

HANDLING NEET MCQS?

A few Cool Ways by Neelesh



MEMORY with Prime Minister Bhutan

Be cool and solve one by one

Concept based and complex questions should be solved one by one

Example: In Mendel's experiment with garden pea, round seed shape (RR) was dominant over wrinkled seeds (rr), yellow cotyledon (YY) was dominant over green cotyledon (yy). What are the expected phenotypes in the F₂ generation of the cross RRY^y x rryy? (**CBSE PMT 2005**)

- (a) Only round seeds with green cotyledons
- (b) Only wrinkled seeds with yellow cotyledons

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(c) Only wrinkled seeds with green cotyledons

(d) Round seeds with yellow cotyledons and wrinkled seeds with green cotyledons

Answer: (d) Round seeds with yellow cotyledons and wrinkled seeds with green cotyledons

Steps: 1) A cross between RRYy x rryy will produce the gametes RY and ry.

2) RrYy will produce the gametes RY, Ry, rY and ry. In the F₂ generation of RRYy x rryy, there will be cross between RrYy x RrYy.

3) Now make the Punnett square to calculate the number of off-springs and their genotype:

	RY	Ry	rY	ry
RY	RRYY (round yellow)	RRYy (round yellow)	RrYY (round yellow)	RrYy (round yellow)
Ry	RRYy (round yellow)	RRyy (round green)	RrYy (round yellow)	Rryy (round green)
rY	RrYY (round yellow)	RrYy (round yellow)	rrYY (wrinkled yellow)	rrYy (wrinkle yellow)
ry	RrYy (round yellow)	Rryy (round green)	rrYy (wrinkled yellow)	rryy (wrinkled green)

The genotype of the offspring is as follows: Round yellow – 9, Round green – 3, Wrinkled yellow – 3, Wrinkled green - 1. As round seeds with yellow cotyledons and wrinkled seeds with green cotyledons both are seen in the off-springs so the correct answer is (d). Bingo!!!

Be cool and Observe Keenly by reading very carefully

One should read the question carefully and try to accumulate all the information given in the question. One should not get confused and should always think about all the possibilities.

Example: A normal-vision man whose father was color-blind, marries a woman whose father was also Color blind. They have their first child as a daughter. What are the chances that this child would be Color blind?

(a) 50%

(b) 100%

(CBSE PMT 2012)

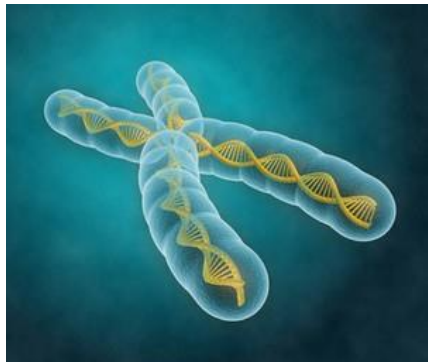
(c) Zero percent

(d) 25%

Answer: (c) Zero percent

In the question it is clearly written that the man is normal but nothing is known about the woman whose father is color blind. So, this creates confusion. There are two possibilities, either the woman is normal or she is carrier of color blindness. One thing to note here is

that this statement is given only to create confusion. Read the question again...the next statement says that their first child is daughter. Daughters are never color blind; they are only carriers of color blindness gene. Therefore the chances that their daughter is color blind would be zero.



In humans, generally "men are affected and women are carriers" for two reasons. The first is the simple statistical fact that if the **X-chromosomes** is a population that carry a particular X-linked mutation at a frequency of 'f' (for example, 1%) then that will be the frequency that men are likely to express the mutation (since they have only one X), while women will express it at a frequency of f^2 (for example $1\% * 1\% = 0.01\%$) since they have two X's and hence two chances to get the normal allele. Thus, X-linked mutations tend to be rare in women. The second reason for female rarity is that women who express the mutation must have two X chromosomes that carry the trait and they necessarily got one from their father, who would have also expressed the trait because he only had one X chromosome in the first place. If the trait lowers the probability of fathering a child or induces the father to only have children with women who aren't carriers (so as not to create daughters who are carriers rather than expressers and then only if no genetic screening is used) then women become even less likely to express the trait.

