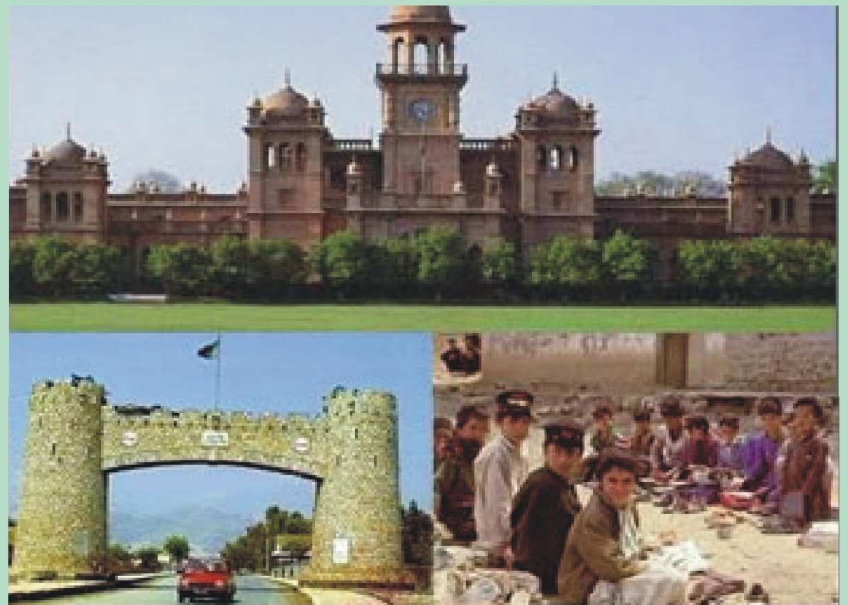


# Students' Guide for Entry Test



**ETE A**

NWFP Educational Testing & Evaluation Agency Peshawar  
[www.etea.edu.pk](http://www.etea.edu.pk)

## **NWFP EDUCATIONAL TESTING AND EVALUATION AGENCY**

Educational Testing and Evaluation Agency of the NWFP (ETEA) is an independent and autonomous educational entity established by the Government of NWFP for the development of resources and systems for the conduct of educational evaluation and testing for the educational institutions in a transparent, uninfluenced and academically sound manner.

### **RESPONSIBILITIES OF ETEA**

The Agency is responsible for the educational evaluation of educational institutions in general, and for admission to the professional institutions providing Medical and Engineering education in particular. ETEA is striving to achieve the testing and evaluation objectives in a manner that may inculcate the spirit of inquiry, application and research among students, during study at colleges and schools.

### **ENTRANCE TESTS**

Entrance Tests have been in practice in our country for many years in selection of candidates for entry to several professions e.g. Armed Forces and Civil Services. These tests are being conducted by most of the private institutions and universities in Pakistan such as AKU, GIK Institute, NUST, LUMS etc. and in all professional and Cadet Colleges under the control of Ministry of Defence.

Entrance Test devolves on the students the responsibility to concentrate on the acquisition of ability and skill rather than resorting to parrot like memorizing. Thorough understanding of the conceptual parts of the contents of the core subjects is the key to success in the test. Full concentration would guarantee speed and accuracy in doing the MCQs.

ETEA has been conducting Entrance Tests for admission to the NWFP University of Engineering and Technology and to the Medical and Dental Colleges of NWFP since 1998. It has also been conducting Entrance Tests for admission to the Undergraduate and Graduate Programmes of IMS, Hayatabad. Tests for selection of Lecturers, IT Teachers and for admission to Quality Education Institutions have also been conducted by ETEA.

Entrance Tests for admission to Engineering and Medical Colleges are held every year. As the candidates are provided with a computer-readable answer-sheet and they have to fill the answers on that sheet only, therefore, some guide lines regarding the question paper, distribution of marks and filling of Answer Sheet are given for their guidance.

