August 17, 2017

Q.1) Which of the following is/are false about Neural Networks?

a) They are artificial copy of the human brain
b) They have high computational rates than conventional computers
c) They learn by examples
d) None of the above

Q.1) Solution (d)

ANNs are processing devices (algorithms or actual hardware) that are loosely modeled after the neuronal structure of the mamalian cerebral cortex but on much smaller scales. A large ANN might have hundreds or thousands of processor units, whereas a mamalian brain has billions of neurons with a corresponding increase in magnitude of their overall interaction and emergent behavior. Although ANN researchers are generally not concerned with whether their networks accurately resemble biological systems, some have. For example, researchers have accurately simulated the function of the retina and modeled the eye rather well.

By looking for common patterns in millions of bicycle photos, for instance, a neural network can learn to recognise a bike.

This is how Facebook identifies faces in online photos, how Android phones recognise commands spoken into phones, and how Microsoft Skype translates one language into another. But these complex systems can also create art.

In the 1990s, neural networks were used for cross-breeding sounds from very different instruments. Say, a bassoon and a clavichord. Creating instruments capable of producing sounds no one has ever heard.

Much as a neural network can learn to identify a cat by analysing hundreds of cat photos, it can learn the musical characteristics of a bassoon by analysing hundreds of notes.

How Do Neural Networks Differ From Conventional Computing?

To better understand artificial neural computing it is important to know first how a conventional 'serial' computer and it's software process information. A serial computer has a central processor that can address an array of memory locations where data and instructions are stored. Computations are made by the processor reading an instruction as well as any data the instruction requires from memory addresses, the instruction is then executed and the results are saved in a specified memory location as required. In a serial system (and a standard parallel one as well) the computational steps are deterministic,

sequential and logical, and the state of a given variable can be tracked from one operation to another.

In comparison, ANNs are not sequential or necessarily deterministic. There are no complex central processors, rather there are many simple ones which generally do nothing more than take the weighted sum of their inputs from other processors. ANNs do not execute programed instructions; they respond in parallel (either simulated or actual) to the pattern of inputs presented to it. There are also no separate memory addresses for storing data. Instead, information is contained in the overall activation 'state' of the network. 'Knowledge' is thus represented by the network itself, which is quite literally more than the sum of its individual components.

What Applications Should Neural Networks Be Used For?

Neural networks are universal approximators, and they work best if the system you are using them to model has a high tolerance to error. One would therefore not be advised to use a neural network to balance one's cheque book! However they work very well for:

- capturing associations or discovering regularities within a set of patterns;
- where the volume, number of variables or diversity of the data is very great;
- the relationships between variables are vaguely understood; or,
- the relationships are difficult to describe adequately with conventional approaches.

Source: http://www.thehindu.com/todays-paper/tp-national/how-artificial-intelligence-is-reshaping-art-and-music/article19499782.ece

Q.2) Which of the following is/are Sub Mission of the National Mission on Agricultural Extension and Technology (NMAET)

1. Sub Mission on Agricultural Extension (SMAE)
2. Sub-Mission on Seed and Planting Material (SMSP)
3. Sub Mission on Agricultural Mechanization (SMAM)
4. Sub Mission on Plant Protection and Plant Quarantine (SMPP)

Select the correct code

a) 1, 2 and 3
b) 2, 3 and 4
c) 1, 2 and 4
d) All of the above

Q.2) Solution (d)

The aim of the Mission is to restructure and strengthen agricultural extension to enable delivery of appropriate technology and improved agronomic practices to farmers.

Objective is envisaged to be achieved by a judicious mix of extensive physical outreach and interactive methods of information dissemination, use of ICT, popularisation of modern and appropriate technologies, capacity building and institution strengthening to promote mechanisation, availability of quality seeds, plant protection etc. and encourage aggregation of Farmers into Interest Groups (FIGs) to form Farmer Producer Organisations (FPOs).

The Mission has four components:

- Sub Mission on Agriculture Extension, (SMAE)
- Sub Mission on Seed and Planting Material (SMSP),
- Sub Mission on Agricultural Mechanization (SMAM) and
- Sub Mission on Plant Protection and Plant Quarantine (SMPP).

Source: http://pib.nic.in/newsite/PrintRelease.aspx?relid=167092

Q.3) Consider the following statements about Integrated Child Development Services (ICDS)

1. It is under the aegis of Ministry of Health and Family Welfare
2. It is concerned with food, education and healthcare of children between the age of 6-14 years
3. Immunization is also sponsored under the scheme

Select the *incorrect* statements

a) 1 and 2
b) 2 and 3
c) 1 and 3
d) All of the above

Q.3) Solution (a)

Integrated Child Development Services (ICDS) is an Indian government welfare programme which provides food, preschool education, and primary healthcare to children under 6 years of age and their mothers.

Ministry of Child and Women Development

It is a Centrally Sponsored Schemes. It is implemented by states

The following services are sponsored under ICDS to help achieve its objectives:

- Immunization
- Supplementary nutrition
- Health check-up
- Referral services
- Pre-school non formal education
- Nutrition and Health information

Source: http://www.thehindu.com/todays-paper/tp-national/tp-telangana/abandoned-children-get-state-help/article19500860.ece

Q.4) "Sudoor Drishti" and TAMRA Portal is associated with which of the following ministries?

a) Ministry of Earth Sciences
b) Ministry of Mines
c) Ministry of Human Resource Development
d) Ministry of Commerce and Industry

Q.4) Solution (b)

Sudoor Drishti

IBM has entered into a MOU for project named "Sudoor Drishti" on 21st January, 2016, with National Remote Sensing Centre (NRSC), Department of Space, Government of India for monitoring of Mining activity through satellite under the Prime Minister's vision of 'Digital India'.

The project would facilitate to monitor periodic changes of the mining areas within the mining lease boundary.

TAMRA (Transparency, Auction Monitoring and Resource Augmentation) portal and Mobile Application

TAMRA will be an interactive platform for all the stakeholders to compress the timelines for statutory and other clearances as it would help minimize the gestation period for commencing production.

Further, TAMRA covers block-wise, state-wise and mineral-wise information of the blocks to be auctioned, monitors various statutory clearances, and also highlights the additional resources generated through e-Auction. In case of delay in obtaining any clearances, TAMRA will send triggers to the concerned authority so that the remedial steps can be taken immediately by those responsible. The Ministry of Mines will also receive triggers generated by TAMRA and will facilitate in expediting clearances. This portal also enables successful bidder to give suggestions/inputs.

Q.5) Swiss Challenge is concerned with

a) Black Money
b) European Union
c) Social Impact Assessment
d) A process of giving contracts

Q.5) Solution (d)

A Swiss challenge is a form of public procurement in some jurisdictions which requires a public authority (usually an agency of government) which has received an unsolicited bid for a public project (such as a port, road or railway) or services to be provided to government, to publish the bid and invite third parties to match or exceed it.
Some Swiss challenges also allow the entity which submitted the unsolicited bid itself then to match or better the best bid which comes out of the Swiss challenge process.