

Promising Career Options for PCB Students after 12th Apart from Medical

1. Botany:

It is a well-established branch of biology that involves the study of plants, their structure, processes, growths, etc. Those in the field of Botany conduct research and observation to discover new species, study the interactions of plants with different organisms in their environment, genetic formation of plants, etc.

Career Opportunities:

With a degree in Botany, you can work in landscape industries, natural resource centers, environmental consultancies, or as a researcher, teacher/professor, taxonomist, horticulturist, nursery manager, and environmental consultant.

2. Zoology:

This exciting field involves the study of the animal kingdom. Zoologists analyze the structure, life processes, genetics, physiology, classification and interactions of various species in detail by observing animals in their natural habitats as well as laboratories.

Career Opportunities:

With a degree in Zoology, you can find work as a researcher, animal breeder, wildlife rehabilitator, wildlife biologist, zoo curator, conservationist, teacher/professor in schools and colleges, etc.

3. Microbiology:

It is the study of microscopic organisms such as bacteria, fungi, viruses etc. and their interactions with humans, animals, plants and other organisms in the environment. Microbiologists research and investigate how different microorganisms affect our lives. It consists of various subfields such as virology, bacteriology, parasitology, mycology etc.

Career Opportunities:

Typical employment opportunities include clinical researcher, research scientist, lab technician, quality control, working in pharmaceuticals, health sector, food industries, breweries, distilleries, agriculture, etc.

4. Biochemistry:

It is a branch of science that involves the study of chemical processes and substances which occur within living organisms. It is a laboratory-based science that brings together biology and chemistry, as biochemists solve biological problems through concepts of chemistry. Examples of work include improving the process of photosynthesis to improve crop yield, discovery and development of new chemical process to produce biofuel, etc.

Career Opportunities: Since it is a growing field, you can find numerous exciting opportunities such as biomedical scientist, forensic scientist, clinical laboratory technologist, toxicologist, research scientist, healthcare scientist, pharmaceutical sales representative, consultant, patient care coordinator, lab technician, medical coder, teacher/professor, etc.

5. Environmental Sciences:

Environmental science is an essential field in the current world, and involves the study of the physical, chemical and biological components of the environment and their interactions. Environmental scientists investigate environmental issues such as global warming, ozone depletion, waste management, water pollution, etc., and how these issues can be dealt with.

Career Opportunities: Environmental scientists are hired for research and other roles by various industries such as mines, water-treatment plants, fertilizer plants, etc. and different government departments and agencies such as forestry, pollution control board, agriculture, etc.

6. Genetics:

This interesting field involves the study of genes and their functions, genetic variations and heredity of living organisms. Professionals in this field study genetic diseases, anomalies, traits, mutations, how genes are transmitted, interactions of genes with their environment, etc. Geneticists can apply their knowledge to as diverse areas as treating patients with genetic anomalies, to developing pharmaceutical products.

Career Opportunities: Jobs related to genetics include becoming a geneticist, immunologist, cytogeneticist, forensic DNA analyst, medical technologist, geneticist, pharmacologist, clinical research associate, research scientist, etc.

7. Bioinformatics:

This field combines together biology, computer science, and information technology. Professionals in this field work on developing and using tools and techniques for analyzing biological data. For example, a bioinformatics professional might develop software for accessing and analyzing data from biomedical and pharmaceutical studies.

Career Opportunities: You can work as a bioinformatics analyst or a developer with pharmaceutical and biotechnology companies, healthcare organizations, pharmaceuticals and with research agencies after graduating from this field. You can also work as a clinical research associate, bio analyst, or as a medical coder.

8. Physiology:

It is the study of bodily functions, activities and mechanisms of living organisms, especially humans. Physiologists generally study a wide variety of topics including organs, anatomy, cells, biological compounds, and muscles, and how they interact and work together to keeps the body functioning. In

addition to studying human physiology, there are other branches of the field, including plant physiology, cellular physiology, microbial physiology, etc.