<b>COMPOSITION OF THE QUESTION PAPER</b>
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Composition of the question paper for the Entrance Test is as follows:

<b>SUBJECTS</b>	<b>Number of MCQs</b>		
	<b>Medical Group</b>	<b>Computer Engineering</b>	<b>Other branches of Engineering</b>
Physics	60	60	60
Chemistry	60	-----	60
Mathematics	-----	60	60
Computer Science	-----	60	-----
Biology	60	-----	-----
English	20	20	20
<b>Total</b>	<b>200</b>	<b>200</b>	<b>200</b>

1. The questions, contained in the question paper, are not arranged subject-wise. The MCQs are scrambled into four versions A, B, C and D. Version of the paper given to a candidate is called **TEST FORM** and needs to be filled on the answer sheet correctly.
2. Maximum time allowed to attempt the paper is 3 hours.
3. All 200 questions are compulsory and carry equal marks. Marks are awarded for the attempted questions only.
4. Each correct answer carries '4 marks' and each wrong answer '-1 mark'.
5. Double or multiple marked answers are considered as wrong answers.

## INSTRUCTIONS FOR THE CANDIDATES

1. Date, time, and information about the test centre are given at the time of registration. Schedule of the test is also publicized through advertisement in the print media. The candidates are required to reach the venue of the test well in time to avoid any problem.
2. All the seats are arranged in an order of ID Nos. (i.e. Identification Numbers) and the candidates have to look for their seats bearing their ID Nos. pasted on it.
3. Candidates are required to bring with them **clip board** and **black/ blue ball-point, or a black thin tipped marker** to mark the **Pink Answer Sheet**. **(Please note that the Answer Sheet should NOT be marked with a pencil.)**
4. **Candidates are NOT allowed to take Calculators, Cellular phones, Pagers, Watches having calculators, Electronic devices, Books/ Booklets, any kind of paper or cheating material into the test centre. Possession of any one of these will take away the candidate's right of entry into the Test Centre and lead to his/her disqualification.**
5. Candidates are required to write their name and ID Number on the **question paper** immediately after getting it from the invigilator.
6. Candidates are advised to handle the **PINK Answer Sheet** carefully and protect it from sweat and dust. They are further advised not to fold or bend the Answer Sheet because it will have to go through computers for scoring.
7. Nothing is to be written on the back of the **PINK Answer Sheet**.
8. **Candidates are cautioned to mark their answers on the Pink Answer Sheet and NOT on the Question Paper, otherwise they will not be awarded any mark.**
9. Candidates are advised to read the question and the given options very carefully, and mark the correct answer on the pink answer-sheet, because once marked it can not be changed.
10. Use of any type of ERASER or covering fluid can result in damaging the sheet which in turn may affect the correct marking by the OMR. This practice should, therefore, be avoided.
11. An extra sheet is provided at the end of question paper for **rough work**. This sheet is not to be detached from the question paper.

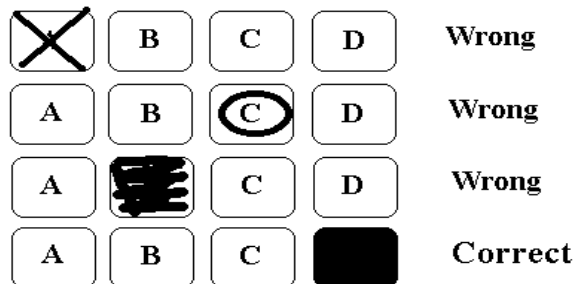
12. The invigilators will NOT answer any query of the candidates during the test regarding the contents of the test. Candidates will have to rely on their own understanding of the paper.
13. At the end of the test, the candidates will have to return both the question paper as well as the answer sheet to the invigilator concerned.  
**Any slippage on this could cost the candidate the entry test.**
14. In extraordinary conditions, like torrential rains, the test may be postponed on the recommendation of Disciplinary and Review Committee in Peshawar, subject to the approval of the Chairman BOG/Chief Minister NWFP, for atleast 24 hours.
15. Results are made available on ETEA’s website [www.etea.edu.pk](http://www.etea.edu.pk) within 24-48 hours.
16. Applications for retotalling of the marks of Entry Test are accepted after 2 days of the declaration of result on payment of Rs. 400/-. (Exact dates and venue are notified during Entry Test). A copy of the students’ answer sheet along with the correct Answer KEY is provided to each applicant.