Be Cool and See where "NO" or NOT in the questions carefully

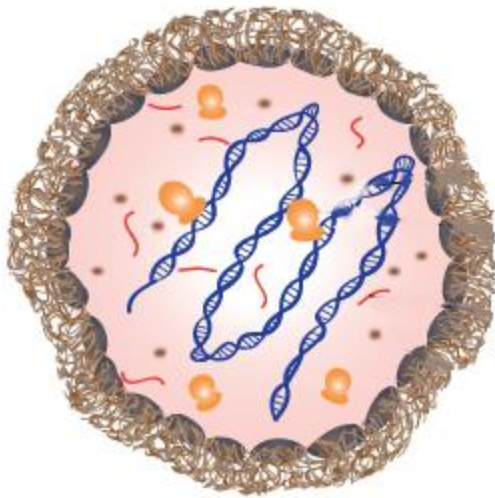
Negative worded questions are an important part of NEET (AIPMT) examination. In these types of questions you have to concentrate on the word 'not' or 'wrong'.

Example 1: Which one of the following statements about mycoplasma is wrong?

- (a) They are pleomorphic
- (b) They are sensitive to penicillin
- (c) They cause diseases in plants
- (d) They are also called PPLO.

Answer: (b) While working at the Rockefeller Institute, Brown reported isolation of a PPLO from human arthritic joint tissue in 1938. In 1949, Diennes reported to the 7th International Rheumatology Congress the isolation of PPLO from the genitourinary tracts

of men afflicted with arthritis. In discussing the significance of this observation, Brown reported successful treatment of arthritic patients in 1949 with a new antibiotic called aureomycin.



Mycoplasmas show pleomorphism means they have ability to alter their shape and size in response to environmental conditions. Several species are pathogenic in humans, including *M. pneumoniae*, which is an important cause of a typical pneumonia and other respiratory disorders, and *M. genitalium*, which is believed to be involved in diseases. They are also called pleuro-pneumonia like organisms (PPLO).

Example 2: Which one of the following is not a bio indicator of water pollution?

- (a) blood-worms
- (b) Stone flies
- (c) Sewage fungus
- (d) sludge-worms

Answer: (b) Stone flies are not bio indicators. Bio indicators provide a range of techniques to assess the impacts of air pollution from reactive nitrogen (N) compounds on statutory nature conservation sites. They complement physical monitoring of atmospheric concentrations and deposition and risk assessment based on the critical loads approach by providing site-based information on atmospheric N concentrations, N deposition and/or ecological impacts. Bloodworms and sludge worms are red because they contain hemoglobin. They take in oxygen by diffusion over the whole of their body surface. This allows them to survive in water with lower oxygen concentrations (polluted water) than other similar organisms. Mayfly and stonefly nymphs breathe using external gills. They have no hemoglobin, so the oxygen circulates in their bodies in simple solution. This means they need a higher concentration of oxygen to survive than bloodworms and sludge worms. *Sphaerotilus* or *Sphaerotilus natans* is an aquatic periphyton organism associated with polluted water. Periphyton is a complex mixture of algae, cyanobacteria, heterotrophic microbes, and detritus that is attached to submerged surfaces in most aquatic ecosystems. It forms colonies commonly known as "sewage fungus", but later identified as tightly sheathed filamentous bacteria.

Be cool and Look for Right Match

Sometimes such questions are asked in which we have to find the correctly matched or mismatched option. These questions are clearly concept based.

Example 1: Which of the following pairs are correctly matched? Animals - Morphological features

(i) Crocodile - 4-chambered heart (ii) Sea urchin - Parapodia (iii) Obelia - Thecodont (iv) Lemur - Thecodont

(a) (ii), (iii) and (iv)

(b) Only (i) and (iv)

[CBSE PMT

2007]

(c) Only (i) and (ii)

(d) (i), (iii) and (iv)

Answer: (d) Crocodile belongs to reptilia class which has four chambered heart lemur teeth are embedded in the sockets of jaw bones which is known as thecodont. In obelia polyps reproduce asexually to form medusae and medusae form the polyps sexually. Such alteration of asexual and sexual phases in the life cycle of obelia is called metagenesis.

Example 2: Which one of the following pairs is wrongly matched?

[CBSE

PMT 2007]

(a) Yeast - ethanol

(b) Streptomyces - antibiotic

(c) Coliforms - vinegar

(d) Methanogens - gobar gas

Answer: (c) Coliforms are a broad class of bacteria found in our environment, including the feces of man and other warm-blooded animals. The presence of coliform bacteria in drinking water may indicate a possible presence of harmful, disease-causing organisms.

Example 3: Which one of the following is a matching pair of a body feature and the animal possessing it?

