscles and describe in detail structure of skeletal muscles and describe the cross bridge cycle.  
OR Define menstrual cycle. Describe the phases of menstrual cycle (diagram required)
- Q4. Describe the following animal behaviors, Habituation, Imprinting, Classic conditioning, Insight learning  
OR Explain the resting membrane potential, depolarization, action potential, Synapse and repolarization.
- Q5. Explain the process of Spermatogenesis or Oogenesis with flow chart.  
OR Describe in detail the Female reproductive system along-with labeled diagram.

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Time: 20 minutes

## BOTANY (THEORY)

Max. Marks: 08

### SECTION 'A'

#### (MULTIPLE CHOICE QUESTIONS)

- NOTE:**
- This section consists of 16 part questions and all are to be answered. Each question carries ½ mark.
  - The correct answer bubble must be filled on OMR sheet 1) (A) (B) (C) (D) provided with answer script.
  - Use only blue / black ballpoint pen or pointer on OMR sheet.
  - Avoid using pencil / white-o pen on OMR sheet.

**Q. 1: Choose the most appropriate answer for each from the given options:**

- The significance of Monoclonal antibodies is:**  
(A) Study gene expression (B) Diagnosed diseases  
(C) Genetically modified organisms (D) Developed new drugs
- The source of carbon to plant in the carbon cycle is:**  
(A) Carbonate rock (B) Atmospheric carbon dioxide  
(C) Fossil fuel (D) Sunlight
- The pioneers in Xerarch succession are the:**  
(A) Foliose lichens (B) Mosses (C) Crustose lichens (D) Shrubs
- Theory of natural selection lacking any support from:**  
(A) Biogeography (B) Genetics (C) Comparative anatomy (D) Molecular biology
- Archaeopteryx is a connecting link between:**  
(A) Amphibian and reptiles (B) Reptiles and Aves  
(C) Aves and Mammals (D) Fish and Amphibians
- Which of the following would cause phenotype variations among organisms of the same genotype:**  
(A) Continuous variation within species (B) Different varieties of the same species  
(C) Different sexes (D) Exposure of different environment
- A boy is color blind, his mother genotype could be:**  
(A)  $X^N X^N$  (B)  $X^N X^n$  (C)  $X^N Y$  (D)  $X^n Y$
- The allele of holandric gene is located at:**  
(A) X-Chromosomes (B) Y-Chromosomes (C) Autosomes (D) All of them
- International society of blood transfusion has found:**  
(A) 5 blood group system (B) 10 blood group system  
(C) 20 blood group system (D) More than 30 blood group system
- Plants having staminate flower can't perform the following:**  
(A) Cross pollination (B) Self Pollination (C) Parthenocarpy (D) Double fertilization
- The Nitrogenous base present in RNA but not in DNA:**  
(A) Adenine (B) Guanine (C) Cytosine (D) Uracil
- The removal of floating solid and organic materials from the sewage is:**  
(A) Primary treatment (B) Secondary treatment  
(C) Tertiary treatment (D) Zero waste
- The fungi that gives puff appearance to dough is called:**  
(A) Lactobacillus (B) Saccharomyces (C) E.coli (D) Penicillium
- The significance of Polymerase Chain Reaction (PCR) is:**  
(A) Detecting Protein (B) Creating GMO  
(C) Enzyme synthesis (D) Amplifying specific DNA fragment
- Gel electrophoresis is a technique used to separate DNA fragments based on size. What is the significance of gel electrophoresis?**  
(A) Study gene expression (B) Sequence DNA  
(C) Identify genetic variation (D) Identify genetic disorder
- Genomic map are useful for:**  
(A) Identifying genes associated with specific diseases  
(B) Creating genetically modified organisms  
(C) Analyzing DNA methylation patterns  
(D) Detecting Protein-Protein interaction

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# ANEES HUSSAIN COACHING CLASSES