**HOW TO MARK (or FILL) THE ANSWER SHEET**

Pink Answer Sheet is meant to be scanned or scored by an Optical Mark Reader (OMR). Answer sheet, after being marked with black or blue ball-point pen or a black thin-tipped marker is allowed to pass through the OMR just like a sheet of paper passes through a laser printer. The OMR detects the marks on the Pink Answer Sheet and compares them with the correct answers. By a comparison of the two, the OMR is in a position to tell how many “right” and “wrong” answers have been marked on the Answer Sheet.

As the space for marking answers is very precisely laid out on the answer sheet, it is essential that marks are very carefully made in the designated spaces which should not spill over.

The correct way of marking an answer is given below:



**(a) Writing Identification Number (I.D. NUMBER)**

The purpose of the Identification Number is to ensure the identity of every candidate through a unique number. ID. Number (Roll Number) are marked for the candidates on the PINK Answer Sheet before hand. The candidates will check that they have got the correct answer sheet and that the ID Number has been marked correctly.

**(b) Writing NAME**

Names can have one or more parts. Accordingly the space reserved for the name shows three parts:

**first,**  
**middle** and  
**last.**

In the Western tradition, the **last** bit of the name is also called **surname** or **family name**, and usually that part of the name holds prominence and importance in all official documents. For this reason, the last name or surname is written first, whereas the first and the middle parts of the name follow that order.

As imported software and imported answer sheets are used in the Entrance Tests, familiarity with this protocol is necessary.

For example, consider the name

Muhammad                      Naeem Khan                      Gandapur  
First                                      Middle                                      Last

Looking at the number of squares made available for the Name it is obvious that the above name can not be accommodated in full. Therefore, last and preferably first name must be written in full as given below:

LAST NAME							FIRST NAME							M.I.					
G	A	N	D	A	P	U	R		M	U	H	A	M	M	A	D		N	K

It can be seen that as there was not enough room for the full middle name (Naeem Khan), it has, therefore, been abbreviated as **NK** called Middle Initials.

If both the first and the last names are too long, like Imdadullah Khan Daulatzai, the middle name or MI can altogether be omitted.

LAST NAME										FIRST NAME					M.I.				
D	A	U	L	A	T	Z	A	I		I	M	D	A	D	U	L	L	A	H

If a name has only two bits, like Laiba Khan, then only last and first names are filled.

LAST NAME						FIRST NAME					M.I.	
K	H	A	N			L	A	I	B	A		

Again, if a name has only one bit like Azizullah, then it should be written against the first name.

LAST NAME							FIRST NAME					M.I.					
							A	Z	I	Z	U	L	L	A	H		

However, the OMR, that is used for scanning the Answer Sheets is not programmed to read the names written in this way; it can only detect the solid blobs.

Therefore, the name MUHAMMAD for example written in alphabets has to be converted into black blobs. To do that, locate the letter "M" of "MUHAMMAD" vertically below the letter "M" and fill completely that square. Repeat the same action for U, H, A, M, M, A, and D. See how the squares have been filled underneath the name in the illustration. Unless this is done, the computer would not register the identity of that particular sheet. (Please see replica of Answer Sheet.)

**(c) Writing CODE**

CODE relates the Board from which you have qualified your F.Sc. The following abbreviations given against the name of the Boards be used as CODE and relevant Squares filled accordingly.

<u>Name of the Board</u>	<u>CODE</u>
BISE Abbottabad .....	AD
BISE Azad Kashmir.....	AK
BISE Bannu .....	BU
BISE D-I-Khan.....	DN
BISE Kohat .....	KT
BISE Malakand .....	MK
BISE Mardan .....	MN
BISE Peshawar .....	PR
BISE Saidu Sharif (Swat).....	ST
Federal Board .....	FB
Technical Board.....	TB
Other Boards .....	OB

**(d) Writing TEST FORM**

**(Most Important)**

Please ensure marking of correct **Test Form i.e. A, B, C or D on the pink answer sheet** according to the given **question paper**. As the Computer marks answer sheets according to the Test Form, it is therefore extremely important that correct Test Form according to the question paper is marked on the Answer Sheet.

*Replica of Pink Answer Sheets have been provided at the end.*

*One of these answer sheets has been filled for the guidance of the candidates to show the following information on the pink answer sheet:*

*ID Number:     08492 .*

*Name:           Muhammad Naeem Khan Gandapur.*

*Test Form:     D .*

*Code:           BU .*

A blank answer-sheet is given at the end for practice.