(a) Ventral central - Leech nervous system

(b) Pharyngeal gill slits -

Chameleon absent in embryo

(c) Ventral heart - Scorpion

(d) Post-end tail - Octopus

Answer: (a) Leech has ventral central nervous system which consists of nerve ring, and a solid, double, mid ventral nerve cord with ganglia.

Be cool you have remember also many topics

Learning is an essential part of NEET (AIPMT) examination. Many questions are asked which is completely memory based. So there is a need to memorize the scientific name, common names, definitions and concepts.

Example 1: The concept of chemical evolution is based on [CBSE PMT 2007]

- (a) Interaction of water, air and clay under intense heat
- (b) Effect of solar radiation on chemicals
- (c) Possible origin of life by combination of chemicals under suitable environmental conditions
- (d) Crystallization of chemicals

Answer: (c) The concept of chemical **evolution** is based on possible origin of life by combination of chemicals under suitable environmental conditions. The distribution of elements in the cosmos is the result of many processes in the history of the Universe. It provides us with a powerful tool to study the Big Bang, the density of baryonic matter, nucleo-synthesis and the formation and evolution of stars and galaxies.

Example 2: Ergot of rye is caused by a species of [CBSE PMT 2007]

- (a) uncimula
- (b) ustilago
- (c) claviceps
- (d) phytophthora

Answer: (c) Ergot of Rye is a plant disease that is caused by the fungus *Claviceps purpurea*. The so-called ergot that replaces the grain of the rye is a dark, purplish sclerotium, from which the sexual stage, of the life cycle will form after over wintering.

Example 3: In the hexaploid wheat, the haploid (n) and basic (x) numbers of chromosomes are

- (a) $n = 21$ and $x = 21$
- (b) $n = 21$ and $x = 14$ [CBSE PMT 2007]
- (c) $n = 21$ and $x = 7$
- (d) $n = 7$ and $x = 21$

Answer: (c) The basic number (x) of wheat is 7 so, $6x = 2n = 42$ and $n = 21$

Be very cool and relate with life, apply it

In NEET (AIPMT) application based questions find a very important place. If you are able to decide on those questions you can score good marks in the exam.

Example 1: If you suspect major deficiency of antibodies in a person to which of the following would you look for confirmatory evidence?

(a) Serum globulins

(b) Fibrinogen in the plasma

[CBSE

PMT 2007]

(c) hemocytes

(d) Serum albumins

Answer: (a) Serum globulins it makes 2 to 3% of plasma proteins. The a and b – globulin sent with the hormones to transport them the r-globulin from antibodies.

Example 2: A person, who is on a long hunger strike and is surviving only on water, will have

(a) Less amino acid in his urine

(b) More glucose in his blood

[CBSE

PMT 2007]

(c) Less urea in his urine

(d) More sodium in his urine

Answer: (c) Due to a long hunger strike and survival on water, a person will have less urea in his urine because urea comes to kidney as a waste product from liver which is formed after the breakdown of protein fat, carbohydrate during hunger. It is not synthesized but the synthesized ones are catabolized.

Example 3: The population of an insect species shows an explosive increase in numbers during rainy season followed by its disappearance at the end of the season. What does this show? [CBSE PMT 2007]

(a) The food plants mature and die at the end of the rainy season

(b) Its population growth curve is of J-type

(c) The population of its predators increases enormously

(d) S-shaped or sigmoid growth of this insect

Answer: (c) If a population (e.g reindeer population) is allowed to grow in a predator free environment, the population grows beyond carrying capacity and there occurs population crash due to sudden shortage of food. Such growth curves also occur in insect populations during rainy season, and in Algal blooms.

Example 4: Two cells A and B are contiguous. Cell A has osmotic pressure 10 atm, turgor pressure 7 atm and diffusion pressure deficit 3 atm. Cell B has osmotic pressure 8 atm, turgor pressure 3 atm and diffusion pressure deficit 5 atm. The result will be

(a) No movement of water

(b) Equilibrium between the two

(c) Movement of water from cell A to B

(d) Movement of water from cell B to

A

Answer: (b) Movement of water will be from low DPD to high DPD i.e. from A to B

- Never give the final answer for those questions for which you are not sure because your wrong answer will reduce your grand total. Simply leave such questions.
- Divide the 3 hour's time as per your comfort with the subjects.
- First attempt simple questions and those questions in which you have confidence.
- Then in second round, you can solve difficult questions by your alert and active mind.
- READ, READ AND READ NCERT books.
- EAT, DIGEST and ASIIMILATE NCERT.
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BEST WISHES TO NEET ASPIRANTS-NEELESH



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