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Dt. 5th Dec. 2016, issued by CBSE

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CLASS 11

Open Text Based Assessment

OTBA BIOLOGY

Strictly Based on the Latest Syllabus issued by CBSE Board

For
MARCH
2017
Exam

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PREFACE

CBSE's curriculum making methodology is based on National Curriculum Framework-2005. As per which, CBSE continuously tries to come up with new ideas for improvement in curriculum. As a part of upgrading the curriculum, CBSE has introduced Open Text Material Assessment (OTBA) for use as a part of Summative Assessment II for Class IX.

According to CBSE, the concept of an Open Text-Based Assessment is meant to test the student's skills pertaining to information processing, comprehension, analysis and inference. It will also help in developing **High Order Thinking Skills** among student moving them away from rote learning.

As per the CBSE Circular No. **Acad - 47/2016, dated December 5th, 2016** CBSE has revealed that SA-II will include a section on OTBA of 10 marks. Question will be asked from the latest Themes provided by the Board for the Units mentioned in the syllabus. The main objective of introducing this element is to provide opportunities to students to apply theoretical concepts to a real-life scenario mentioned in the themes. This would also encourage active group learning in the class.

We at Oswaal Books, always try to keep pace with the dynamic approach of the CBSE. Hence, our latest offering is **OTBA Question Bank with Solutions** for 3 subjects for class XI as specified by the Board—Economics, Geography and Biology. It is a comprehensive collection of questions from the prescribed Themes issued by CBSE. All the Questions have been developed by our Expert Authors' Panel, where each and every concept has been researched properly and the questions have been framed accordingly.

We are sure that this book will serve as a perfect teaching guide for the teachers and the students alike. It is expected that they will take full advantage of our knowledge and experience and sail through the final term examinations with ease.

Although enough care has been taken to make this book error free. We highly appreciate feedbacks and suggestions from our readers which will help us in improving this book.

We wish you all Happy Learning

—Publisher



केन्द्रीय माध्यमिक शिक्षा बोर्ड

(मानव संसाधन विकास मंत्रालय, भारत सरकार, के अधीन एक स्वायत्त संगठन)
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CENTRAL BOARD OF SECONDARY EDUCATION

(An Autonomous Organization under the Union Ministry of Human Resource Development, Govt. of India)
"Shiksha Sadan", 17, Institutional Area, Rouse, Avenue, New Delhi-110002.

CBSE/ACAD/OTBA/2016

5th December, 2016

Circular No : Acad-47/2016

To

All the Heads of Institutions affiliated to CBSE.

Subject : Availability of text material for Open Text Based Assessment (OTBA) for classes IX & XI, 2017

The Central Board of Secondary Education recommends that multiple modes of assessment need to be provided to cater to the varied abilities of individual strengths of learners. Accordingly, an element of Open Text Based Assessment for classes IX and XI was introduced by the Board in 2014 Examination. These are meant to incorporate analytical and higher Order thinking skills, thus moving away from rote memorization. The following open text materials for Classes IX and XI are being provided for the Examination in 2017 as per the curriculum issued.

Class XI

Sr. No.	Subject (Code)	Specified Units	Themes for OTBA	Marks Distribution for one Theme
1.	Geography (029)	Unit-VI : Life on Earth	1. Organic Farming 2. Naturalization of Humans and Humanization of Nature	5 + 5 = 10
2.	Biology (044)	Unit-V Human Physiology-(A)	1. Long Live Humanity 2. "Learn to live well"	5 + 5 = 10
3.	Economics (030)	Unit 6 : Development Experience of India	1. One Child Policy of China 2. Role of FDI in Economic Development	5 + 5 = 10

The detailed guidelines to teachers and frequently asked questions are enclosed for reference. Please note that

no questions shall be sent to the schools for conducting class XI examination. The schools are advised to prepare their own question papers as per curriculum. For class IX, the question paper which can be downloaded from the ITMS shall have the component of OTBA.

Sd/-

(Manoj Kr. Srivastava)

JS (ART & I)

Encl :

Annexure 1 : Guidelines to teachers for Open Text Based Assessment

Annexure 2* : Frequently Asked Questions (given in detail on the next page).