# Sample Questions

## Physics

- 1) Electric flux through surface of a sphere of radius 'r' with charge 'q' outside the surface is :
  - A)  $1/\epsilon_0$
  - B) Zero
  - C)  $q/r$
  - D)  $q/r^2$
- 2) If a convex and concave lens of same focal length 'f' are placed in contact then the focal length of the resultant combination will be :
  - A) 0
  - B)  $f/2$
  - C)  $4f$
  - D) infinity
- 3) Ice contracts on melting when pressure increase, the melting point :
  - A) Decreases
  - B) Increases
  - C) Remain same
  - D) May decrease or increase
- 4) The magnitude of the resultant of two forces is least (minimum) if the angle between them is :
  - A) 0
  - B)  $45^\circ$
  - C)  $90^\circ$
  - D)  $180^\circ$
- 5) An electron is revolving in an orbit of radius 50 p.m. with angular velocity of  $2 \times 10^{12}$  radian/sec its linear speed will be
  - A)  $10^4$  m/s
  - B)  $10^5$  m/s
  - C)  $10^{-1}$  m/s
  - D)  $10^2$  m/s
- 6) The range of  $\beta$ -particle in air is :
  - A) 100 cm
  - B) 200 cm
  - C) 500 cm
  - D) 700 cm
- 7) Half life of a radioactive substance depends upon :
  - A) Temperature
  - B) Pressure
  - C) Nature of substance
  - D) Electric and magnetic field
- 8) The ratio of energies of electron in the first and third excited state of hydrogen atom is :
  - A)  $\frac{1}{3}$
  - B)  $\frac{1}{9}$
  - C) 9
  - D) 3
- 9) In photoelectric effect the number of photoelectron emitted from the plate depends on :
  - A) Frequency of incident light
  - B) Intensity of incident light
  - C) Angle at which light is incident
  - D) Nature of metal
- 10) In P-type semi-conductors, the conduction will be due to :
  - A) Electrons
  - B) Holes
  - C) Both holes and electrons
  - D)  $\alpha$ -particles
- 11) If half of a convex lens is covered then it will give :
  - A) No image of an object
  - B) Clear image as before when it was not covered
  - C) An image with less brightness
  - D) An inverted image
- 12) An aeroplane is moving with speed of 300 km/hr, drop a bomb. The bomb reaches the ground in 10 sec the height from which the bomb is dropped will be:
  - A) 49 m
  - B) 490 m
  - C) 882.5 m
  - D) 88.25 m

## Chemistry

- 13) Which of the following has the largest number of molecules?
- A) One mole of  $H_2$
  - B) 4.48 l of  $H_2$  at STP
  - C) 0.44g of  $CO_2$
  - D)  $6 \times 10^{22}$  molecules of  $Cl_2$
- 14) What happens to the volume of a given mass of a gas when both its temperature (K) and pressure are doubled?
- A) Reduced by  $\frac{1}{4}$
  - B) Increased 4 times
  - C) Is unchanged
  - D) None of the above
- 15) Compounds which show hydrogen bonding will have:
- A) low density
  - B) low viscosity
  - C) high boiling point
  - D) high vapour pressure
- 16) Which of the following contains 1 proton, 1 neutron and 2 electrons?
- A) H
  - B)  $H^-$
  - C)  $D^-$
  - D) He
- 17) Two ice cubes are pressed over each other, they unite to form one piece. It is due to:
- A) H-bond formation
  - B) covalent bond formation
  - C) Vander-Waals forces
  - D) all of the above
- 18) Which of the following enthalpies is always negative ?
- A) Enthalpy of formation
  - B) Enthalpy of combustion
  - C) Enthalpy of solution
  - D) Enthalpy of atomization
- 19) Which one of the following is the weakest acid ?
- A) HF
  - B)  $HNO_3$
  - C)  $H_2SO_4$
  - D) HCl
- 20) When straight chain compounds are converted into branched chain compounds, then their boiling points are:
- A) increased
  - B) decreased
  - C) not effected
  - D) first increased then decreased
- 21) The first ionization potential of oxygen is lower than nitrogen. This is because of:
- A) small size of nitrogen
  - B) low E.N. oxygen
  - C) stability of half filled 'p' orbital
  - D) both A & B
- 22) The boiling points, melting points and densities of alkaline earth metals are higher than alkali metals. This is due to:
- A) high ionization potential values
  - B) high nuclear charge
  - C) both A & B
  - D) higher oxidation states
- 23) Aqua regia is a mixture of conc.  $HNO_3$  and conc. HCl mixed in a ratio of:
- A) 3 : 1
  - B) 2 : 3
  - C) 3 : 4
  - D) 1 : 3
- 24) Majority of transition elements show unpaired electrons and are hence classified as:
- A) paramagnetic
  - B) diamagnetic
  - C) ferromagnetic
  - D) electromagnetic
- 25) The element carbon shows the property of catenation. This property of carbon is responsible for:
- A) hybridization
  - B) isomerism
  - C) multiple bonds
  - D) formation of long chain or ring compounds