Career Opportunities: Professional opportunities in this field include working as a clinical-exercise physiologist, biomedical scientist, physiotherapist, sports physiologist, researcher, teacher/professor etc.

9. Marine Biology:

It is a field of knowledge involving the study of marine organisms, including their behaviour, and interactions with the environment. Another related career to this is Fishery Science. The field of marine biology is quite diverse, and there is no single job by the name of “marine biologist”, and this title can be held by any professional closely involved with marine life and organisms.

Career Opportunities: You can find work as an aqua culturist, fishery biologist, environmental consultant, researcher, etc.

10. Biotechnology:

It is a field that combines biology and technology. It utilizes living organisms such as cells and bacteria in the industrial process. Biotechnology professionals work on different areas to improve our life, including developing cleaner and safer fuels, improving crop yields, improving the production of food items, developing drugs to deal with deadly diseases, etc.

Career Opportunities: You can go into pharmaceuticals, healthcare, genetics, or clinical research. Many government and private industries in the fields of agriculture, animal husbandry, nutrition, cosmetics, marine biotechnology, environmental conservation and waste management, etc. hire candidates with degrees in biotechnology. You can also work in sales and marketing, quality control, administration, or as a laboratory assistant or a field technician.

11. Biophysics:

This field combines the principles of Physics with those of Biology. Biophysicists study organisms at the cellular and molecular level using the methods and approaches of Physics. It is an advancing field, involving state-of-the-art technology, physical measurements and computational models.

Career Opportunities: Jobs in this field include becoming a nuclear medical biophysicist, clinical biophysicist, forensic biophysicist, nutritional biophysicist, professor, etc. A prime career avenue is research, and you can find work as a research scientist in various government and private organizations.

12. Biomedical Science

It is an applied science that combines different aspects of different disciplines to develop interventions, technology and knowledge in the domain of health care. Biomedical scientists work to study how cells, organs, and processes function in the human body, and thus, their work is applied to the understanding and treatment of diseases.

Career Opportunities: The knowledge and skills gained in this career allow you to work as a biomedical scientist, clinical researcher, forensic scientist, toxicologist, immunologist, and other healthcare professions. It is a relatively new, yet fast-expanding field in India.

13. Food and Agriculture:

This is a wide domain consisting of various fields related to the understanding of biological and chemical processes that affect plants, dairy, and the production of food. It includes fields such as food science & technology, agronomy, horticulture, dairy technology, agricultural engineering, etc.

Career Opportunities: The career paths and opportunities for each of these careers are very vast. Some common ones include, process development scientist, product development scientist, agricultural consultant, agricultural manager, research and development, etc. Other opportunities are specific to the particular career, such as horticulturist, floriculturist, food technologist, dairy technologist, soil Scientist, plant scientist, animal nutritionist, etc.

14. Allied Medicine

If you are really keen on pursuing a Medical career, yet don't wish to go down the challenging road of an M.B.B.S, and then the Allied Medicine domain could be the one for you. This is again a wide domain that consists of different healthcare careers that are distinct from doctors, yet assist doctors in their work. These include a wide range of careers such as Physiotherapy, Audiology, Occupational Therapy, Medical Lab Technology, Clinical Research, Radiology, etc. The career paths, colleges and opportunities for each of these careers are very vast.

Career Opportunities: The career opportunities for each of these careers pertain to the specific field, hence are very vast. A common workplace for most of these careers is hospitals. Additionally, pathology labs are a prime workplace for medical lab technologists; while, physiotherapists and occupational therapists can work in clinics or can even set up their own private practice. Radio technicians and optometrists work closely alongside doctors to facilitate their work. Clinical Researchers essentially work on research projects in laboratories of hospitals, pharmaceuticals and universities. Occupational therapists work on a one-to-one basis with clients and patients at various NGOs, special schools, social service departments, etc. The roles of public health administrators are more related to management and administration of hospitals and health-care systems, and they work mainly with hospitals, government organizations and NGOs.