Annexure 3 : Open Text Material for Class IX, 2016

Annexure 4 : Open Text Material for Class XI, 2016

Frequently Asked Questions ^{© Annexure-2} on OPEN TEXT-BASED ASSESSMENT

(updated in December 2016)
(source : www.cbse.nic.in)

Query 1 :

Will the OTBA marks will also be part of Summative Assessment-I ?

If these are parts of SA-I then what will be the maximum marks for each subject 90 or 100 ?

If not then how these marks will be reflected in the Report Card ?

Reply :

The OTBA has been introduced in Summative Assessment II only. Hence till further directions are issued, both SA-I and SA-II will be of 90 Marks only. The Report Card will reflect grade points/grades based on Students performance in Formative Assessments 1,2,3,4 and Summative Assessments I and II.

Query 2 :

Are students allowed to carry the Open text material with them to the examination Centre ?

Whether questions will be based on the same text material supplied to the schools?

Reply :

The question paper in each main subject will have a separate section of 10 marks for open-textbased assessment (OTBA). The OTBA section will comprise of 2-3 questions based on that text. The concerned open text theme will be supplied along with question paper. Hence, there is no need of carrying the Open Text material to the Examination Centre. The questions will be based on one of the two themes of open text material supplied to students in advance.

Query 3 :

The Board has announced that there will be OTBA in all the main subjects in class IX, but questions in Sanskrit and other languages are not there. So whether OTBA will be only in Hindi or the Board will supply the same for Sanskrit also?

Reply :

The OTBA has been introduced at present in the five main subjects of Secondary level, i.e., Hindi, English, Mathematics, Science and Social Science. For rest of the subjects/languages, the teachers are expected to follow prescribed syllabus and question paper design.

Query 4 :

The Board has been placing more importance on assessment of higher order thinking skills. Is not recalling and remembering important for students?

Reply :

The importance of recalling and remembering cannot be denied in the teaching learning process. Based on the knowledge of facts, figures, events, etc., that the learner is able to further process it, derive meaningful information and apply to new situations for further enrichment and extension of his/her learning. Hence it is very important that knowledge of facts and events is integral to the teaching learning process and used as a base to acquire more in-depth information and skills.

Query 5 :

With the introduction of OTBA the stress on students has increased as they will be required to study more for examination.

Reply :

The OTBA aims to reduce the learning stress on students in many ways. With the supply of text material to students

in advance, sufficient time is given to students to process it and link the learnt concepts to given situation. Since the text material is also part of the Question paper, the student is relieved from the burden of remembering the content given there in.

Query 6 :

OTBA is introduced only in two languages, Hindi and English of Class IX. Can the school, not offering these two languages, assess students on Open Text material developed by them in other languages offered?

Reply :

OTBA is an alternative mode of assessment which can be tried by teachers in any subject of their choice in formative assessment/s. However, as far as Summative Assessment is concerned, the question paper will be set as per the prescribed design and syllabus.

Query 7 :

Will the questions in examination be based on the open text material supplied to students?

Reply :

The questions under OTBA Section will not be directly based on the text material supplied. Rather it will test the students' ability to apply the learnt concepts (in the unit specified as per syllabus) to the situation given in the open text material. The students will be tested on their ability to comprehend, analyze and interpret the given situation and offer suggestions and opinions on the given issues based on their knowledge of concepts.

Query 8 :

How will OTBA help the slow learners?

Reply :

The role of teachers is to motivate all sections of learners and provide opportunities to students to apply theoretical concepts to a real-life scenario by encouraging active and group learning in the Class. It is expected that through cooperative learning and teachers' encouragement and guidance, all students will strive ahead to achieve expected levels of learning.

Query 9 :

How should teachers take up open text material in class room situation?

Reply :

The teachers are expected to read, discuss and analyze the open text material with respect to :

- Objectives.
- Concepts involved
- Application of concepts to situation
- Description and further explanation of the Case/problem
- Higher Order thinking skills involved.
- Different perspectives.