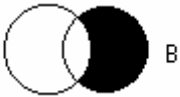
## Zoology

- 26) Fine vesicles in Amoeba, which secrete digestive enzymes are:
- A) Lysosomes
  - B) Centrosomes
  - C) Food vacuoles
  - D) Contractile vacuoles
- 27) The beginning of the centralized nervous system is found in:
- A) Hydra
  - B) Planaria
  - C) Amoeba
  - D) Sycon
- 28) Cortisone is an important hormone of:
- A) Adrenal cortex
  - B) Adrenal medulla
  - C) Cerebral cortex
  - D) Cerebral medulla
- 29) A colour blind father will most probably transmit the gene for colour blindness to:
- A) 50% of his sons
  - B) 50% of his daughters
  - C) 100% of his sons
  - D) 100% of his daughters
- 30) Mitotic spindle mainly contains a protein called:
- A) Tubulin
  - B) Albumin
  - C) Fibrin
  - D) Legumin
- 31) Pinnacocytes and choanocytes are the cells found in:
- A) Coelenterates
  - B) Sponges
  - C) Echinoderms
  - D) Annelids
- 32) Mantle is an envelope of glandular epithelium covering entire body of the animal belonging to the phylum:
- A) Annelida
  - B) Mollusco
  - C) Arthropoda
  - D) Echinodermata

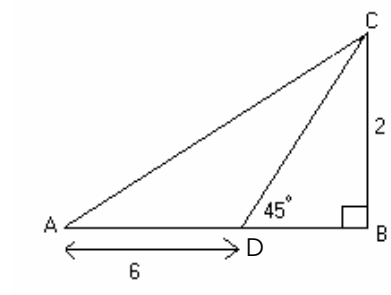
## Botany

- 33) The study of hereditary characters transmitted from parents to offspring is called :
- A) Genetics
  - B) Cytology
  - C) Ecology
  - D) Embryology
- 34) Basically all the enzymes are :
- A) Carbohydrates
  - B) Waxes
  - C) Lipids
  - D) Proteins
- 35) Which of the following is not relevant to generic recombination in Bacteria ?
- A) Conjugation
  - B) Binary fission
  - C) Transduction
  - D) Transformation
- 36) The presence of vascular tissues and the absence of seed formation are charaters of :
- A) Bryophytes
  - B) Pteridophytes
  - C) Gymnosperms
  - D) Angiosperms
- 37) Dark reaction pf photosynthesis takes place in :
- A) Mitochondria
  - B) Grana
  - C) Stroma
  - D) Cytoplasm
- 38) In Krebs cycle Succinic acid is converted to :
- A) Fumaric acid
  - B) Malic acid
  - C) Oxaloacetic acid
  - D) Citric acid
- 39) The earth's surface capable of supporting life is called :
- A) Biosphere
  - B) Lithosphere
  - C) Hydrosphere
  - D) Atmosphere