EXCELLENCE IN EDUCATION SINCE 1989

## COMPREHENSIVE EXAMINATION 2023-24

### BIOLOGY PAPER-HSC-II (SCIENCE PRE-MEDICAL GROUP)

According to the syllabus of the Intermediate Board of Education, Karachi



Time: 1 hour 40 minutes

## BOTANY (THEORY)

Max. Marks: 32

### SECTION 'B'

#### (SHORT-ANSWER QUESTIONS)

Q. 2: Answer any eight part questions. Each question carries two marks.

Marks: 16

- i. What are leading and lagging strand of DNA?
- ii. Why Amp<sup>R</sup> and Lac<sup>Z</sup> genes are used in the construction of rDNA?  
OR Why replication is called semi conservative process?
- iii. Why 'O – negative' blood group person consider as a universal donor?
- iv. Why endosymbiotic theory seems more powerful in dealing with the evolution of eukaryotes?  
OR How does the energy flow between trophic level?
- v. Give the name of enzymes involved in replication of DNA along with their brief function.  
OR Why Rh-incompatibility could be danger to the developing fetus and mother?
- vi. Define Speciation? Name different types of Speciation.  
OR Define chromosome. Describe the types of chromosomes according to the position of centromere.
- vii. Write the difference between **any one** of the following:
  - a. Selection and hybridization
  - b. Renewable and Non-renewable resources
  - c. Convergent and divergent evolution
  - d. New Darwinism and Darwinism
  - e. Bottle-neck effect and founder's effect
  - f. Invagination theory and Endosymbiotic theory
- viii. Write the short note **any one** of the following.
  - a. Tissue culture
  - b. Cystic fibrosis
  - c. Composition of Ozone layer
  - d. Process of denitrification
  - e. Test cross
- ix. How the sympatric speciation differs from parapatric speciation?  
OR What are the major producer in a terrestrial ecosystem?
- x. Draw the structure of transfer tRNA and give function of their different sites.
- xi. Define mutation. How does ionization radiation damage the DNA?  
OR What do you mean by integrated disease and its management?
- xii. Why law of segregation is called purity of gametes?  
OR Find the possible blood group of children is the blood group of father is O and that of the mother AB.
- xiii. Define **any two** of the following terms:
  - a. Palindrome
  - b. Allele
  - c. RFLPS
  - d. Karyotype
  - e. Back cross
  - f. Genetic drift
- xiv. Why restriction enzymes are called molecular scissors?  
OR Why DNA is negatively charge molecule?

### SECTION 'C'

#### (DETAILED-ANSWER QUESTIONS)

Note: Attempt **any two questions** from this section. All questions carry equal marks.

Marks: 16

- Q3. What is Succession? Describe Xerarch or Hydrarch succession.  
OR What is Succession? Describe different stages of secondary succession with examples.  
OR Define evolution. Describe the Darwin theory OR Lamarck theory and the objection raised against it.
- Q4. What is biogeochemical cycle? Explain nitrogen cycle in detail.  
OR What is the role of microbes in household food processing?
- Q5. Define Mendel's law of Independent Assortment and explain with the help of checker board.  
OR Describe the process of Translation in gene expression.  
OR Explain gene amplification through PCR and mention any two applications.

NORTH NAZIMABAD CAMPUS I	NORTH NAZIMABAD CAMPUS II	GULSHAN	NORTH KARACHI	BAHADURABAD	GULISTAN-E-JOHAR
C-17 Block I, 5 Star Chowranghi, near Imam Clinic, North Nazimabad, Karachi. 021-36631160/36634284 0321-2333114	2nd Floor Saima Paari View, B-pp Block H, North Nazimabad, near Danisl Snacks 021-36641888/36641888 0333-2867446-7	E4, 1 <sup>st</sup> Floor, Maqbool Heights, Main NIPA Chowranghi, Above Mobile World, Block-10, Gulshan-e-Iqbal, Karachi 021-34989588/34993726 34993996/0321-9289588	A-985, 2nd Floor, Sector 11-B, main U.P More bus stop, North Karachi, Karachi 021-36932266/0311-2299282 0322-2685558	Mezzanine Floor, Alamgir Rd, near Subway Snacks & Sharfabad Chowranghi, Karachi 021-34943939/ 34921180 0303-2267893	1 <sup>st</sup> Floor, Sarah Grands, Plot No. SB-29, Gulistan-e-Johar, Block 7, Main University Road, Near Safora Chowranghi, Karachi 021-34661002/34661003 0332-497706