They should then assign them to students in groups for further analysis and discussions.

Query 10 :

Are the sample questions on OTBA uploaded by the Board for classes IX & XI final or the Board will again supply questions for annual examination ?

Reply :

The Questions given along with the Open Text Material in different subjects are only as Samples. The teachers are expected to use them as base and develop more such open ended questions for use by students. The Examination Questions will be different from the ones given as Samples.

Bloom's Taxonomy and its relevance to CBSE curriculum

Over the years, the examination questions in India, have been testing the low order thinking skills at the very bottom of Bloom's Taxonomy like Remembering and Understanding.

But with the continuous evolution of CBSE, over the last 3 years we have seen some path breaking cognitive learning tools introduced by CBSE. They not only develop high order thinking skills among students but also increase the overall cognitive learning of students which includes—Application, Analysis, Evaluation & Creation.

HOTS, Value Based Questions and OTBA, introduced by CBSE have been targeted at penetrating into the topmost layers of Bloom's Taxonomy.

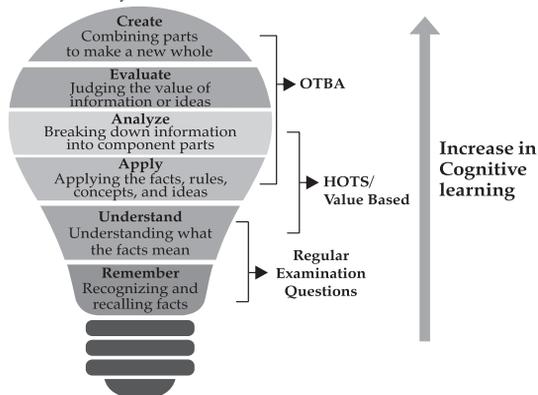


Table : Description of levels of Bloom's Taxonomy with relevant Questions from the latest OTBA Themes.

DESCRIPTION OF LEVEL	EXAMPLE OF MEASURABLE STUDENT OUTCOME	EXAMPLES
1. REMEMBER	Recall, or recognition of terms, ideas, procedure, theories, etc.	Can you name the bird hospital established in the year 1929 ?
2. UNDERSTAND	Translate, interpret, extrapolate, but not see full implications or transfer to other situations, closer to literal translation.	What is meant by the term 'Golden Hour'?
3. APPLY	Apply abstractions, general principles, or methods to specific concrete situations.	From the information given, can you develop a set of instructions to avoid road accidents.
4. ANALYSE	Separation of a complex idea into its constituent parts and an understanding of organization and relationship between the parts. Includes realizing the distinction between hypothesis and fact as well as between relevant and extraneous variables.	Agriculture is one of the most primitive activity of human which has transformed humans from hunter and food gatherer to a settled cultivator. How has this activity affected the Environment ?
5. EVALUATE	To make a judgment of ideas or methods using external evidence or self-selected criteria substantiated by observations or informed rationalizations.	The drought situation in Vidarbha region of Maharashtra has not improved much, instead it has worsened over the years. Justify the statement.
6. CREATE	Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure.	Draft a plan as to how the local people can look after stray and wounded animals in the neighbourhood.



open text-based
Assessment
2016-17



Class

XI

Biology

Themes :

1. Long Live Humanity
2. 'Learn to live well'



Central Board of Secondary Education
Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110092, India

Biology

Code (044)

Theme 1 : *Long Live Humanity*

Abstract

What began with the kidney has now expanded to hearts, lungs, livers and other organs. Development of cadaveric and living organ donation practices, deciding who can donate organs has been a flexible and changing process, starting with living donors and then moving to include deceased and brain dead donors. The debate about increasing and restricting the pool of eligible donors continues today.

Development of anti-rejection drugs have done wonders to increase the success of organ transplants. This intriguing field of study becomes more attractive to some researchers as the number of people needing organ transplants through donation continues to grow. Stem cell research is examining adult and human embryo cells in an attempt to discover how organs are developed and what stimulates their growth.