## Mathematics

- 40) If  $x \in B' = U - B$  then:
- $x \in B$  and  $x \in U$
  - $x \notin B$  and  $x \in U$
  - $x \notin B$  and  $x \notin U$
  - $x \in B$  and  $x \notin U$
- 41) The power set of a set  $S$  containing six numbers is the set whose elements are:
- Three subsets of  $S$
  - Two subsets of  $S$
  - Five subsets of  $S$
  - All possible subsets of  $S$
- 42) The product of two conjugate complex numbers is always a:
- Real number
  - Complex number
  - Irrational number
  - Natural number
- 43) The shaded area in the figure represents the set:
- 
- $A \cup B$
  - $A \cap B$
  - $A - B$
  - $B - A$
- 44) Value of determinant of the matrix  $\begin{bmatrix} a & b+c & 1 \\ b & c+a & 1 \\ c & a+b & 1 \end{bmatrix}$  is:
- $c$
  - $b$
  - $a$
  - $0$
- 45) The number of possible permutations of the letters of the word "ADDING" having two D'S together:
- $5!$
  - $3!$
  - $4!$
  - $25$

- 46) In the figure the length  $AB$  is:



- 7
  - 8
  - 10
  - 12
- 47) If  $R_1 = \{ (x,y) \mid x,y \in \mathbb{R} \text{ and } x > y \}$  is a binary relation then its inverse is :
- $\{ (1,2), (2,3) \}$
  - $\{ (2,1), (3,2), (4,3) \}$
  - $\{ (x,y) \mid x = y \}$
  - $\{ (x,y) \mid x,y \in \mathbb{R} \text{ and } y > x \}$
- 48) The value of  $\lim_{x \rightarrow 0} \frac{\sin ax}{bx}$  is:
- $a$
  - $\frac{a}{b}$
  - $b$
  - $\frac{b}{a}$
- 49) The slope of the tangent to the curve  $y = x^3 + 5$  at the point  $(1, 2)$  is:
- 6
  - 2
  - 5
  - 3
- 50) If  $a^y = x$  then the value of  $y$  is:
- $ax$
  - $\log_a x$
  - $\frac{x}{a}$
  - $\frac{a}{x}$

## English

- 51) The word "dexterity" and "skill" are :
- A) opposite
  - B) somewhat similar
  - C) the same
  - D) not related
- 52) The word "entomology" stands for:
- A) study of language
  - B) study of insects
  - C) study of amphibians
  - D) study of bird life
- 53) "Plutocracy" is government by:
- A) rich people
  - B) officers
  - C) landlords
  - D) nobility
- 54) The place where bees are kept is called
- A) conservatory
  - B) Apiary
  - C) Perry
  - D) Eaves
- 55) Humayun conferred the royal mantle on Akber at a very early age. The underlined word stands for:
- A) royal turban
  - B) loose, sleeveless cloak
  - C) crown
  - D) charge of estates
- 56) The phrase 'neck or naught' means:
- A) risking every thing
  - B) exactly equal
  - C) very difficult
  - D) defeating
- 57) He applauded him, saying that he had done well. (change to direct speech)
- A) He said, "Hurrah, you have done well."
  - B) Ha said, "Bravo! You have done well."
  - C) He applauded, "you have done well."
  - D) "You have done well "he said.

## Computer Science

- 58)  $2^{10}$  is equal to :
- A) 1K
  - B) 2K
  - C) 10K
  - D) 1000K
- 59) Amount of time required for the memory to perform a read or write operation and then return to its original state ready for the next operation is known as :
- A) Access time
  - B) Cycle time
  - C) Clock time
  - D) I/O time
- 60) Computer follows a simple rule called GIGO, GIGO stands for :
- A) GOOD INPUT, GOOD OUTPUT
  - B) GARBAGE IN, GARBAGE OUT
  - C) GIVE INPUT, GIVE OUTPUT
  - D) GAME IN, GAME OUT
- 61) "C" is a powerful high-level programming language that supports :
- A) Powerful operators
  - B) Powerful loops
  - C) Decision making constructs
  - D) All of the above
- 62) A tool that is used to get information from your database by asking specific questions is known as:
- A) Form
  - B) Table
  - C) Query
  - D) Datasheet
- 63) A sequence of characters is generally known as:
- A) Array
  - B) String
  - C) File
  - D) Function
- 64) Variables that are declared outside of any function are known as:
- A) Argument
  - B) Subscripted variable
  - C) Local variable
  - D) Global variable