The way humans die has changed significantly during the past half-century. Once a sudden and unexpected event, death has become an actively managed and often prolonged process that occurs more often in hospitals than in the community. Advances in healthcare, in particular, have transformed the way we die. Organ failure, for example, is no longer inextricably linked to death. Patients with end-stage renal disease are routinely dialyzed for many years. The lives of patients with cardiac failure can be prolonged with inotropic and chronotropic therapies, and patients with respiratory failure can receive invasive and non-invasive ventilation in hospital or at home. Also, for more than 100,000 patients per year of the estimated 1.7 million patients worldwide in need of transplant for failing organs, the transplantation of organs and tissues from patients that have died in intensive care settings provide significant benefits - reducing mortality and morbidity, increasing long-term survival, increasing quality of life and reducing the economic burden of the cost of healthcare for patients with chronic diseases.

Organ transplantation—the surgical removal of a healthy organ from one person and its transplantation into another person whose organ has failed

or was injured—is often life-saving and gives the recipient a wonderful new lease of life. But organ transplantation is also a major surgery that carries potential risks and drawbacks, such as the chance of organ rejection. That’s precisely why you and your loved ones need to gather as much information as possible on organ transplants.

Organ donation is the donation of biological tissue or an organ of the human body from a living or dead person to a living recipient in need of a transplantation. The lungs, heart, liver, intestine, kidneys, pancreas, cornea, skin, bone marrow, heart valves, middle ear and tendons of brain dead patients can be used in other patients.

Organs & Tissues for Donation

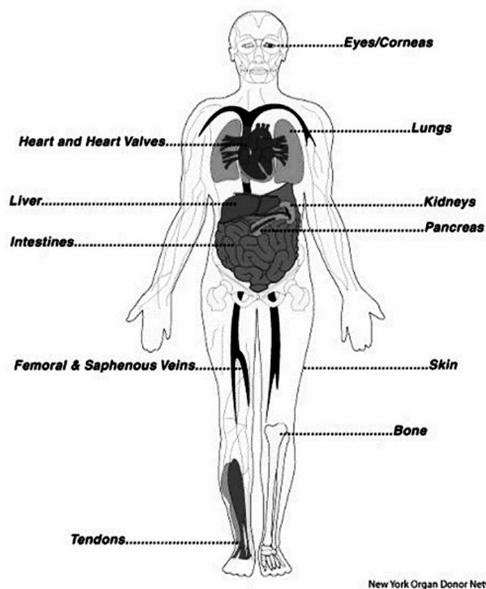


Fig 1 : Different Organs used for donation

Organ donation and transplants are one of the most miraculous achievements of modern medicine. But they depend entirely on the generosity of donors and their families who are willing to make this life saving gift to others. In India, transplantation of human organs Act, 1994 legalised Brain Death and removal of organs for therapeutic purposes. It also banned commercial trading of organs from living unrelated donors.

Knowledge and attitude towards Organ Donation

Of course, it does take a lot of courage for the grieving families to let the doctors harvest the organs of their loved ones. That too, at a time when they are just coming in terms with the irreparable loss of their family member. But by donating organs, they will set an example for others to follow. However, more needs to be done. Consider this: In India, less than 5,000 kidney transplants are carried out annually against an estimated requirement of over 175,000. Similarly, only 1,000 liver transplants are performed every year where over 50,000 perish due to end-stage liver diseases. The annual requirement of hearts is estimated at around 50,000 and lungs about 20,000.

Today in India the demand of organs for transplantation far exceeds the supply. Transplant technology and surgical methods continue to improve the enhancing chances of survival and improved quality of life for the recipient. But this rapid enhancement in research related to transplant technology is not accompanied by a parallel increase in the availability of donor organs. The success of deceased donor programmes is dependent on knowledge and attitude of people towards organ donation.

Further studies found that 42% persons are willing to be organ donors, 48% are undecided in urban areas, which is a large percentage of people who on effective dissemination of knowledge could be convinced to be donors. Reasons for unwillingness to be a donor may be fear of misuse of organs by medical personnel and lack of knowledge about procedure of organ donation. Three basic areas of donor risks : Surgical risks, Long-term health impacts, Emotional/psychological impacts. Small surgical issues include problems with anesthesia, infection, wound healing issues, collapsed lung fluid in the lungs (pneumonia) and pain. Long term health impacts include common misconceptions like donor will get kidney disease/failure, donor's lifespan will be shorter and donor will need major lifestyle adjustments for one kidney. Psychological impacts include : fear that the donor may have regrets, emotional struggles are not common, but possible; more likely if the transplant does not go as planned.

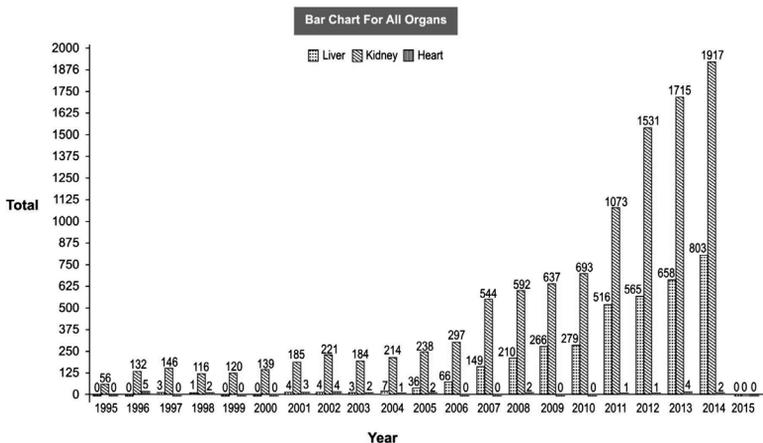


Fig 2 : Statistical analysis of donated organs (Year-wise)

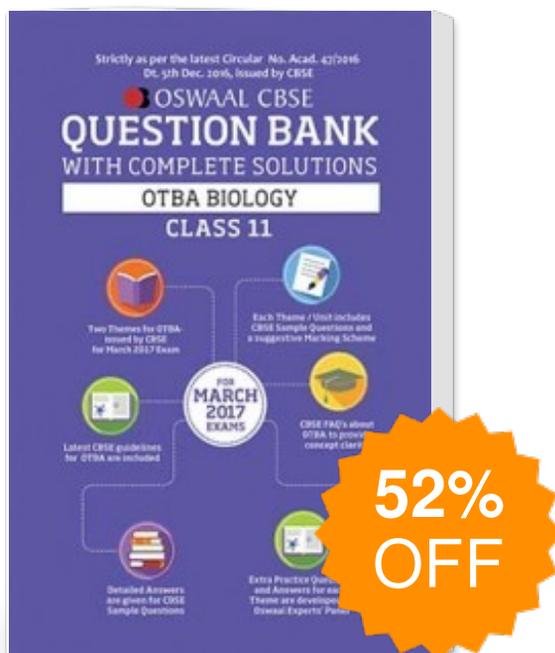
Types of Donors

Majorly there are two types of donors : living donors and cadaver donors and two types of deaths : cardiac death and brain death. Conditions that progress to brain death include lethal head injury, brain hemorrhage. Brain death is irreversible loss of consciousness, absence of respiration, flat EEG, loss of brain stem reflexes. Brain death tests include : no papillary response to light, no eye movement following irrigation of the ear canal with ice water, no response to corneal stimulation, no cough or gag reflex, no spontaneous breathing. Brain dead patients are always kept in the intensive care unit of the hospital and their blood pressure and respiration are artificially maintained.

Certain facts for End Stage Renal Disease (ESRD)

About two lakh people need kidney transplant every year. About 6000 transplants are done every year but only 600 use cadaver donations. Kidney failure can be a gradual process and symptoms may not be seen until the disease is very advanced. Kidney failure occurs when the kidneys are no longer able to remove waste and maintain fluid balance in the body. Without some form of treatment, this would result in death. The two types of treatment for kidney failure are dialysis or transplantation. There are two different kinds of dialysis : hemodialysis or peritoneal dialysis. Kidney transplantation is the third option for people with chronic kidney failure. In a kidney transplant, the donated kidney is surgically placed in the lower abdominal area and replaces the function of the natural kidneys.

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